SCHEME : K

Name : _____

Roll No. : _____ Year : 20___ 20___

Exam Seat No. : _____

LABORATORY MANUAL FOR

APPLIED MULTIMEDIA TECHNIQUES (313003)

COMPUTER ENGINEERING GROUP

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI
(Autonomous) (ISO 9001: 2015) (ISO/IEC 27001:2013)

VISION

To ensure that the Diploma level Technical Education constantly matches the latest requirements of technology and industry and includes the all-round personal development of students including social concerns and to become globally competitive, technology led organization.

MISSION

To provide high quality technical and managerial manpower, information and consultancy services to the industry and community to enable the industry and community to face the changing technological and environmental challenges.

QUALITY POLICY

We, at MSBTE are committed to offer the best in class academic services to the students and institutes to enhance the delight of industry and society. This will be achieved through continual improvement in management practices adopted in the process of curriculum design, development, implementation, evaluation and monitoring system along with adequate faculty development programmes.

CORE VALUES

MSBTE believes in the followings:

- Skill development in line with industry requirements
- Industry readiness and improved employability of Diploma holders
- Synergistic relationship with industry
- Collective and Cooperative development of all stake holders
- Technological interventions in societal development
- Access to uniform quality technical education

A Laboratory Manual

for

Applied Multimedia Techniques

(313003)

Semester-III

(IF)

Maharashtra State
Board of Technical Education, Mumbai
(Autonomous) (1SO:9001:2015) (1SO/IEC 27001:2013)

Maharashtra State Board of Technical Education,
(Autonomous) (ISO:9001: 2015) (ISO/IEC 27001 : 2013)
4th Floor, Government Polytechnic Building, 49, Kherwadi,
Bandra (East), Mumbai - 400051.
(Printed on June, 2024)

MAHARASHTRA STATE

BOARD OF TECHNICAL EDUCATION

Certificate

This is to certify that Mr. / Ms. ..... Roll No.....'. of Third Semester of Diploma 1n …… of Institute,

(Code: .....) has completed the term work satisfactorily in course **Applied Multimedia Techniques (313003)** for the academic year 20.....to 20……. as prescribed in the curriculum.

Place: ..... Enrollment No:.....

Date: ..... Exam. Seat No: .....

Subject Teacher **Head of the Department** **Principal**

Seal of Institution

Preface

The primary focus of any engineering laboratory/ field work in the technical education system is to develop the much needed industry relevant competencies and skills. With this in view, MSBTE embarked on this innovative 'K' Scheme curricula for engineering diploma programmes with outcome-base education as the focus and accordingly, relatively large amount of time is allotted for the practical work. This displays the great importance of laboratory work making each teacher; instructor and student to realize that every minute of the laboratory time need to be effectively utilized to develop these outcomes, rather than doing other mundane activities. Therefore, for the successful implementation of this outcome-based curriculum, every practical has been designed to serve as a ***'vehicle'*** to develop this industry identified competency in every student. The practical skills are difficult to develop through 'chalk and duster' activity in the classroom situation. Accordingly, the 'K' scheme laboratory manual development team designed the practicals to ***focus*** on the ***outcomes,*** rather than the traditional age old practice of conducting practicals to 'verify the theory' (which may become a byproduct along the way).

This laboratory manual is designed to help all stakeholders, especially the students, teachers and instructors to develop in the student the pre-determined outcomes. It is expected from each student that at least a day in advance, they have to thoroughly read through the concerned practical procedure that they will do the next day and understand the minimum theoretical background associated with the practical. Every practical in this manual begins by identifying the competency, industry relevant skills, course outcomes and practical outcomes which serve as a key focal point for doing the practical. The students will then become aware about the skills they will achieve through procedure shown there and necessary precautions to be taken, which will help them to apply in solving real-world problems in their professional life.

This manual also provides guidelines to teachers and instructors to effectively facilitate student-centered lab activities through each practical exercise by arranging and managing necessary resources in order that the students follow the procedures and precautions systematically ensuring the achievement of outcomes in the students.

Animation is a field of both art and science that has the capability to bring life and zeal to non-living characters. The most amazing aspect of 2D& 3D animation is that it has a phenomenon of an eye that allows the image continues to appear in one's vision after the exposure to the original image has ceased.

2D animation involves the traditional animation method that has long been in existence. It is one animation that is followed by another in slightly different pose, followed by another in different pose, and so on. 3D animation is the form of animation that is completely done with a computer. These animations are created in X, Y and Z dimensional world. The 3D animation allows developer to do things that are not possible in 2D animation.

Although best possible care has been taken to check for errors (if any) in this laboratory manual, perfection may elude us as this is the first edition of this manual. Any errors and suggestions for improvement are solicited and highly welcome

Programme Outcomes (POs) to be achieved through Practical of this Course:

Following programme outcomes are expected to be achieved significantly out of the ten programme outcomes and Computer Engineering and Information Technology programme specific outcomes through the practicals of the course on Applied Multimedia Technique

Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

Problem analysis: Identify and analyze well-defined engineering problems using codified standard methods.

Design/ development of solutions: Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

Engineering Tools, Experimentation and Testing: Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.

Engineering practices for society, sustainability and environment: Apply appropriate technology in context of society, sustainability, environment and ethical practices.

Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

Life-long learning: Ability to analyze individual needs and engage in updating in the context of technological changes.

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Practical- Course Outcome matrix

Course Outcomes (COs)

a. Manipulate color models of image.
b. Perform edit operation on text and images using graphics processing tools.
c. Perform basic audio editing operations.
d. Perform basic video editing operations.
e. Create simple 2D Animation.

Design Web Pages with Multimedia components.

Sr. No.	Practical Outcome	CO a.	CO b.	CO c.	CO d.	CO e.	CO f.
1.a	*Manipulate color related attributes of given images using any graphical processing tools on RGB,CMYK, HSV, YIQ color models.	√					
1.b	*Convert given image into different image formats, observe and report the changes in image with respect to quality and file size.	√					
2.	*Apply different effects on text using 2D image processing software such as: • Drop shadow • Mirror • Reflection		√				
3.	Apply different effects on GIF image using 2D image processing software such as: • Image mirroring • Rainy season effect		√				
4.	Design advertising banner using graphics processing tools.		√				
5.	Design wallpaper showing water drop effect on GIF image using any 2D image processing software.		√				
6.	*Apply different effects on text to design poster using2D image processing software such as: • Ketchup • Rope • Fire • Fruit		√				
7.	Apply different style effects in JPEG image using 2Dimage processing software.		√				

8.	*Apply convert, merge, cut and join operation on digital audio files.			√			
9.	Apply convert, merge, cut and join operation on video using video processing tool.				√		
10.	Apply shape twinning and motion in 2D animation using 2D animation software.					√	
11.	*Apply bouncing and rolling ball down in 2Danimation using 2D animation software.					√	
12.	*Develop webpage which show animation with sound effect using any professional HTML5 editor.						√
13.	*Develop webpage by embedding video using any professional HTML5 editor.						√
14.	Develop a webpage for embedded video streaming using professional HTML5 editor.						√
15.	*Create animation for rotating ball with action script using animation software such as Blender.						√
16.	*Identify and experience Augmented Reality phenomena using gadgets such as smart phone/google glass.					√	

List of Industry Relevant Skills

The following industry relevant skills of the competency 'Develop 2D and 3D animation as per the specifications, Modifying Image(s), and applying effects on Image(s) are expected to be developed in you by undertaking the practical's of this laboratory manual.

1. Convert Image,
2. Apply Effects on Image(s)
3. Develop 2D and 3D Animations as per the specifications..

Guidelines to Teachers

1. There will be two sheets of blank pages after every practical for the student to report other matters (if any), which is not mentioned in the printed practicals.
2. For difficult practicals if required, teacher could provide the demonstration of the practical emphasizing of the skills which the student should achieve.
3. Teachers should give opportunity to students for hands-on after the demonstration.
4. Assess the skill achievement of the students and COs of each unit.
5. One or two questions ought to be added in each practical for different batches. For this teachers can maintain various practical related question bank for each course.
6. For effective implementation and attainment of practical outcomes, teacher ought to ensure that in the beginning itself of each practical, students must read through the complete write-up of that practical sheet.
7. During practical, ensure that each student gets chance and takes active part in taking observations/ readings and performing practical.
8. Teacher ought to assess the performance of students continuously according to the MSBTE guidelines.

Instructions for Students

1. For incidental writing on the day of each practical session every student should maintain a *dated log book* for the whole semester, apart from this laboratory manual which s/he has to *submit for assessment to the teacher* in the next practical session.

2. Listen carefully to all the information regarding curriculum, its course outcomes, and major learning outcomes, equipment(s) and instruments in the laboratory, method of assessment.
3. Read the write-up of each experiment to be performed, a day in advance
4. Organize the work in team/individual and record all the observations and output.
5. Understand the practical implication of the experiments.
6. Students should not hesitate to ask any question while performing the experiment.
7. Students should develop debugged and hand run skills
8. Students should develop the habit of discussion about experiments that is performed to enhance the understanding and sharing of knowledge.
9. Students to attend the practical class regularly and complete the laboratory work during the stipulated hours and submit the manuals for assessment regularly.
10. Students shall refer to technical magazines, refer websites, proceedings of seminars, related to scope of the course and enhance the knowledge and skills.
11. Student should develop self-learning methods.

Content Page

List of Practical's and Progressive Assessment Sheet

Sr No.	Practical Outcome	Page No.	Date of performance	Date of submission	Assessment marks (25)	Dated sign. of teacher	Remarks (if any)
1.a	*Manipulate color related attributes of given images using any graphical processing tools on RGB,CMYK, HSV, YIQ color models.						
1.b	*Convert given image into different image formats, observe and report the changes in image with respect to quality and file size.						
2.	*Apply different effects on text using 2D image processing software such as: • Drop shadow • Mirror • Reflection						
3.	Apply different effects on GIF image using 2D image processing software such as: • Image mirroring • Rainy season effect						
4.	Design advertising banner using graphics processing tools.						
5.	Design wallpaper showing water drop effect on GIF image using any 2D image processing software.						
6.	*Apply different effects on text to design poster using2D image processing software such as: • Ketchup • Rope						

	• Fire • Fruit						
7.	Apply different style effects in JPEG image using 2Dimage processing software.						
8.	*Apply convert, merge, cut and join operation on digital audio files.						
9.	Apply convert, merge, cut and join operation on video using video processing tool.						
10.	Apply shape twinning and motion in 2D animation using 2D animation software.						
11.	*Apply bouncing and rolling ball down in 2Danimation using 2D animation software.						
12.	*Develop webpage which show animation with sound effect using any professional HTML5 editor.						
13.	*Develop webpage by embedding video using any professional HTML5 editor.						
14.	Develop a webpage for embedded video streaming using professional HTML5 editor.						
15.	*Create animation for rotating ball with action script using animation software such as Blender.						
16.	*Identify and experience Augmented Reality phenomena using gadgets such as smart phone/google glass.						

Practical No. 1: a) Manipulate color related attributes of given images using any graphical processing tools on RGB, CMYK, HSV, YIQ color models.

I. Practical Significance

Color model is a mechanism used by computer's graphics system to generate required color. The system will compute color based on the primary or secondary color. With appropriate color model graphics card/ graphics mechanism ensures that the required colors are generated and same will be given to required object in multimedia application. This practical will acquaint learner with various color model. The student will able to develop and use image by using different color model.

II. Industry/Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (CO):

- Manipulate color models of image.

IV. Laboratory Learning Outcome:

- Understand different Color Model

V. Relevant Affective Domain related outcome(s)

1. Follow Safety practices.
2. Follow ethical practices.
3. Demonstrate working as a leader/ a team member.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Types of Color Models: -

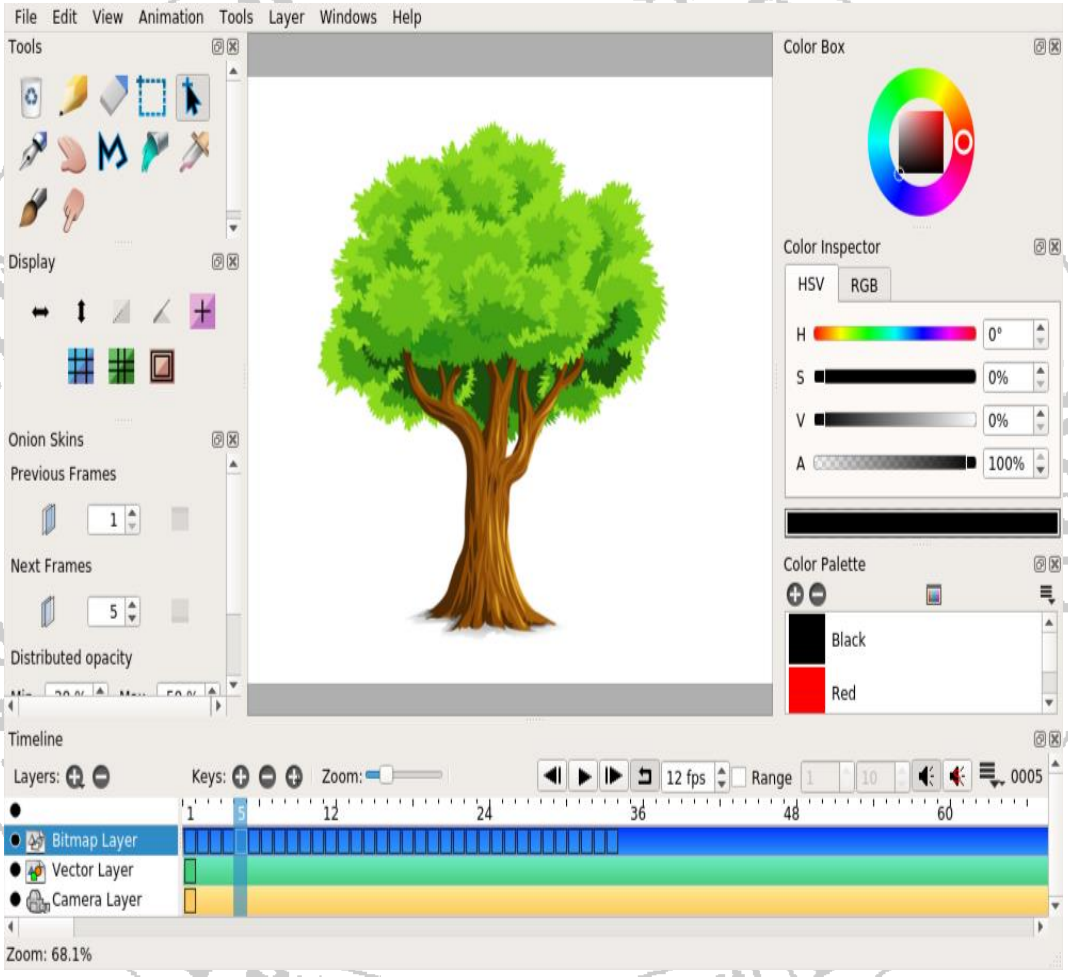
The color models play important role in generation of colors on screen/console. Color Model is a mechanism which is used by computer system to generate specific color by combining primary or secondary colors. The system can have Additive color model where Primary colors like Red, Green and Blue are used and in Subtractive Color model secondary color like Cyan, Magenta, Yellow colors used along with its key.

The Standard Color models those are available as follows:

- Black & white
- Greyscale
- RGB - Red, Green and Blue
- CMYK - Cyan, Magenta, Yellow and Black
- Lab - Luminance, 'a' & 'b' stands for chrominance.
- HSB - Hue, Saturation & Brightness. Other similar models are:
    - HSL, where L stands for Lightness,
    - HSV, where V stands for 'brightness Value' and
    - HCV, where C stands for Chroma and V for Value
- Y stands for luminance part and IQ stands for chrominance part.

VII. Procedure

1. Select appropriate Graphics processing tool like Pencil 2D.
2. Create/ Select "New Canvas" from available menu.
3. Select specified Color Model (e.g. RGB, CMYK, HSV, YIQ**)** from available menu.
4. Produce specified image and Paint it by selecting appropriate color combination.
5. Save resultant image at specific location and check availability of image at specified location.



Required Resources Sr.No	Resources specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Open Office Draw (Paint), Pencil 2D, any other such software	1

VIII.Results

IX. Practical Related Questions

Note: Below given are sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1.Visit web link given below and perform following task

Link: - http://colorizer.org/

Change Background color to *"Sky Blue"* Note down the values displayed in hex field available at right side of screen e.g. rgb(x,y,z) cmyk(a,b,c,d).

a. Modify Border color by adjusting RGB tab and CMYK tab. Note down the values displayed in hex field available at right side of screen e.g. rgb(x,y,z) cmyk(a,b,c,d)
b. Change the text from html tab specified top - left of screen. Add your name and change Text color suitable to background color.

(Space for answers)

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X.References / Suggestions for further Reading

1) https://www.mat.univie.ac.at/~kriegl/Skripten/CG/node11.html

2) https://www.geeksforgeeks.org/difference-between-rgb-cmyk-hsv-and-yiq-color-models/

XI. Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No 1b) Convert given image into different image formats, observe and report the changes in image with respect to quality and file size.

I. Practical Significance

Image is a very essential object in any multimedia system. While using an image in multimedia system, choosing appropriate image file type is essential. At times a developer needs to convert available/existing file type in required file type.

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (CO)

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning Outcome

- Convert given image into different image formats.

V. Relevant Affective domain related Outcome(s)

1. Follow Safety practices.
2. Follow ethical practices.
3. Demonstrate working as a leader/ a team member.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Image Types:

Images are very important object of any multimedia file. There are several types of images used in multimedia system. Based on the format image representation changes and that will affect compression methodology of image too. Image can be compressed using Lossy and Lossless technique.

There are some popular image formats that are commonly used as multimedia object:

- Bitmap (BMP) Format
- Graphics Interchange Format (GIF)
- Joint Photographic Experts Group (JPEG/ JPG)
- Portable Network Graphics (PNG)
- Tagged Image File Format (TIFF)

VII. Procedure:

1. Determine existing file extension for specified image object.
2. Import given image in appropriate Graphical Processing tool.
3. Check the required format of output.
4. Export image in specified image format and save it at given location.
5. Point out changes in Image quality and Image size.

VIII. Required Resources with specifications

Sr.No	Resources with specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Open Office Draw (Paint), Pencil 2D, any other such software	1.2

IX. Result (Output of the Program)

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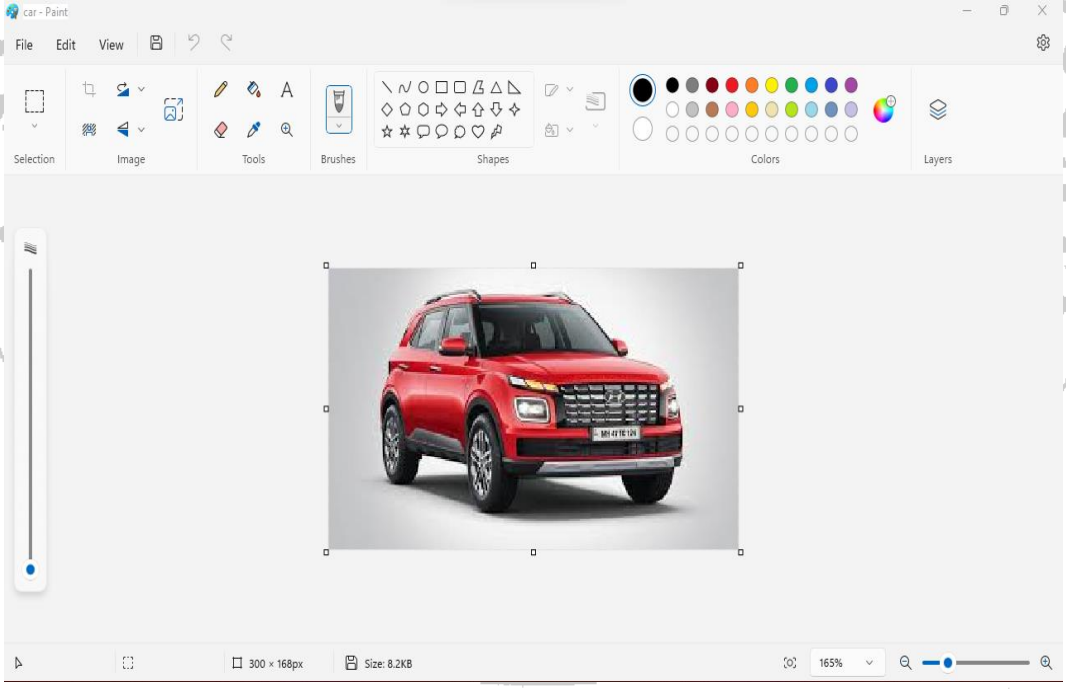

X. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VI to VII for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. Search sample .jpg image(s) available in computer and Convert it in .png format. Point out major changes in image(s) quality and file size.
2. Download image from following URL and convert it into .bmp format.

https://www.pexels.com/search/car/

3. Convert the resultant image of second activity into .gif format.

(Space for answers)

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XII References / Suggestions for further Reading

1.http://socialcompare.com/en/comparison/image-file-formats
2.https://www298.lunapic.com/editor/?action=resize

XIII Assessment Scheme

	Performance indicators	Weightage
	Process related(10 Marks)	**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
	Product related (15 Marks)	**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
	Total (25 Marks)	**100%**

Marks Obtained			**Dated signature of Teacher**
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No. 2: Apply different effects on text using 2D image processing software such as:

- **Drop,**
- **shadow Mirror,**
- **Reflection**

I. Practical Significance

Multimedia object requires equal combination of text and other multimedia objects. It is highly recommended that content developer must use appropriate texts with proper clarity. The developer must use appropriate effects to give emphasis on certain terms to draw users' attention so that message will be easily conveyed. This practical allow students to get familiar with various effects that can be applied on text. By applying these effects student will able to give emphasis to certain text.

II. Industry/Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcome(co)

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning Outcome

- To Understand various effects (Drop shadow, Mirror, Reflection) on Text using any 2D image processing software.

V. Relevant Affective Domain Related Outcome(s)

1.Follow Safety practices.
2.Follow ethical practices.
3.Demonstrate working as a leader/ a team member.
4.Participate in team problem solving activities.
5.Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

The fonts which we are using in a multimedia object are having some predefined style and face. Based on the requirement the developer can set certain effects on text to give certain style and emphasis. The font can have effects like shadow, reflection, mirror. The shadow effect will contribute shadow of a text in specified angle. Reflection effects reflect the text at given place. Mirror effect will give mirror image of text.

VII. Procedure:

1. Select appropriate Image processing tool / Web Site.
2. Select required text/word to apply effects.
3. Apply necessary effects under "shadow menu" or related menu on text and adjust required values/properties.
4. Save resultant text and verify with requirements.

VIII. Resources required with specifications

Sr.No	Resources with specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Websites to be used: http://flamingtext.com http://www.messletters.com/en/mirrored/ any other such software	2.1

IX. Result (Output of the Program)

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X. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VI to VII for all relevant practical exercise use blank pages provided or attach more pages if needed.)

a. What are various effects applied on Text?

b. Which property is needed to change to achieve following effects?

i. Drop :

ii. Mirror:

iii. Reflection :

c. Give any 4 Significance of applying effects on text.

(Space for answers)

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XI. Exercise

Attempt Ql. and teacher shall allot Q. 2/Q.3 from the following:

(Note: Use Point VIII to X and XIII to XV for all relevant programming exercise use blank pages provided or attach more pages if needed.)

1. Visit following URL and perform following tasks.

URL: http://www4.flamingtext.com

Task:

a. Enter your name and select any theme / logo design.
b. Edit logo and Select "Drop" option in Shadow Tab.
c. Set X Offset to 15.
d. Set Y Offset to 12
e. Set opacity to 50.
f. Save Logo.

2. Repeat above step till **1.** a

a. In Edit logo, Select "Reflection" option in shadow tab.
b. Customize other properties.
c. Save Logo.

3. Visit following URL and perform following tasks.

URL: http://www.messletters.com/en/mirrored/

Task:

a. Enter text as "This is Mirrored text".
b. Copy and save Flip text, Mirror Text, Mirror Flip and Reverse text from GUI.

XIII. References / Suggestions for further Reading

1. https://flamingtext.com/
2. http://www.messletters.com/en/mirrored/

XIV. Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (25 Marks)		**70%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No. 3: Apply different effects on GIF image using 2D image processing Software such as:

- **Image mirroring**
- **Rainy season effect**

I. Practical Significance

While adding an image in multimedia object, most of the images are still and captured as they exist. Often it is essential to provide an image with some extra effect to make it live. Mirroring an image is more than just editing a photo, but adding a creative reflection effect. The rainy season effect gives that cutting edge to the still image. This result into making an image as live image instead of still image by adding recurrent drops of waters giving illusion of having rain drops. In this practical the students will be able to explore more about the rainy season effect on image and image mirroring and apply same on specific image.

II. Industry/ Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcome

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning Outcome

- Implement different effects on image.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Participate in team problem solving activities.
4. Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Effects on Images

The rainy season effects gives impression of having running rain drops on image. By applying rainy season effect the image gets converted into gif format. This effect adds an additional layer on top of the image. Effect of having rainy season let this additional layer to draw continuous lines / pixels of specified intensity. Once done, graphics processing tool places this layer on top of the existing image. The tool then merges all layers and generates the gif image. Add layer has continuous loop to depict the effect of water drop at specified intensity. The mirroring of an image is a simple operation that switches the position of pixels in an image on the left/right or top/bottom part, also called "flop" and "flip", respectively. Flopping reverses the X-axis, whereas flipping reverses consequently the Y-axis.

VII. Procedure

1. Select appropriate Image processing tool **/** Web base tool.

2. Select required image / Section of image to apply effects.
3. Apply required effects for image by adjusting required values.
4. Save resultant image and verify with requirements.

VIII. Resources required

Sr. No	Resources with specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Websites to be used: https://photofunia.com, http://www.online-image-editor.com/, https://www.resizepixel.com/	3

IX. Result (Output of the Program)

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X. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VI to VII for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. Visit following URL and perform following tasks.
   URL: https://photofunia.com/categories/all_effects/raining
   Task:
   a. Import any image.
   b. Choose any frame.
   c. Apply "Raining Effect"
   d. Download Regular size of image.
   e. Save Logo.
   f. Note down the changes in image w.r.t size, type.

2. Visit following URL and perform following tasks.
   URL: https://photofunia.com/categories/all_effects/raining
   Task:
   a. Import any image available on your computer system.
   b. Select "Water Droplet Effect" under "Animation" Menu.
   c. Download / Save image.
   d. Note down the changes in image.

3. Visit following URL and perform following tasks.
   URL: http://www.online-image-editor.com/
   Task:
   a. Select/ Import Image on which effects are to be done.
   b. Select "Rain Effect" from available tab.
   c. Adjust Intensity to "Sprinkle" , Length to "Long", Visibility to "Strong" and width to "Thick".
   d. Adjust "Rotate Overlay" as per your requirement.
   e. Apply aforementioned effects and save image.
   f. Note down changes.

4. Visit following URL and perform following tasks.
   URL:https://www.resizepixel.com/
   Task:
   a. Select Import Image on which effects are to be done.
   b. Apply "Mirror Effect" and save image.
   c. Note down changes.

(Space for answers)

XI. References / Suggestions for further Reading

1.http://www.online-image-editor.com/
2.https://photofunia.com/categories/all_effects/raining

XII. Assessment Scheme

Performance indicators		Weightage
Process related(l5 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (20 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No. 4: Design advertising Banner Using graphical Processing Tools

I. Practical Significance

Multimedia application like Website(s), blog(s) or even a mobile application uses a banner. Having a banner is almost indispensable aspect to draw attention of users. Having banner in a still image is a good idea but one can attract maximum number of users by having banner(s) which possess moving content. This leads to increase interest of user and ensure users are committed with our application. This practical leads student to create their own banner and save in gif format.

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (cos)

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning Outcome:

- Create advertising banner.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self

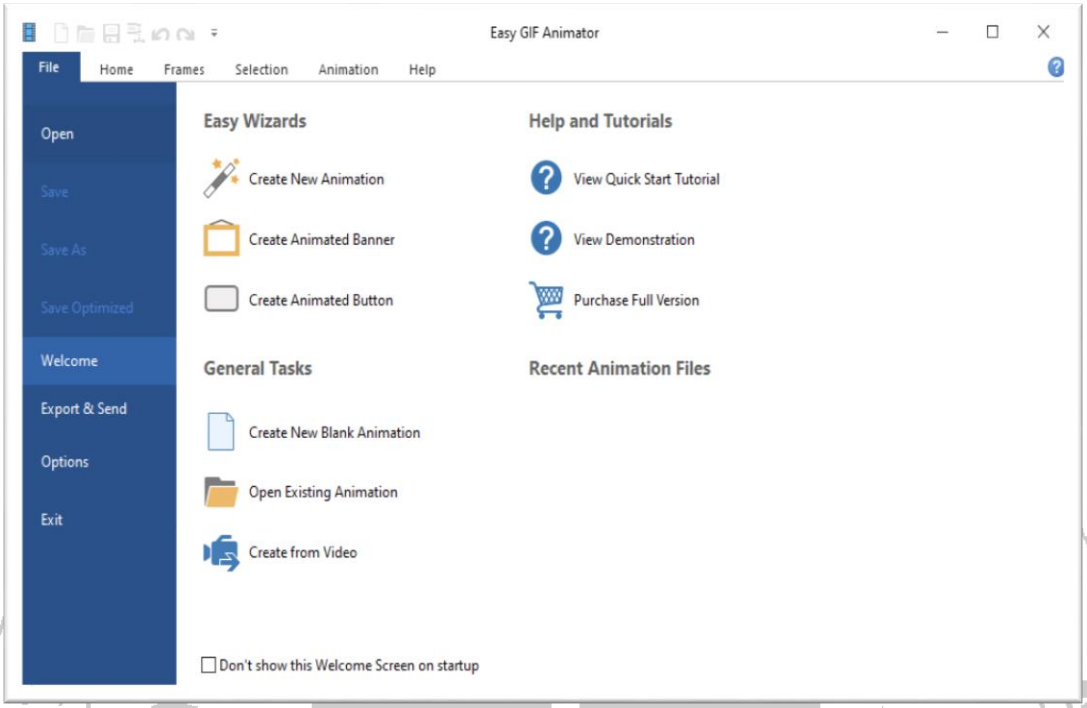
VI. Relevant Theoretical Background

A web banner or banner ad is a form of advertising on the World Wide Web delivered by an ad server. This form of online advertising entails embedding an advertisement into a web page. It is intended to attract traffic to a website by linking to the website of the advertiser. In many cases, banners are delivered by a central ad server. Web banners function the same way as traditional advertisements are intended to function: notifying consumers of the product or service and presenting reasons why the consumer should choose the product in question.

VII. Procedure:

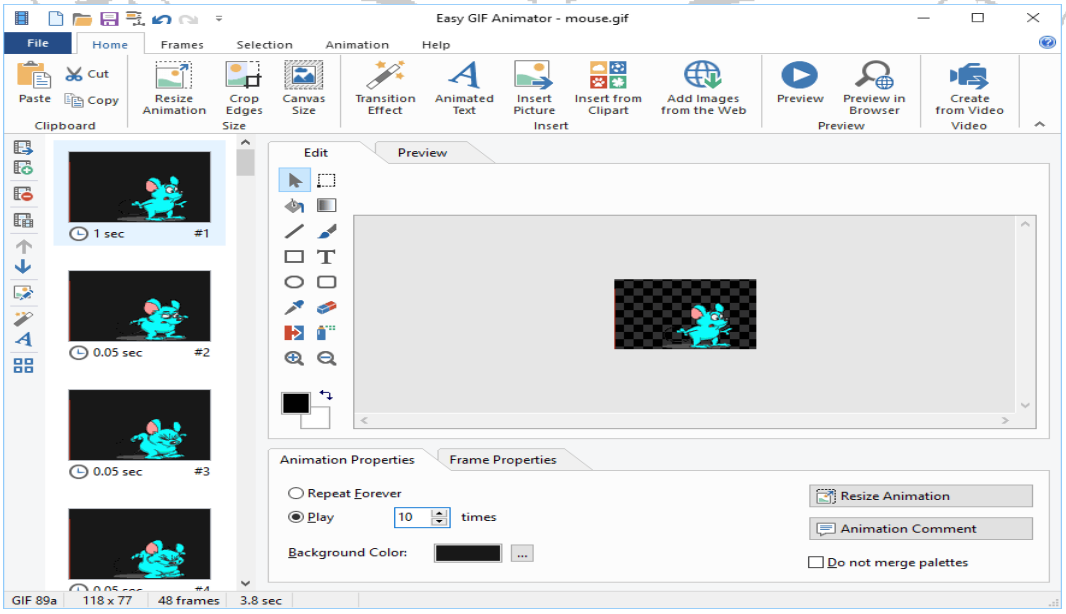
1. Select appropriate Graphics processing tool.
2. Create / Select "Banner Wizard" from available menu.
3. Choose Banner Size and style.
4. Choose Banner Background with respect to image or color.
5. Add required text(s), select appropriate appearing and disappearing effect.
6. Save banner and export at specific location.

7. Open resultant banner with any web browser or as an image.



VIII. Resources required

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard. Software required are Gif animator/ QGifer, any other software	4.1



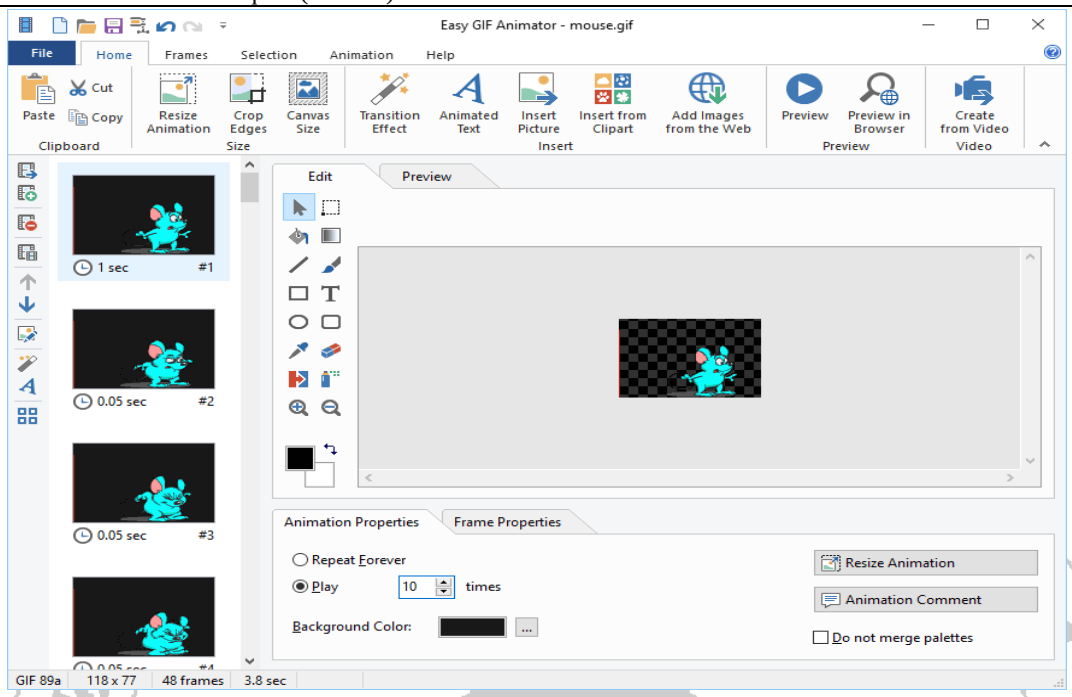
IX. Results

X. Practical Related Questions

Attempt Ql. and teacher shall allot Q. 2/Q.3 from the following:

(Note: Use Point VI to VII for all relevant programming exercise use blank pages provided or attach more pages if needed.)

1. Create a banner for upcoming technical event in your institute. Institute name and logo must be common text in all frames.
2. Create a banner to show your name in first frame, middle name in second frame and last name in third frame. The last frame displays your full name.
3. Create a banner to show "Hello! AMT "text at same position and having 10 different Shapes and effects.
4. Create a banner having your favorite cartoon character's photo at background. Display any five statements about it.



(Space for answers)

XI. References / Suggestions for further Reading

1. https://snappa.com/create/banners
2. https://banner.fotor.com/

XII. Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	10%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	5%
5.	Use of Effects and Transitions	15%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No. 5: Design wallpaper showing water drop effect on GIFimage using any 2D image processing software.

I. Practical Significance

2D animation / graphical processing tools support various effects on existing image / object. The developer can make use of any such effect to make their content more attractive and close to the theme of 2D Multimedia object. Waterdrop effect is one such effect which is applied on images. The waterdrop effect ensures that the resultant file is repainted if some waterdrops are exists on the frame. The waterdrop layer is achieved by adding a transparent image of having waterdrops such image will be added at the top layer of image on which waterdrop layer is to be apply. In this practical student will learn to use web based tools to apply waterdrop effects on image and use resultant file in their animations.

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (CO)

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning outcome:

- Create wallpaper showing water drop effect onimage.

V. Relevant Affective Domain related outcome(s)

1.Follow Safety practices.
2.Follow ethical practices.
3.Demonstrate working as a leader/ a team member.
4.Participate in team problem solving activities.
5.Prioritizes time effectively to meet the needs of the team and self

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VI. Relevant Theoretical Background

Waterdrop effect is one which gives an illusion of having waterdrops on the face of image. This effect is very much popular in social media. To create such effect one shall need to able to work on layers. To begin with a multimedia developer needs to open an image in background layer. Then import a transparent image on the tool. By adding this transparent image on the foreground layer of the object we can adjust the alignment and portion where effect needs to be applied. Once all necessary properties are modified the content developer can save the object in necessary format. This file is then can be use as per the requirement of Multimedia Content Developer.

VII. Procedure

1. Select appropriate Image processing tool / Web base tool.
2. Select required image to apply effects.
3. Select "Appropriate Template" from available templates and adjust required values/properties.
4. Generate resultant image for water drop effect.
5. Save Image at specified location

VIII. Required Resources with specifications

Sr.No	Resources specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). software required are https://www298.lunapic.com/editor/?action=rain, http:/funny.pho.to/rain-drops-effect/	5.1

IX. Result (Output of the Program)

X. Practical Related Questions

(Note: Use Point VI to VII for all relevant programming exercise use blank pages provided or attach more pages if needed.)

1. Visit following URL and perform following tasks.
   URL: http://funny.pho.to/rain-drops-effect/
   Task:
   a. Choose required Template
   b. Add any image.
   c. Add Clip art if necessary.
   d. Change background as per requirement.
   e. Save image.

2. Visit following URL and perform following tasks.
   URL: http://watereffect.net/
   Task:
   a. Import any image.
   b. Add waterdrop effect on image.
   c. Save Image on Desktop.
   d. Compare result with result of activity no **1.**

3. Visit following URL and perform following tasks
   URL:https://www298.lunapic.com/editor/?action=droplets.
   Task:
   a. Import any image of your choice.
   b. Choose "Water Droplet Effect" option from "Animation" menu.
   c. Save Image on C: Drive.
   d. Chose "Reflecting Water Effect" Option from "Animation" Menu

e. Save Image at same location.

f. Comment on the difference of output of both images.

(Space for answers)

XV References / Suggestions for further Reading

1.http://funny.pho.to/rain-drops-effect/

XVI. Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No 6: Apply different effects on text to design poster using 2D image processing software sch as:

- **Ketchup**
- **Rope**
- **Fire**
- **Fruit**

I. Practical Significance

Posters are becoming an automated choice for most of the Multimedia Content Developer. Due to their properties like size and ability to contain various object at one position Multimedia Content Developer are inclining towards using poster in their Multimedia Object. The Posters are varied in dimension and can contain text as well as images on same platform. This is another effort towards ensuring users attention towards your content. One can make a poster as per their requirement and can use image as well as text in it to convey message is both textual format and graphical format as well. This practical will let student to develop own poster and add certain textual effects like Ketchup, Rope, Fire, Fruit

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS):

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning Outcome:

- Design poster byusing different text effect.

V. Relevant Affective Domain related outcome(s)

1.Follow Safety practices.
2.Follow ethical practices.
3.Demonstrate working as a leader/ a team member.
4.Participate in team problem solving activities.
5.Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Posters are nowadays becoming a trend for most of the Multimedia object as well as Multimedia website. Poster allows user to integrate various component to depict it as a single unit. The visitor can easily get attracted towards Poster. The poster with good textual effect appeals a lot to the user. The Content developer can add multiple effects on text as per the need poster. There are few effects like ketchup, fire, rope and fruit can be used on text so that structure of text can be maintain to match Multimedia object theme. The "ketchup effect" on an image is a term used to describe the delayed appearance or enhancement of certain details or imperfections within the image. It's named after the way ketchup sometimes sticks to the bottom of a bottle and then suddenly pours out all at once, rather than smoothly flowing out as expected. The "rope effect" on an image refers to a visual distortion or artifact that

resembles the appearance of twisted or tangled ropes. The "fire effect" on an image is a visual representation of flames or fire-like elements overlaid onto the image to create a particular aesthetic or convey a specific mood.The "fruit effect" on an image is various visual effects or techniques involving fruits in images, depending on the context.

VII. Procedure

1. Select appropriate Image processing tool / Web base tool.
2. Select required Dimension of poster to apply effects.
3. Select "Appropriate Template" from available templates and adjust required values/properties.
4. Import required image. (If necessary)
5. Add necessary effects
6. Save Poster at specified location

VIII. Required Resources with specifications

Sr.No	Resources specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Software required http://flamingtext.com/Fire-Logos, Blender software	5.1

IX. Result (Output of the Program)

X. Practical Related Questions

(Note: Use Point VI to VII for all relevant programming exercise use blank pages provided or attach more pages if needed.)

1. Visit following URL https://www.blender.org/ and perform following.

Download and install blender. Follow basic steps to make ketchup effect in blender.

1) Setup Scene
2) Add a Ketchup Bottle Model
3) Set Up Fluid Simulation
4) Adjust Fluid Domain
5) Bake and Simulate
6) Render

2. Visit following URL https://www.blender.org/ and perform following.

Download and install blender. Follow basic step to make rope effect in blender.

1) Open Blender
2) Delete Default Objects
3) Add a Curve
4) Edit the Curve
5) Convert to Mesh
6) Add Depth
7) Add Texture
8) Final Touches
9) Rendering

3. Visit following URL and perform following tasks. URL: http://flamingtext.com/Fire-Logos. Follow basic step to produce Fire

Effect

1) Add your name
2) Select Logo as per requirement.
3) Save Logo at specified location.

4. Visit following URL https://www.blender.org/ and perform following.

Download and install blender. Follow basic step to make rope effect in blender.

1) Setup Scene
2) Model the Fruit
3) Texture the Fruit
4) Add Details:
5) Arrange the Fruits:
6) Final Touches:
7) Rendering:

(Space for answers)

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XV. References/Suggestions for further Reading

1.http://flamingtext.corn/Fire-Logos
2. https://www.blender.org/

XVII. Assessment Scheme

Performance indicators		**Weightage**
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			**Dated signature of Teacher**
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No 7:

Apply different style effects in JPEG image using 2D image processing software

I. Practical Significance

As we have seen in earlier practical that image are essential to draw attention of customer to the content of Multimedia. It is almost inevitable to overlook stylish images. In most of the case image are not readily available to use as they are. We can add certain effects to make existing image(s) stylish enough by adding certain text, frames and background color. Most of the graphics processing tools provide readymade templates which can be useful to make the existing image not only stylish but professional as well. This experiment allow learner to explore various graphics processing tools to generate stylish image.

II. Industry / Employer Expected Outcome:

- Construct different types of Multimedia.

III. course level learning outcomes (COs):

- Perform edit operation on text and images using graphics processing tools.

IV. Laboratory Learning Outcome:

- Implement given style on image

V. Relevant Affective Domain related outcome(s)

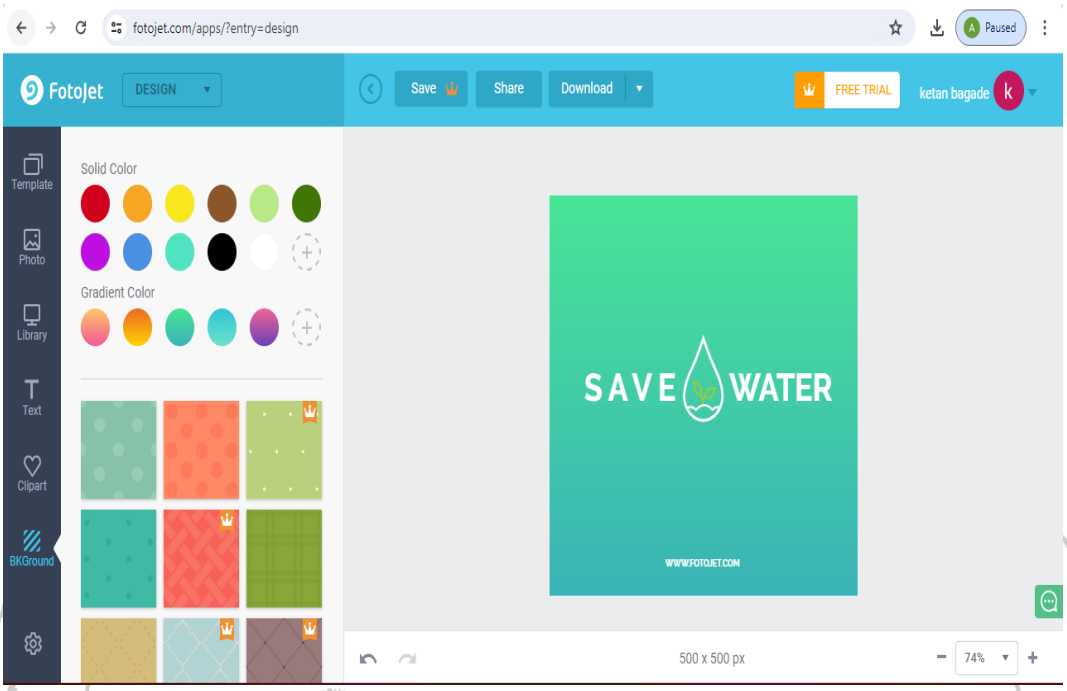
1.Follow Safety practices.
2.Follow ethical practices.
3.Demonstrate working as a leader/ a team member.
4.Participate in team problem solving activities.
5.Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Stylish Images are heart of any multimedia object. Often Multimedia writer gives necessary emphasis on making their content attractive and stylish enough. This will help them to fascinate user towards your content. There are many graphical processing tools available which let Multimedia Content Developer to develop stylish images. These images can be saved as per the requirement of user. Some tools also provide facility of making new image from scratch or by adding existing image. The content developer can choose from available templates and ensure that appropriate image can be generated.

VII. Procedure:

1) Select appropriate Graphical Image processing tool **/** Web base tool.
2) Select required image / Section of image to apply effects.
3) Select "Appropriate Template" from available templates and adjust required values/properties. Import required image. (If necessary)
4) Add necessary text, apply formatting and styles on text.
5) Add necessary Clip arts /shapes. (If require)
6) Select background as per Theme, Save Image at specified location



VIII. Required Resources

Sr.No	Resources specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Software required a) https://www.fotojet.com/apps/?entry=design b) https://www.fotor.com/app.html#/design Any other such software	5.1

IX. Result (Output of the Program)

X. Practical Related Questions

(Note: Use Point VI to VII for all relevant programming exercise use blank pages provided or attach more pages if needed.)

1. Visit following URL and perform following tasks. URL: https://www.fotojet.com/apps/?entry=design

Task:

a. Choose required Template
b. Add any image.
c. Write you name by adding text box and format it as per template.
d. Add Clip art if necessary.
e. Change background as per requirement.
f. Save image.

2. Visit following URL and perform following tasks. URL: https://www.fotor.com/app.html#/design

Task:

a. Select Dimension as per your object.
b. Select any template from available templates under "Template" Menu.
c. Add necessary stickers (If require).
d. Add necessary notes / text.
e. Change background as per your requirements
f. Save Image on Desktop.

3. Open MS- Paint.

a. Create new canvas.
b. Import any image of your choice.
c. Add basic shapes available.
d. Give appropriate background color.
e. Write your name in stylish text.
f. Save Image on C: Drive.

(Space for answers)

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XV. References/Suggestions for further Reading

1.https://www.fotojet.com/apps/?entry=design
2.https://www.fotor.com/app.html#/design

XVIII. Assessment

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No. 8: Apply convert, merge, cut, and join operation on digital audio files.

I. Practical Significance

Creating audio clips serves various practical purposes across industries. They are used in entertainment for music, sound effects, and voiceovers, in advertising for catchy jingles and brand messages, in education for podcasts and language learning, and in digital media for engaging content. Additionally, audio clips aid in business communication, accessibility, and music production, enhancing communication, multimedia content, and user experiences.

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS)

- Perform basic audio editing operations.

IV. Laboratory Learning Outcome

- Implement audio editing options.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Multimedia application is one which uses combination of any audio, video contents to generate a resultant file. The Multimedia application is useful to convey the message in broad manner. Multimedia authoring is the process which is used to select, design and develop the contents that will be added on multimedia objects. The content developer first needs to finalize the content and then follow the methodology specified in steps multimedia authoring to write generate contents.

VII. Resources required with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard,	8.1

VIII. Procedure

Here's how you can apply convert, merge, cut, and join operations in audio:

Convert:

1. Use audio conversion software or online converters to convert audio files between different formats such as MP3, WAV, FLAC, AAC, etc.
2. Select the desired output format and quality settings, then upload the audio file you want to convert.
3. Once the conversion is complete, download the converted audio file to your computer.

Merge:

1. Use audio editing software such as Audacity or Adobe Audition.
2. Import the audio files you want to merge into the software.
3. Arrange the audio files in the desired order on the timeline.
4. Export the merged audio file in the desired format.

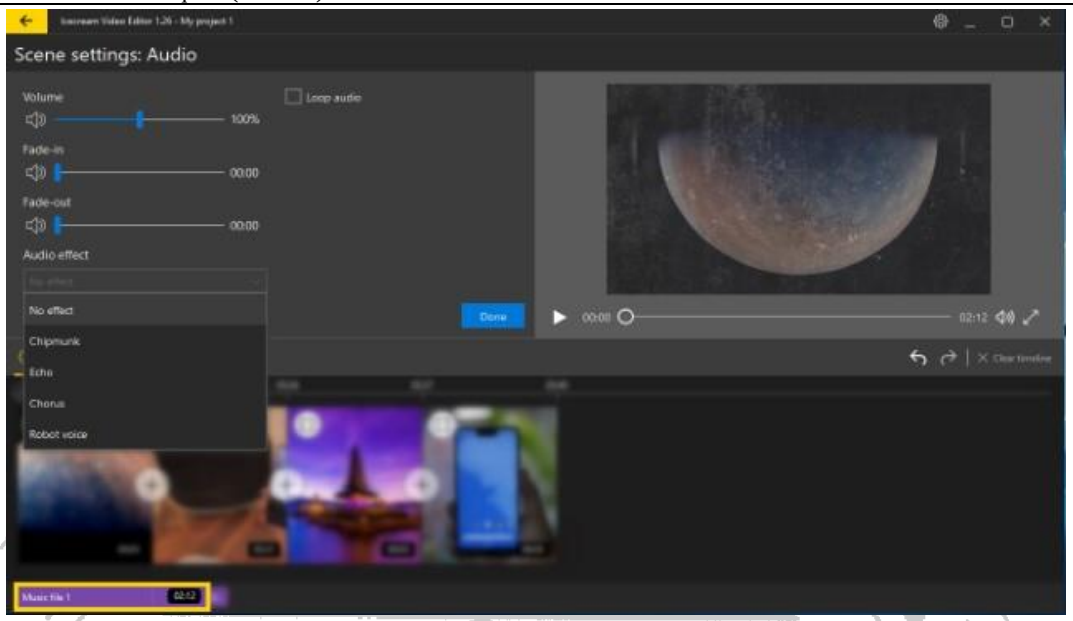
Cut:

1. Open an audio editing software like Audacity.
2. Import the audio file you want to cut.
3. Use the selection tool to highlight the portion of the audio you want to keep.
4. Delete or cut the selected portion, leaving only the desired audio segment.
5. Save the changes or export the trimmed audio file.

Join:

1. Use an audio editing software such as Audacity.
2. Import the audio files you want to join into the software.
3. Arrange the audio files in the desired order on the timeline.
4. Export the joined audio file in the desired format.

IX Result (Output of the Program)



X Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VIII for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. Visit web link given below and perform following task

   Link: - http://moviemakeronline.com/

   Task: -

   a. Add 10 Images of your choice
   b. Import audio suitable to images.
   c. Save File with name as "My First Video".
   d. Make Video and Download it.
   e. Play video and check for necessary integration achieved with respect to image and audio.

(Space for answers)

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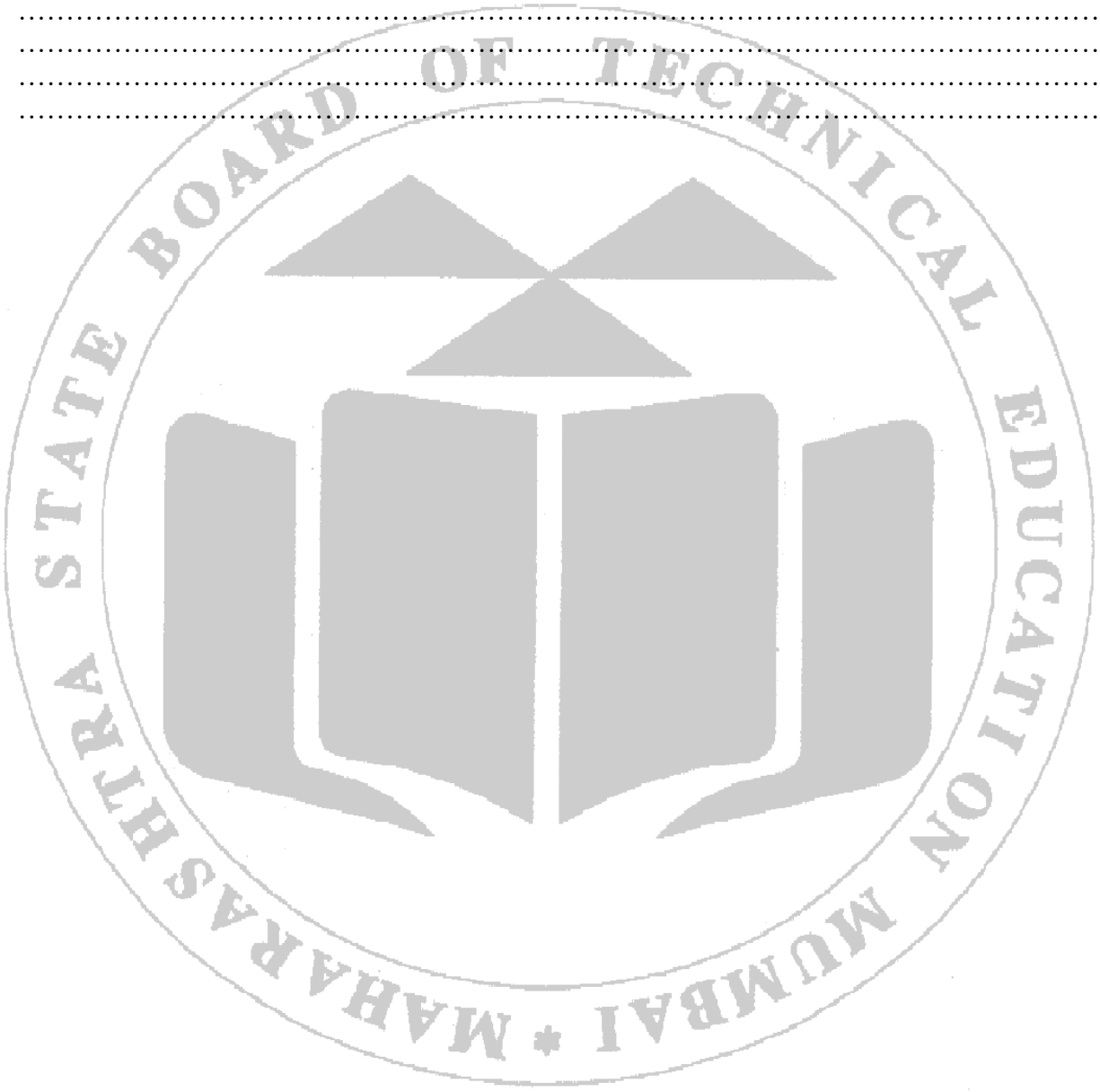

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION MUMBAI

XI References / Suggestions for further Reading

1. http://moviemakeronline.com
2. https://www.kizoa.com/

XII Assessment Scheme

Performance indicators		Weightage
Process related(l0 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 9: Apply convert, merge, cut, and join operation on digital video using video processing tool.

I. Practical Significance

The practical use of converting, merging, cutting, and joining videos is widespread across various fields. Content creators repurpose and format videos for different platforms, marketers tailor content for specific campaigns, educators create instructional material, event videographers produce highlights, and video producers ensure seamless storytelling. These operations streamline workflows, enhance content quality, and optimize videos for audience engagement, demonstrating their versatile applications in modern media production.

II. Industry / Employer Expected Outcome:

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS):

- Perform basic video editing operations.

IV. Laboratory Learning Outcome:

- Implement video editing options.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background Multimedia Based Applications: -

Multimedia application is one which uses combination of any audio, video contents to generate a resultant file. The Multimedia application is useful to convey the message in broad manner. Multimedia authoring is the process which is used to select, design and develop the contents that will be added on multimedia objects. The content developer first needs to finalize the content and then follow the methodology specified in steps multimedia authoring to write generate contents.

VII. Required Resources with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse	9.1

VIII. Procedure

1. Select appropriate Graphics processing tool.
2. Create/ Select "New Project" from available menu.
3. Choose required images and videos and Import it in tool.

Here's how you can apply convert, merge, cut, and join operations in video:

a) Convert:

- Use video conversion software or online converters to convert video files between different formats such as MP4, AVI, MOV, MKV, etc.
- Select the desired output format and quality settings, then upload the video file you want to convert.
- Once the conversion is complete, download the converted video file to your computer.

b) **Merge:**

- Use video editing software such as Adobe Premiere Pro, Final Cut Pro, or iMovie.
- Import the video files you want to merge into the software.
- Arrange the video files in the desired order on the timeline.
- Export the merged video file in the desired format.

c) **Cut:**

- Open a video editing software like Adobe Premiere Pro.
- Import the video file you want to cut.
- Use the selection tool to highlight the portion of the video you want to keep.
- Delete or cut the selected portion, leaving only the desired video segment.
- Save the changes or export the trimmed video file.

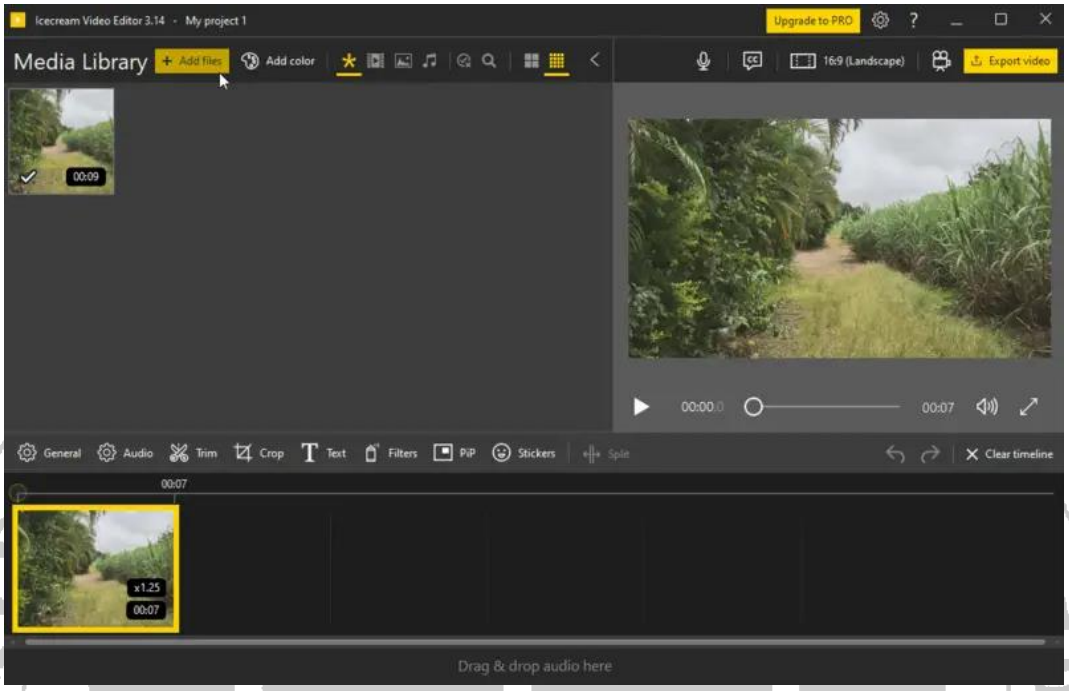
d) **Join**:

- Use video editing software such as Adobe Premiere Pro.
- Import the video files you want to join into the software.
- Arrange the video files in the desired order on the timeline.
- Export the joined video file in the desired format.

IX Result(s)

X Practical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design



more such questions so as to ensure the achievement of identified CO.

1. Visit web link given below and perform following task

   Link: - http://moviemakeronline.com/

   Task: **-**

   a. Add 10 Images of your choice
   b. Import audio suitable to images.
   c. Save File with name as "My First Video".
   d. Make Video and Download it.
   e. Play video and check for necessary integration achieved with respect to image and audio.

(Space for answer)

XI References / Suggestions for further Reading

2. http://moviemakeronline.com
3. https://www.kizoa.com/

XII Assessment Scheme

Performance indicators		Weightage
Process related(l0 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 10: Apply shape twinning and motion in 2D animation using 2D animation software.

I. Practical Significance

Applying shape twinning and motion in 2D animation using animation software holds significant practical importance in various industries and applications.In animation movies, TV shows, and web series, shape twinning and motion help bring characters and scenes to life. They allow animators to create dynamic movements, expressions, and actions that engage and entertain audiences.In educational animations and e-learning modules, shape twinning and motion can be used to illustrate complex concepts and processes in a visually engaging manner.

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS):

- Create simple 2D Animation.

IV. Laboratory Learning Outcome:

- Apply shape twinning and motion effect in 2D animation.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self.

VI. Minimum Theoretical Background

Motion tweening is a technique used to create smooth motion animations between two keyframes. It's a method of animating objects or symbols across the timeline by defining the starting and ending positions, sizes, rotations, and other properties, and allowing the software to automatically generate the in-between frames to create a seamless motion. Shape tweens, on the other hand, perform distortions on non-symbol shapes/vector graphics.

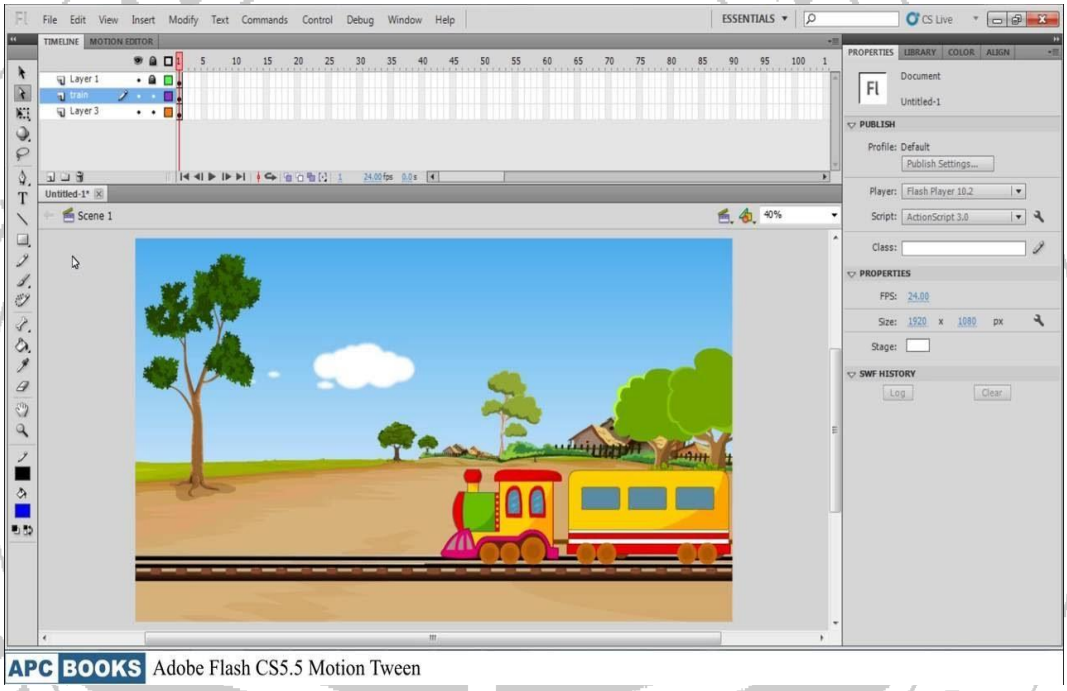
VII. Required Resources with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and Adobe Flash	10.1

VIII. Procedure

1. Open File.
2. Define background on specific layer.
3. Import an Object for motion and Shape tweening.
4. Add require number of key frame.
5. Make necessary changes at timeline.
6. Convert required object to necessary Symbols.
7. Create Motion Tween and Shape tween as per requirement.
8. Play animation. Check resultant animation and verify with expected outcome.

IX. Result(s)

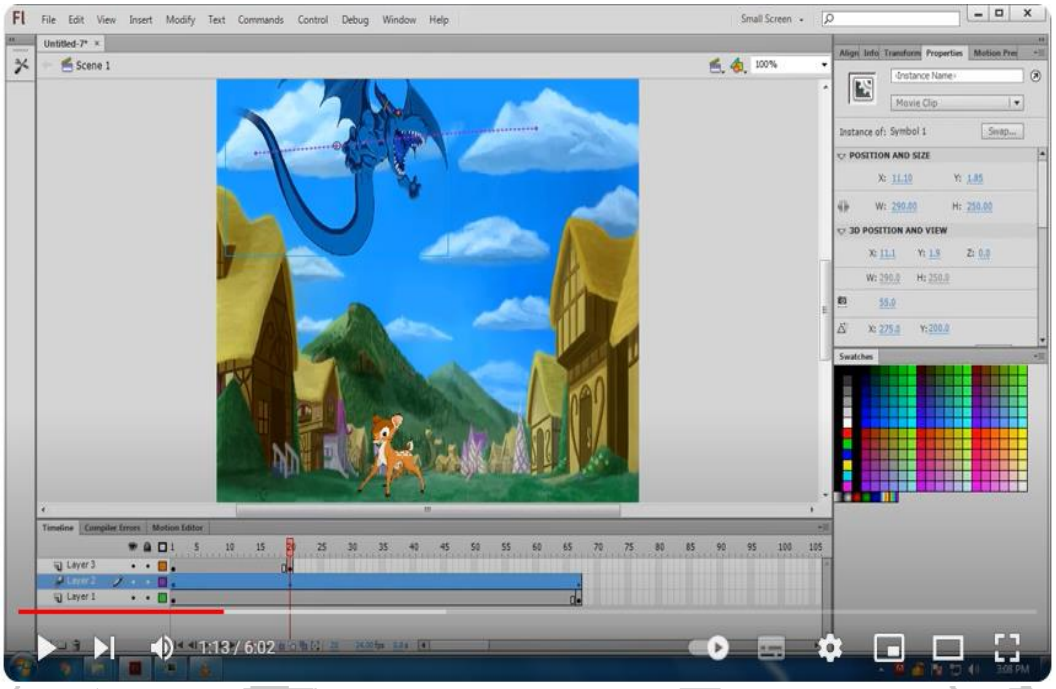


X. Practical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VIII to for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. Differentiate between Motion tween and Shape Tween. (Any 2 Points)
2. List different types of symbols used in animation. List their uses.
3. Describe Classic Tween. How it is different from Motion tween and Shape tween.
   Refer the image and the video link provided https://youtu.be/OvFpVbIMFLE?si=FchE6P8ZFgAmg2Rt and write down the steps used to create the animation.



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XI. References/ Suggestions for further Reading

1. https://helpx.adobe.com/animate/using/about-motion-tween-animations.html
2. https://helpx.adobe.com/animate/using/shape-tweening.html

XII. Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 11: Apply bouncing and rolling ball down in 2D Animation using 2D animation software.

I. Practical Significance

Animating a bouncing and rolling ball down a surface is a fundamental exercise in animation, offering practical significance across various aspects of the industry. It serves as a hands-on application of physics principles, aiding animators in mastering essential concepts like gravity, momentum, and friction. Furthermore, it contributes to creating realistic visual effects and simulations in animation, film, and gaming. Storyboard artists and directors use it for previsualization, while problem-solving and creativity come into play in determining the ball's trajectory and behavior. As a staple in portfolios and demo reels, a well-executed bouncing ball animation showcases an animator's proficiency and attention to detail, making it a cornerstone in animation training and practice.

II. Industry / Employer Expected Outcome

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS)

- Create simple 2D Animation.

IV. Laboratory Learning Outcome:

- Apply bouncing and rolling ball effect in 2D animation.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self.

VI. Minimum Theoretical Background Frames and Timeline: -

Frames and the timeline in Adobe Flash (now Adobe Animate) are essential components of animation creation. Frames represent individual moments in time, where visual elements are placed to create motion. The timeline organizes these frames horizontally, depicting the sequence of the animation over time. Layers within the timeline allow for the separation of different elements, enabling easier management of complex animations. Animators utilize frames and the timeline to control timing, apply animation techniques, and create dynamic visuals, making them fundamental tools in the animation process.

VII. Required Resources

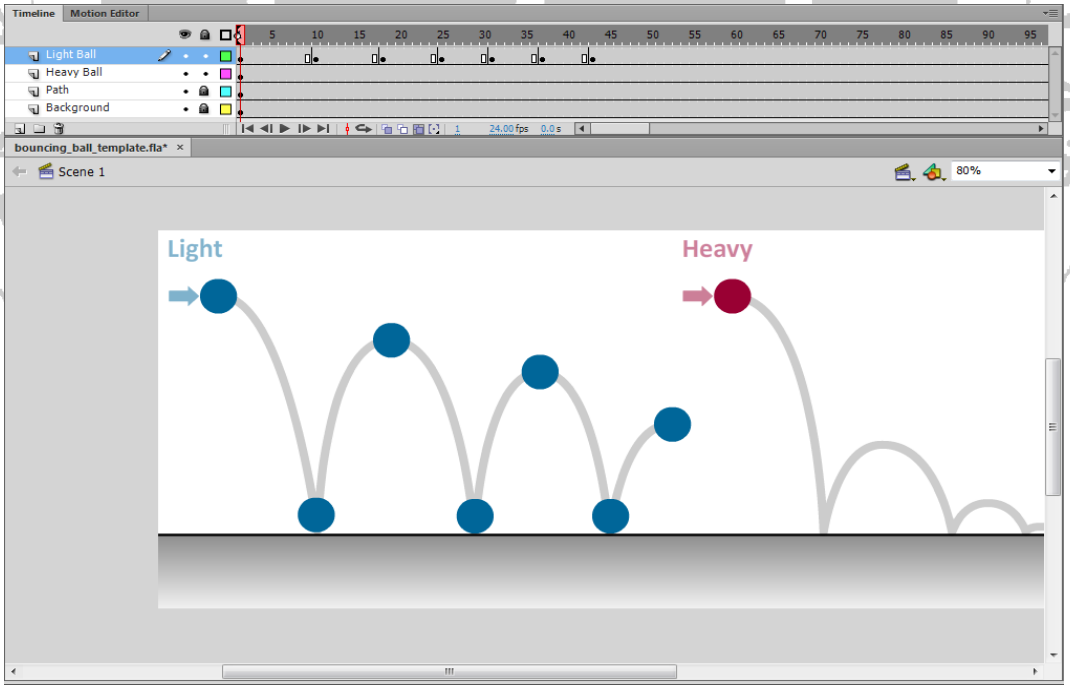
Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like;	11.1

	motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and Adobe Flash (now Adobe Animate)	

VIII. Procedure

Here's a concise step-by-step guide to working with frames and the timeline in Adobe Flash:

1. **Open Adobe Flash:** Launch the Adobe Flash software.
2. **Create or Open File:** Start a new project or open an existing one.
3. **Access Timeline:** Locate the timeline at the bottom of the workspace.
4. **Understanding Layers:** Layers organize elements. Add, delete, or rearrange layers.
5. **Add Frames:** Move the playhead, right-click, and choose "Insert Frame" or "Insert Keyframe".
6. **Navigate Timeline:** Use the playhead to move through frames and zoom controls for precision.
7. **Animate with Frames**: Place objects on frames and adjust properties for motion.
8. **Apply Tweens:** Use classic or motion tweening for smooth transitions between keyframes.
9. **Preview Animation:** Play the animation to review. Adjust timing and easing as needed.
10. **Export:** Export the animation to the desired format from the File menu.



IX. Result(s)

X. Practical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VIII to X for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. What are timeline? Describe onion frame.
2. What are different types of Layers? How to add new layers?
3. What is looping? How to use looping in animation?

(Space for answers)

XI. References / Suggestions for further Reading

1. https://courses.cs.washington.edu/courses/cse459/13au/assignments/assignment_1/2d_ball_animation_tutorial/
2. https://www.youtube.com/watch?v=EvEa5RtMQc4

XII. Assessment Scheme

Performance indicators		Weightage
Process related(l0 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 12: Develop webpage which show animation with sound effect using any professional HTML5 editor.

I. Practical Significance

Embedding animations with audio into web pages holds practical significance as it enhances user engagement and interaction. It allows website creators to convey information, tell stories, or showcase products/services more dynamically and effectively. This multimedia approach is particularly useful for entertainment, advertising, educational content, and interactive experiences on websites, contributing to a richer and more immersive online environment. In this practical Students will learn to make a webpage with animation and audio.

II. Industry / Employer Expected Outcome:

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS):

- Perform basic audio editing operations.

IV. LABORATORY LEARNING OUTCOME:

- Embed animation with audio into web page.

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self.

VI. Minimum Theoretical Background

Web pages can contain videos, animation as a Multimedia object. Most of the interactive websites contains a web page with animation to educate its visitors. Such contains are very much useful to maximize number of customers on a website. Adding a multimedia content on web page one can use specific tags. The videos can be expensive as it can occupy big space on screen as well as takes lots of bandwidth too.

VII. Required Resources with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and open source operating System. (RedHat, Ubuntu etc.).	12.1

VIII. Procedure

1. Determine Web page which will have Video.

2. Determine size of video and other properties of videos.
3. Check the required format of output.
4. Embed video in specified video format and save web page at given location.
5. Open file in web browser.

IX. Result(s)

```
<figure>
  <figcaption>Listen to the T-Rex:</figcaption>
  <audio controls src="/media/cc0-audio/t-rex-roar.mp3"></audio>
  <a href="/media/cc0-audio/t-rex-roar.mp3">
Download audio </a>
</figure>
```

X. Practical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VIII for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. What are different format can be added in Web page.
2. Which tag is used to add video on web page? Describe its options.
3. Give the significance of <PARAM> tag and <OBJECT> tag.

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XI. References / Suggestions for further Reading

1.https://www.w3schools.com/html/html_images.asp

2.https://www.onlinehtmleditor.net/

XII. Assessment Scheme

Performance indicators		Weightage
Process related(l0 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 13: Develop webpage by embedding video using any professional HTML5 editor.

I Practical Significance

Embedding video into web pages is highly significant as it enhances user engagement and enriches content delivery. It allows websites to convey information, demonstrate products/services, or tell stories more effectively by leveraging the power of moving images and sound. Video content can captivate audiences, evoke emotions, and convey complex ideas in a concise and engaging manner. Whether used for entertainment, education, marketing, or communication purposes, embedded videos enhance the overall user experience, increase dwell time on websites, and can drive higher conversion rates. Additionally, embedding videos from popular platforms like YouTube or Vimeo reduces bandwidth usage and ensures seamless playback across various devices and browsers, making it a versatile and essential tool for modern web design.

II. Industry / Employer Expected Outcome:

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (cos):

- Perform basic video editing operations.
- Design Web Pages with Multimedia components.

IV. LABORATORY LEARNING OUTCOME:

- Embed MP4 video into web page.

V. Relevant Affective domain related Outcome(s)

a) Follow ethical practices.
b) Demonstrate working as a leader/ a team member.
c) Practice good housekeeping.
d) Participate in team problem solving activities.
e) Prioritizes time effectively to meet the needs of the team and self

VI. Minimum Theoretical Background

1. **EMBED**

There is currently an EMBED element in the draft HTML5 specification which will be used for any media not supported by the browser but OBJECT allows for the page author to control what happens if the plug-in is not available.

2. **OBJECT and APPLET: -**

These all create a sort of window within the Web page. In the window the plug-in program shows the desired content. This will only work if the plug-in exists but if not you can link to a download location so the user can install it.

3. **HTMLS VIDEO and SOUND: -**
   In a response to the problem of handling different types of multimedia the W3C are trying to agree standards for video and sound in Web pages. If successful, all new browsers will have to support those standards and so video or sound can be included in a Web page with a single element with guaranteed results.

VII. Required Resources with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard	14.1

VIII. Procedure:

a. **To embed a video into a web page:**
b. **Prepare Video:** Choose or create a video and ensure it's in a supported format (e.g., MP4, WebM).
c. **Host Video:** Upload the video file to a web server or use a video hosting platform like YouTube or Vimeo.
d. **Get Embed Code:** Obtain the embed code for the video from the hosting platform or use the HTML <video> tag for self-hosted videos.
e. **Insert Code:** Paste the embed code or <video> tag into the HTML of your web page where you want the video to appear.
f. **Configure Attributes:** Set attributes like autoplay, loop, controls, width, and height as needed to customize video playback.
g. **Style and Position:** Use CSS to style and position the embedded video player on your web page to match your design.
h. **Test:** Preview the web page in a browser to ensure the video plays correctly and looks as expected.

IX. Result(s)

```
<!DOCTYPE html>
<html>
<body>

<video width="400" controls>
  <source src="mov_bbb.mp4"
type="video/mp4">
  <source src="mov_bbb.ogg"
type="video/ogg">
  Your browser does not support HTML
video.
</video>

<p>
Video courtesy of
<a href="https://www.bigbuckbunny.org/"
target="_blank">Big Buck Bunny</a>.
</p>

</body>
</html>
```

Video courtesy of Big Buck Bunny.

X. PPractical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. What is the purpose of the controls attribute in the <video> element?
2. How can you specify alternative video files for different browsers using the <source> element?
3. What's the recommended way to include a video in HTML5?

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XI References / Suggestions for further Reading

1. https://www.w3schools.com/html/html_images.asp
2. https://www.onlinehtmleditor.net/

XII.Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 14: Develop a webpage for embedded video streaming using professional HTML5 editor

I. Practical Significance

Embedding video streaming into a web page offers practical significance by enabling real-time content delivery and enhancing user engagement. It allows websites to broadcast live events, webinars, conferences, or product demonstrations, expanding reach and accessibility.Video streaming provides interactive experiences, fostering direct communication with audiences through features like live chat and audience participation. Additionally, embedding video streaming encourages prolonged user interaction, increases website traffic, and fosters deeper connections with audiences, ultimately contributing to a richer and more immersive online experience.

II. Industry / Employer Expected Outcome:

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (COS)

- Perform basic video editing operations.
- Design web pages with multimedia component.

IV. Laboratory Learning Outcome:

- Embed Video Streaming on Web Page.

V. Relevant Affective domain related Outcome(s)

a) Follow ethical practices.
b) Demonstrate working as a leader/ a team member.
c) Practice good housekeeping.
d) Participate in team problem solving activities.
e) Prioritizes time effectively to meet the needs of the team and self

VI. Minimum Theoretical Background

To embed video streaming into a web page, choose a streaming platform like YouTube Live or Twitch, set up your stream, access the embed code provided by the platform, copy and paste the code into your web page's HTML, customize playback options if needed, save changes, and test the embedded stream in a browser. This allows you to provide live content to your website visitors, enhancing engagement and interaction with your audience.

VII. Required Resources with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and open source operating System. (RedHat, Ubuntu etc.).	14.1

VIII. Procedure

Here's a step-by-step procedure for embedding video streaming into a web page:

1. **Select Video Streaming Platform:** Choose a video streaming platform that suits your needs and budget, such as YouTube Live, Twitch, or Vimeo Livestream.
2. **Set Up Account:** Sign up for an account on the chosen platform and familiarize yourself with its features and settings.
3. **Create or Schedule Stream:** Create a new stream on the platform or schedule an upcoming event if it's a live broadcast.
4. **Access Embed Code:** Once the stream is set up, locate the embed code provided by the streaming platform. This code allows you to embed the live stream into your web page.
5. **Copy Embed Code**: Copy the embed code provided by the platform.
6. Insert Code Into Web Page: Open the HTML file of your web page in a text editor or web development tool.
7. **Paste Embed Code:** Paste the embed code into the appropriate location within the HTML file where you want the live stream to appear.
8. **Customize Options:** Customize the embedded player options as needed, such as autoplay, mute, or player controls. You can usually adjust these settings within the embed code itself or by modifying the attributes of the <iframe> tag.
9. **Save Changes:** Save the changes to your HTML file.
10. **Test:** Open the web page in a browser to test the embedded live stream. Ensure that it loads correctly and plays smoothly.

IX. Result(s)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
    <title>Live Streaming</title>
</head>
<body>
    <video id="movie" width="460" height="306" preload autoplay>
        <source src="rtmp://fl2.sz.xlcdn.com:80/sz=Deltion_College=1b1"
type="video/mp4; codecs='avc1.42E01E, mp4a.40.2'">
        <!-- You can add an alternative player (e.g., Flash) here -->
    </video>
</body>
</html>
```

X. Practical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VIII for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. What are different format of videos can be added in Web page.
2. Describe controls properties in video tag.
3. Write a HTML code to start a video automatically, use the autoplay attribute.

(Space for answer)

XI References / Suggestions for further Reading

a. https://www.w3schools.com/html/html_images.asp
b. /www.onlinehtmleditor.net/

XII Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(l0)	**Product Related(15)**	**Total(25)**	

Practical No. 15: Creating an animation of a rotating ball using animation software like Blender

I. Practical Significance

Creating an animation of a rotating ball with ActionScript using animation software like Blender holds practical significance across diverse industries. It serves educational purposes by illustrating concepts of physics and motion, aids in entertainment through incorporation into movies, TV shows, and games, and enhances advertising and marketing efforts by capturing attention and conveying brand messages effectively. Additionally, such animations find applications in simulation and training for industries like engineering and aviation, and in interactive media projects for engaging user experiences. Overall, they facilitate communication, learning, and audience engagement across a wide range of contexts.

II. Industry / Employer Expected Outcome:

- Construct different types of Multimedia.

III. Course Level Learning Outcomes (cos):

- Create simple 2D animation
- Design web pages with multimedia components.

IV. Laboratory Learning Outcome:

- Create simple animation

V. Relevant Affective domain related Outcome(s)

1. Follow ethical practices.
2. Demonstrate working as a leader/ a team member.
3. Practice good housekeeping.
4. Participate in team problem solving activities.
5. Prioritizes time effectively to meet the needs of the team and self

VI. Minimum Theoretical Background

Use of 3D animation software can be termed as video capturing of the real world which is full of 3D objects and then generating the series of 2D images rapidly to simulate motion in the form of output. While transferring 2D image in third dimension; a z-coordinate axis has to be added along with the default ones i.e. x-axis and y-axis. In addition to this, one just doesn't create objects in 3D.

VII. Required Resources with specifications

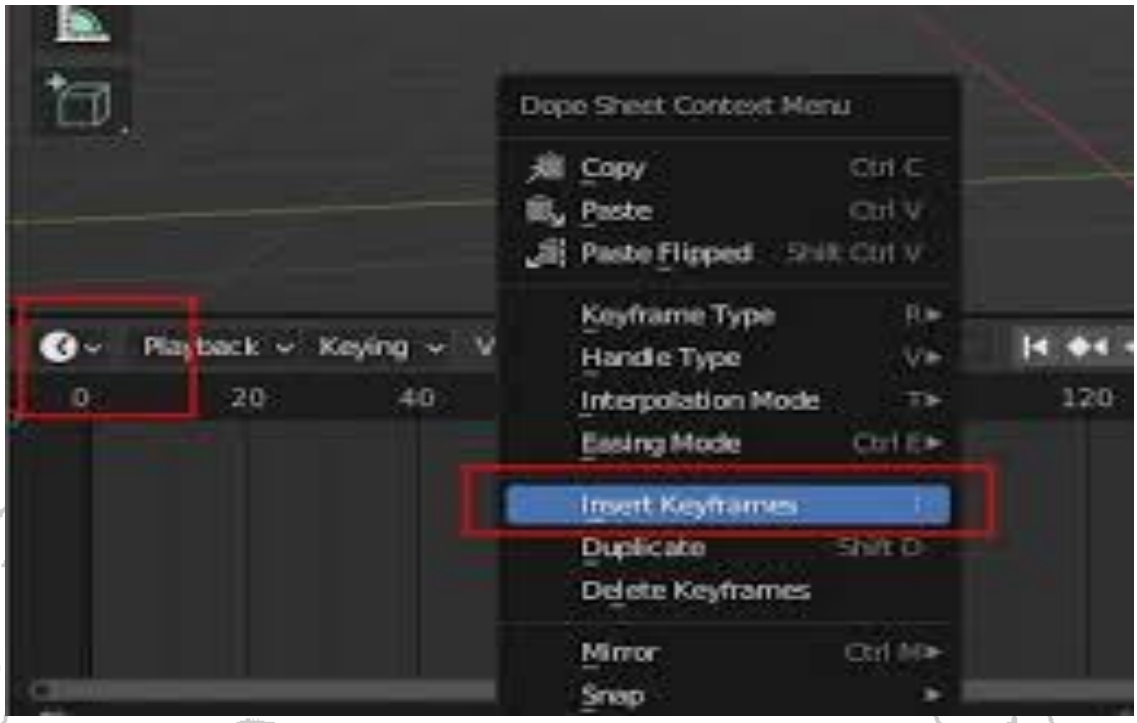
Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard	15.2

VIII. Procedure

To create an animation of a rotating ball with ActionScript using animation software such as Blender, follow these steps:

1. **Prepare the Scene:** Open Blender and set up the scene by creating or importing a 3D model of a ball. Ensure the ball is centered and positioned correctly in the scene.
2. **Set Keyframes:** In Blender's animation timeline, set keyframes to define the start and end positions of the ball's rotation. Use Blender's keyframe animation tools to animate the ball's rotation over time.
3. **Add ActionScript Code:** Write ActionScript code to control the ball's rotation behavior. Define variables and functions to handle the rotation speed, direction, and any other desired parameters.
4. **Link Animation and Code:** Link the animation to the ActionScript code by exporting the animation data from Blender in a compatible format. Import the animation data into your ActionScript project.
5. **Integrate Animation:** Integrate the imported animation data into your ActionScript project and link it to the code controlling the ball's rotation. Use ActionScript to play, pause, or manipulate the animation as needed.

IX. Result(s)



X. Practical related questions (Provide space for answers)

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

(Note: Use Point VIII to X for all relevant practical exercise use blank pages provided or attach more pages if needed.)

1. What are basic shapes available with Blender?
2. What are different layers available with 3D Animations?
3. Name any two tools used in blender.

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XI References / Suggestions for further Reading

a. https://www.katsbits.com/tutorials/blender/useful-keyboard-shortcuts.php
b. http://download.blender.org/documentation/BlenderHotkeyReference.pdf

XII Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**40%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	20%
Product related (15 Marks)		**60%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	10%
5.	Use of Effects and Transitions	10%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	

Practical No 16
Identify and experience Augmented Reality phenomena using gadgets such as smart phone/ google glass.

I. Practical Significance

Augmented Reality (AR) allows you to overlay digital information onto the real world, enhancing your perception and interaction with your surroundings. Augmented reality has a variety of uses, from assisting in the decision-making process to entertainment. AR is used to either visually change natural environments in some way or to provide additional information to users. The primary benefit of AR is that it manages to blend digital and three-dimensional (3D) components with an individual's perception of the real world. AR delivers visual elements, sound and other sensory information to the user through a device like a smartphone, glasses or a headset. This information is overlaid onto the device to create an interwoven and immersive experience where digital information alters the user's perception of the physical world. The overlaid information can be added to an environment or mask part of the natural environment.

II. Industry / Employer Expected Outcome

- Identify and experience Augmented Reality phenomena using gadgets such as smart phone/ google glass

III. Course Level Learning Outcomes (COS):

- Design Web Pages with Multimedia components.

IV. Laboratory Learning Outcome:

- Apply Augmented Reality phenomena using relevant gadgets.

V. Relevant Affective Domain related outcome(s)

1.Follow Safety practices.
2.Follow ethical practices.
3.Demonstrate working as a leader/ a team member.
4.Participate in team problem solving activities.
5.Prioritizes time effectively to meet the needs of the team and self

VI. Relevant Theoretical Background

Augmented reality is deliverable in a variety of formats, including within smartphones, glasses. AR contact lenses are also in development. The technology requires hardware components, such as a processor, sensors, a display and input devices. Mobile devices, like smartphones and tablets, already have this hardware onboard, making AR more accessible to the everyday user. Mobile devices typically contain sensors, including cameras, accelerometers, Global Positioning System (GPS)

instruments and solid-state compasses. For AR applications on smartphones, for example, GPS is used to pinpoint the user's location, and its compass is used to detect device orientation. Google Glass is a wearable, voice- and motion-controlled Android device that resembles a pair of eyeglasses and displays information directly in the user's field of vision. Google Glass offers an augmented reality experience by using visual, audio and location-based inputs to provide relevant information

VII. Procedure:

AR Using Smartphone

1) **Install AR Apps** like Pokémon GO, Google Maps AR, Snapchat or Instagram, IKEA Place, Measure App (iOS)
2) **Enable AR Features**
3) Open AR App.
4) Follow the on-screen instructions to scan your environment.

Using Google Glass

1) **Set Up Google Glass**
2) **Install AR Apps**
3) **Using Google Glass display will show digital information overlaid on your real-world view.**

VIII. Required Resources with specifications

Sr.No	Resources specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and operating System. (Window 10,RedHat, Ubuntu etc.). Hardware Required : Smart Phone, Google Glass Software Required : Pokemon GO, Google Maps AR,Snapchat,Instagram,IKEA Place, Winkfeed, AR Navigation,Glassware Apps	5.1

IX. Result (Output of the Program)

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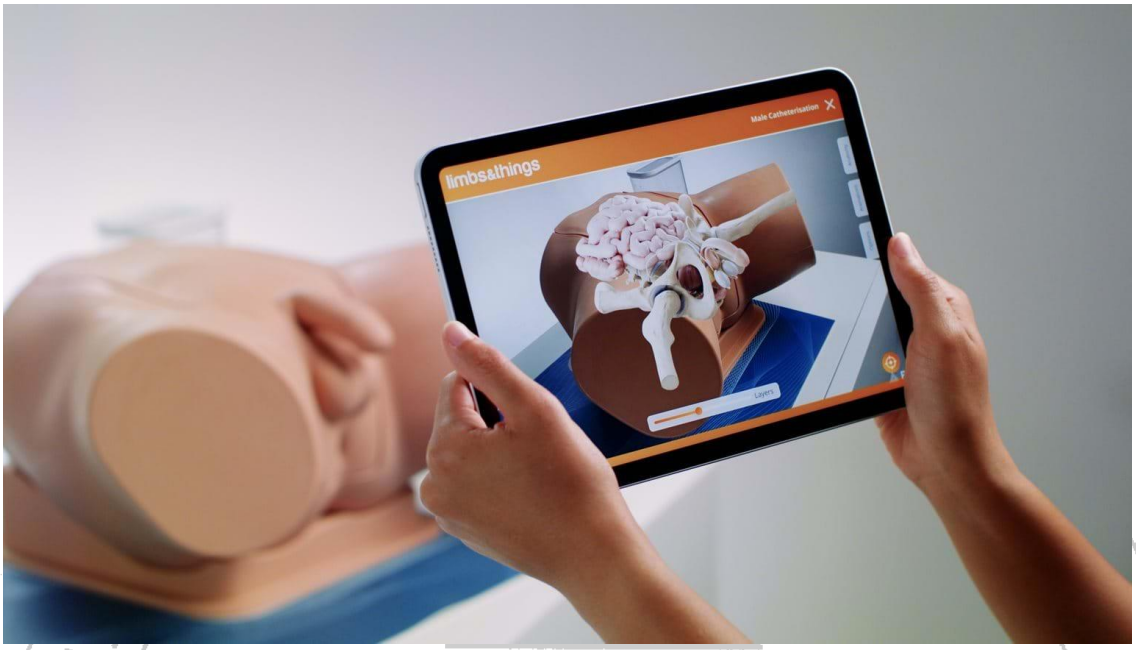

X. Practical Related Questions

(Note: Use Point VI to VII for all relevant programming exercise use blank pages provided or attach more pages if needed.)

1) Using a Smartphone

1. **Install AR Apps**:

- **Pokémon GO**: One of the most popular AR games where you can find and capture virtual creatures in the real world.
- **Google Maps AR**: Provides AR walking directions to help you navigate by overlaying arrows and instructions onto your real-world view.
- **Snapchat or Instagram**: Both apps offer AR filters and lenses that can overlay effects on your face or environment in real-time.
- **IKEA Place**: Allows you to place virtual furniture in your space to see how it would look and fit.
- **Measure App (iOS)**: Uses AR to measure real-world objects with your iPhone's camera.

2. **Enable AR Features**:

- Ensure your device is AR-capable (most modern smartphones are).
- Grant necessary permissions (camera, location) to the apps.
- Calibrate the app if needed, by moving your phone around to capture the environment.

3. **Using the Apps**:

- Open the AR app.
- Follow the on-screen instructions to scan your environment.
- Interact with the virtual elements as instructed. For example, move your phone to catch Pokémon or see directional arrows in Google Maps AR.

2)Using Google Glass

Google Glass offers a different AR experience compared to smartphones. It's more of an augmented interaction than fully immersive AR. Here's how you can use Google Glass for AR:

1. **Set Up Google Glass**:
   - Ensure Google Glass is fully charged and connected to your smartphone via the MyGlass app.
   - Follow the initial setup instructions to calibrate your Glass.
2. **Install AR Apps**:
   - **Winkfeed**: Delivers information overlays such as news, weather, and social media updates.
   - **AR Navigation**: Provides turn-by-turn navigation instructions overlaid on your view.
   - **Glassware Apps**: Explore and install other AR Glassware from the MyGlass app or Google Glass website.
3. **Using Google Glass**:
   - Use voice commands to interact with Glass (e.g., "OK Glass, navigate to...").
   - The display will show digital information overlaid on your real-world view.
   - Interact with the touchpad on the side of the device to navigate through menus and options

(Space for answers)

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XV. References/Suggestions for further Reading

https://www.youtube.com/watch?v=vz0UUVDt2ps

XVI. Assessment Scheme

Performance indicators		Weightage
Process related(10 Marks)		**30%**
1.	Tool Selection Ability	20%
2.	Follow ethical practices	10%
Product related (15 Marks)		**70%**
3.	Correctness of result	20%
4.	Correctness in Use of appropriate tools	15%
5.	Use of Effects and Transitions	15%
6.	Aesthetics in result(s)	5%
7.	Timely Submission of report	5%
8.	Answer to sample questions	10%
Total (25 Marks)		**100%**

Marks Obtained			Dated signature of Teacher
Process Related(10)	**Product Related(15)**	**Total(25)**	