

## Lab No: 1

**WRITE A PROGRAM TO MANIPULATE TEXT ON C/C++ USING STANDARD GRAPHICS FUNCTIONS**

### Source Code:

```
#include<graphics.h>
#include<conio.h>
int main(){
    int gd= DETECT, gm;
    initgraph(&gd,&gm,"");
    for (int i=1;i<=5;i++)
    {
        //setting color for text
        setcolor (WHITE); //setcolor (int color) ;
        //changing fontface, orientation and size;
        settextstyle(i,0,i); //settextstyle(int font, int orientation, int size);
        //print the desired message.
        outtextxy (100, 30*i, "HELLO WORLD!"); //outtextxy(int x, int y, char value)
    }
    getch();
    closegraph();
    return 0;
}
```

**Output:**



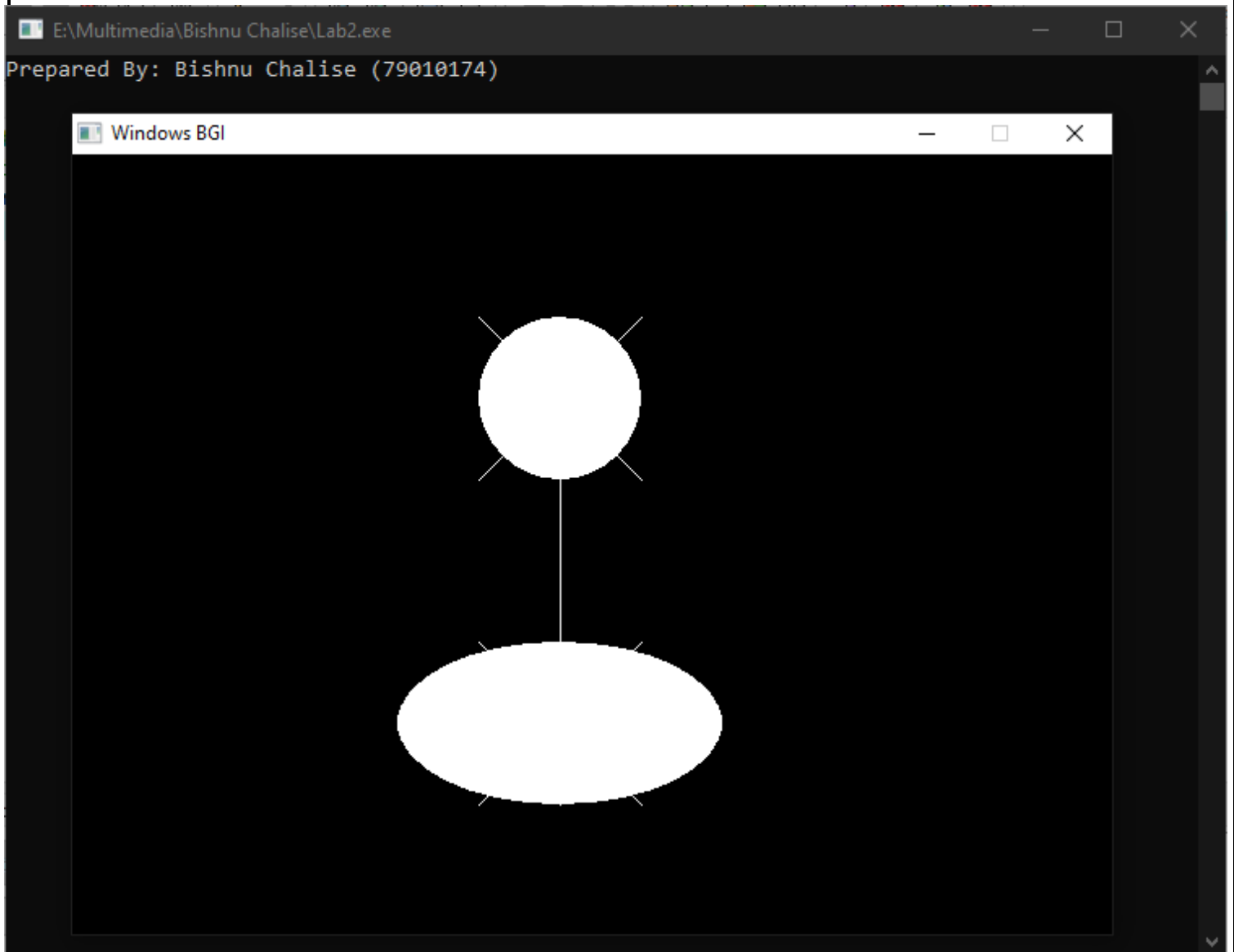
## Lab No: 2

**WRITE A PROGRAM TO DRAW GRAPHICS PRIMITIVES USING STANDARD FUNCTION.**

### Source Code:

```
#include<graphics.h>
#include<conio.h>
int main(){
    int gd= DETECT, gm;
    initgraph(&gd, &gm, "");
    //Setting filling style
    setfillstyle(SOLID_FILL,WHITE) ;//setfillstyle(int pattern, int color);
    //Drawing circle
    circle(300,150,50) ; //circle(int x, int y, int radius);
    //Filling color inside a boundary.
    floodfill(301,150, WHITE); //floodfill(int x , int y, int bordercolor);
    setfillstyle(SOLID_FILL,WHITE) ;
    //drawing ellipse
    ellipse(300,350,0,360,100,50) ; //elLipse(int x, int y, int startangle, int endangle, int
xradius, int yradius);
    floodfill(301,350,WHITE);
    //setting color
    setcolor (WHITE) ;//setcolor (int color)
    //line drawing
    line (150,150,50,150) ;
    //Line (int x1, int y1, int x2, int y2)
    getch();
    closegraph();
    return 0;
}
```

Output:



### Lab No: 3

**WRITE A PROGRAM TO ANIMATE A CAR USING GRAPHICS FUNCTIONS.**

**Source Code:**

```
#include <graphics.h>
#include <conio.h>
void draw_moving_car(void) {
    int i, j = 0, gd = DETECT, gm;
    initgraph(&gd, &gm, "");
    for (i = 0; i <= 420; i = i + 10) {
        // Set color of car as white
        setcolor(WHITE);
        // body of car
        line(0 + i, 300, 210 + i, 300);
        line(50 + i, 300, 75 + i, 270);
        line(75 + i, 270, 150 + i, 270);
        line(150 + i, 270, 165 + i, 300);
        line(0 + i, 300, 0 + i, 330);
        line(210 + i, 300, 210 + i, 330);
        // For left wheel of car
        circle(65 + i, 330, 15);
        circle(65 + i, 330, 2);
        // For right wheel of car
        circle(145 + i, 330, 15);
        circle(145 + i, 330, 2);
        // Line left of left wheel
        line(0 + i, 330, 50 + i, 330);
        // Line middle of both wheel
        line(80 + i, 330, 130 + i, 330);
        // Line right of right wheel
        line(210 + i, 330, 160 + i, 330);
        delay(100);

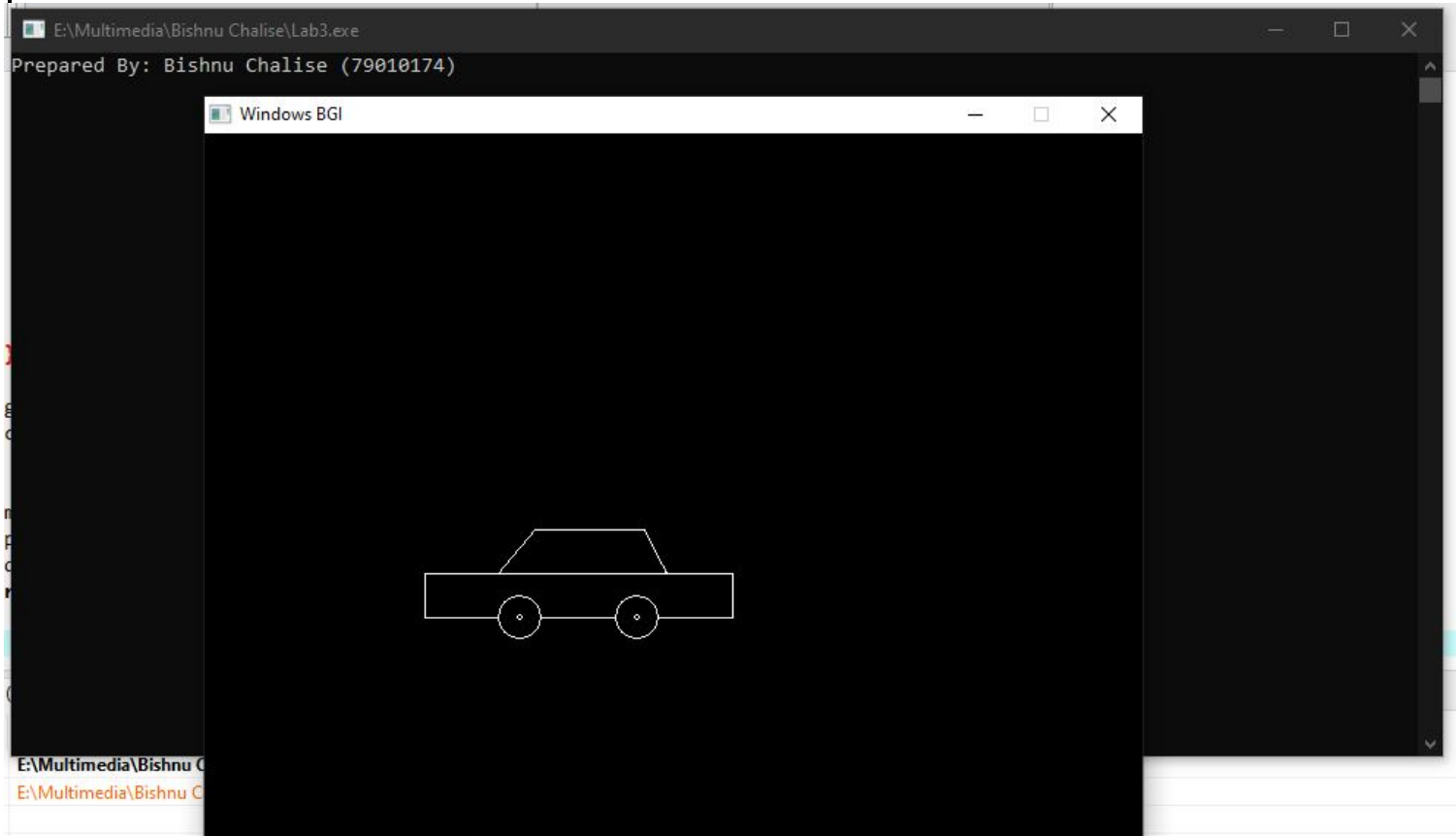
        // To erase previous drawn car, draw the whole car at same position but using black
        color
        setcolor(BLACK);
        // Lines for bonnet and body of car
        line(0 + i, 300, 210 + i, 300);
        line(50 + i, 300, 75 + i, 270);
```

```

    line(75 + i, 270, 150 + i, 270);
    line(150 + i, 270, 165 + i, 300);
    line(0 + i, 300, 0 + i, 330);
    line(210 + i, 300, 210 + i, 330);
    // For left wheel of car
    circle(65 + i, 330, 15);
    circle(65 + i, 330, 2);
    // For right wheel of car
    circle(145 + i, 330, 15);
    circle(145 + i, 330, 2);
    // Line left of left wheel
    line(0 + i, 330, 50 + i, 330);
    // Line middle of both wheel
    line(80 + i, 330, 130 + i, 330);
    // Line right of right wheel
    line(210 + i, 330, 160 + i, 330);
}
getch();
closegraph();
}
int main()
{
    draw_moving_car();
    return 0;
}

```

**Output:**



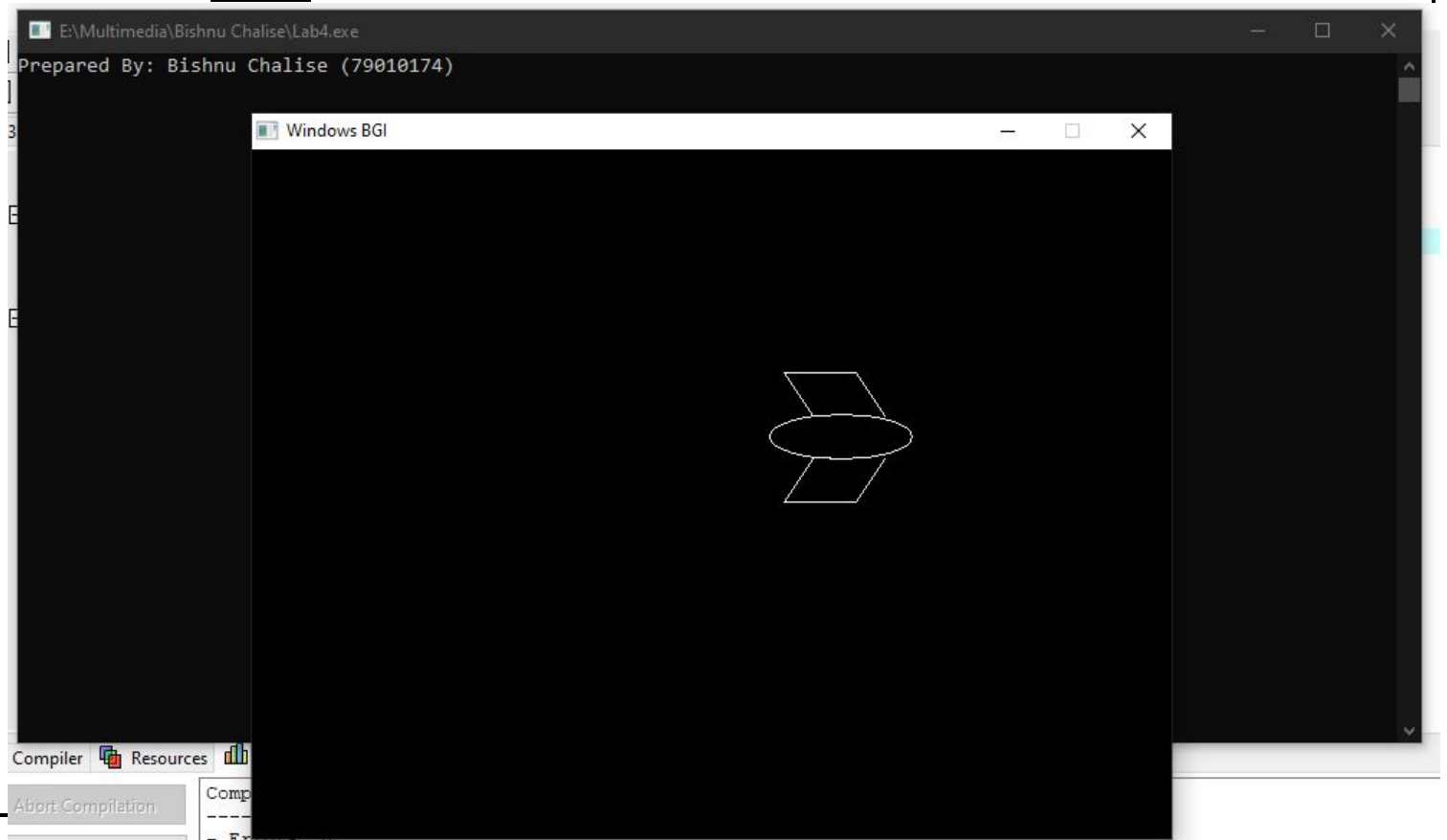
## Lab No: 4

WRITE A PROGRAM TO ANIMATE A SIMPLE AEROPLANE USING GRAPHICS FUNCTION.

### Source Code:

```
#include<graphics.h>
int main(){
    int gd = DETECT, gm, i;
    initgraph(&gd,&gm,"");
    for (i=10;1<=620; i++)
    {
        cleardevice();
        setcolor(WHITE);
        ellipse (100+i,200,0,360,50,16);
        line (130+i, 185,110+i,155),
        line (110+i,155,60+i,155),
        line (60+i,155,80+i,185) ,
        line (80+i, 215,60+i,245),
        line (60+i,245,110+i,245) ;
        line(110+i,245,130+i,215);
        delay (10);
    }
}
```

### Output:

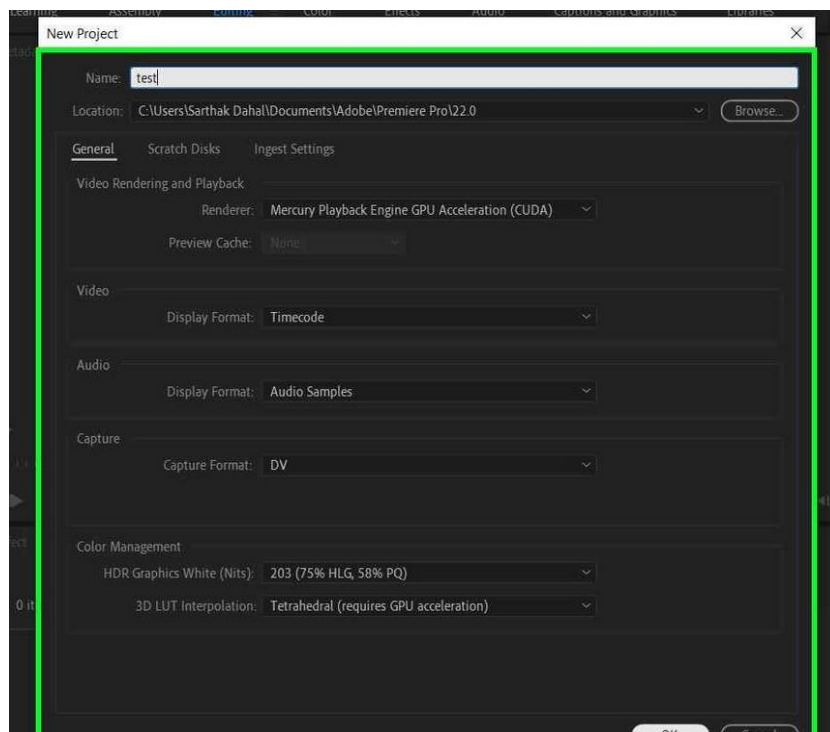
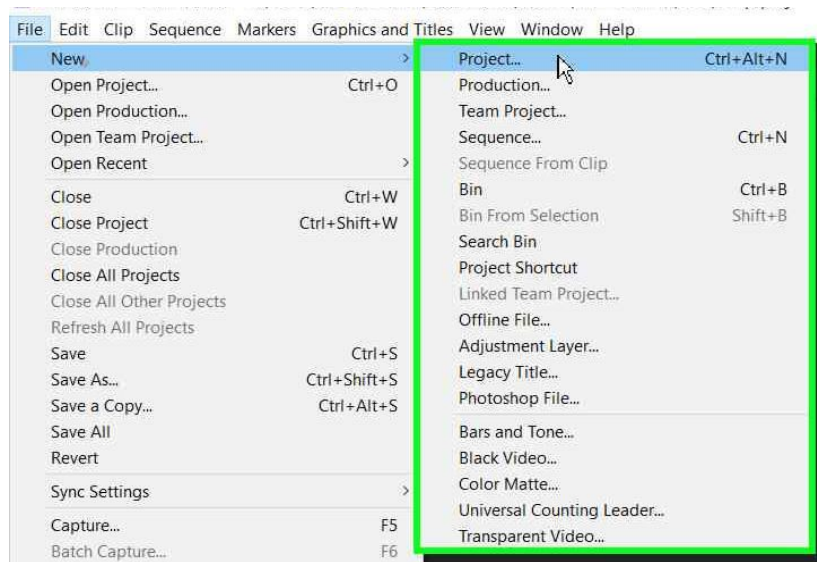


## Lab No: 5

**WRITE A PROGRAM/ ALGORITHM TO IMPORT, EDIT AND EXPORT A VIDEO ON SOME VIDEO AUTHORIZING SOFTWARE. E.g. Premiere Rush/Pro.**

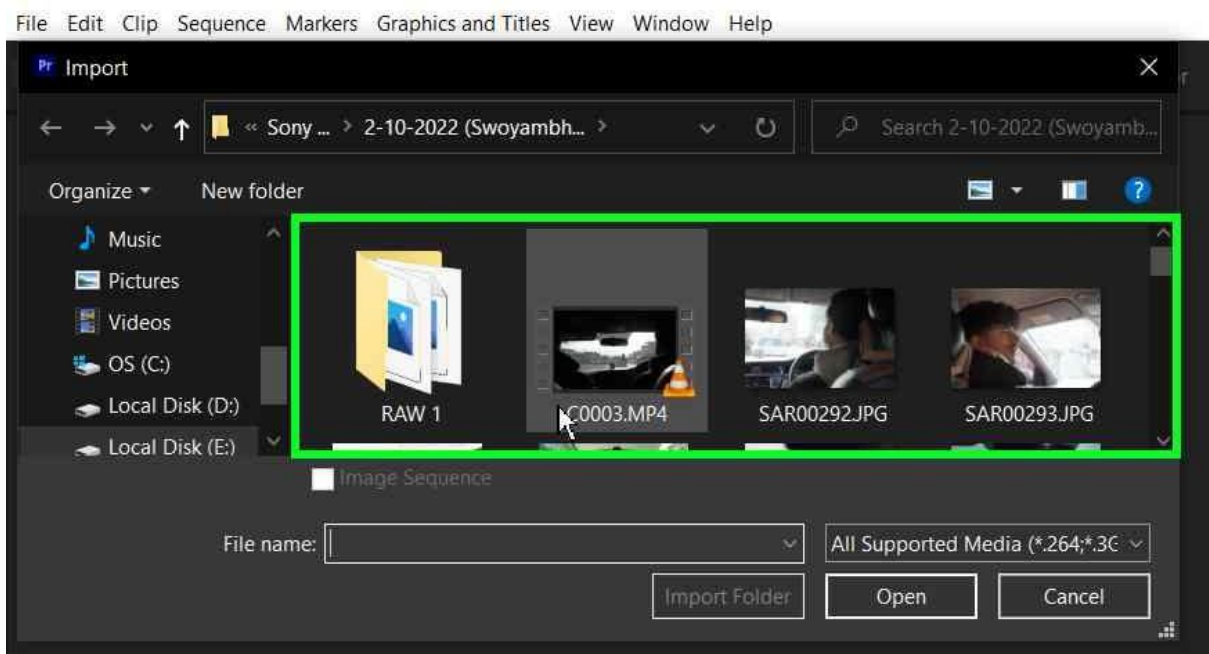
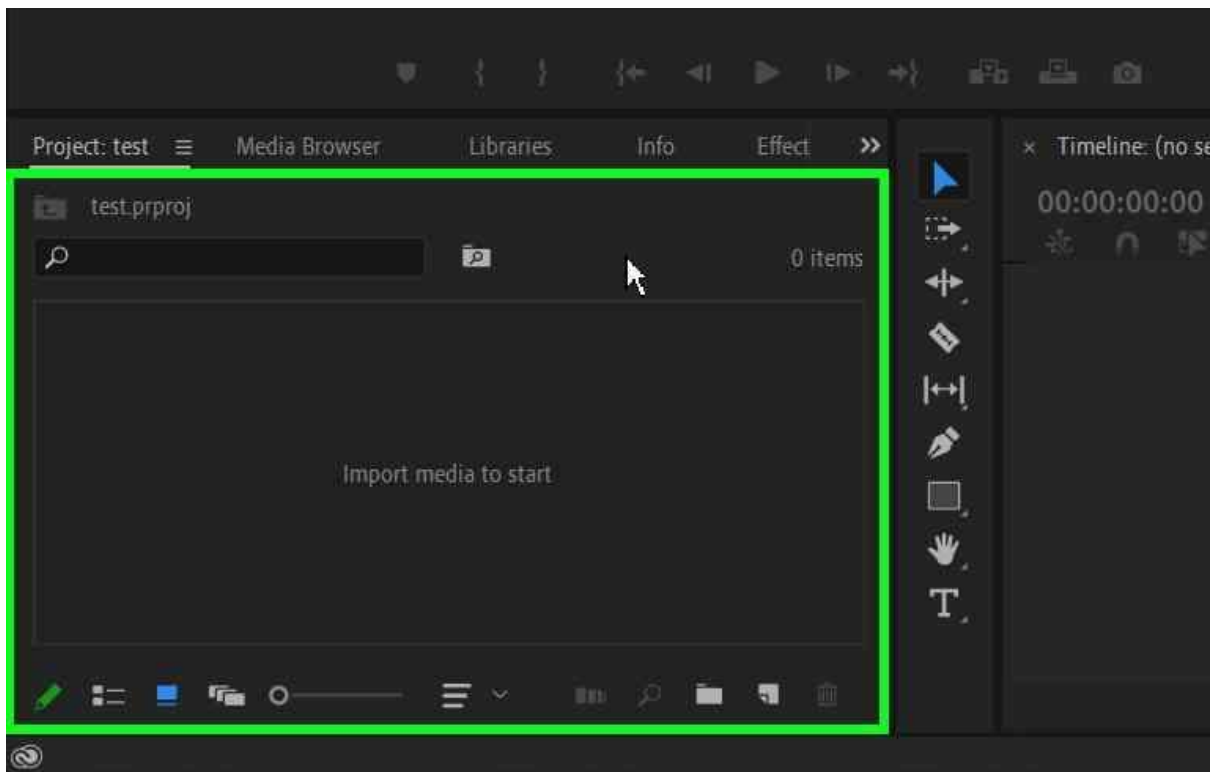
**Steps for simple IMPORT, EDIT AND EXPORT of a video are given below:**

- i. First open Adobe Premier Pro software and create a new project with the desired name by going to File -> New -> Project.

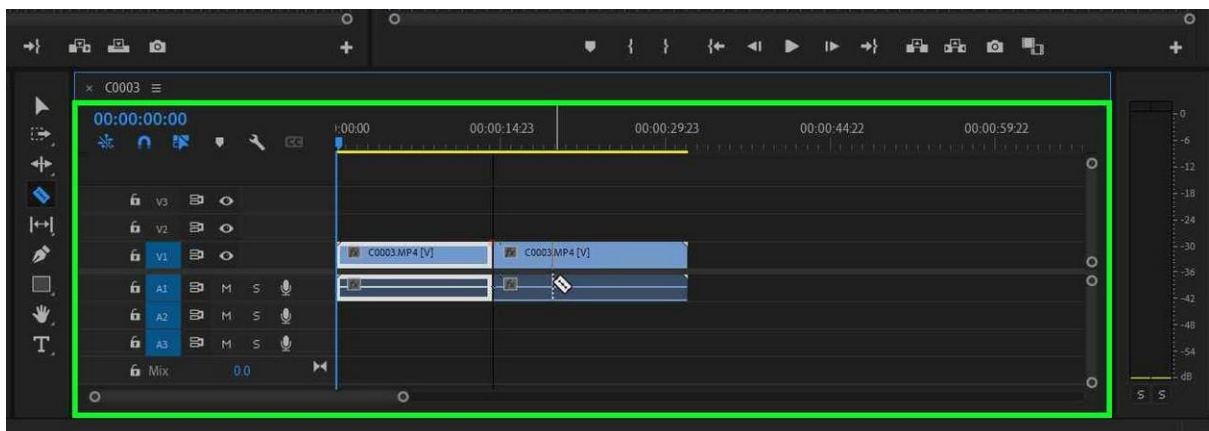
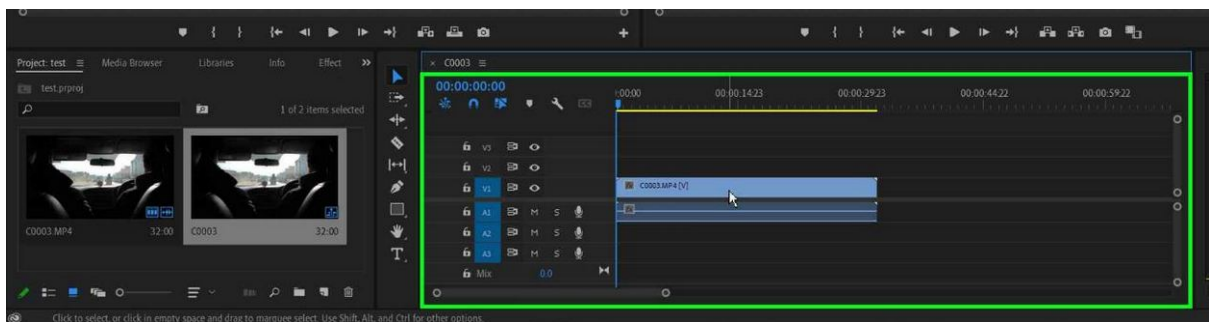
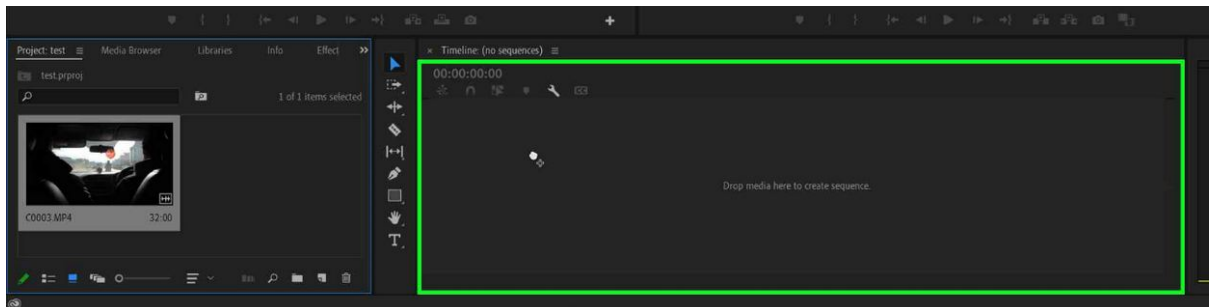




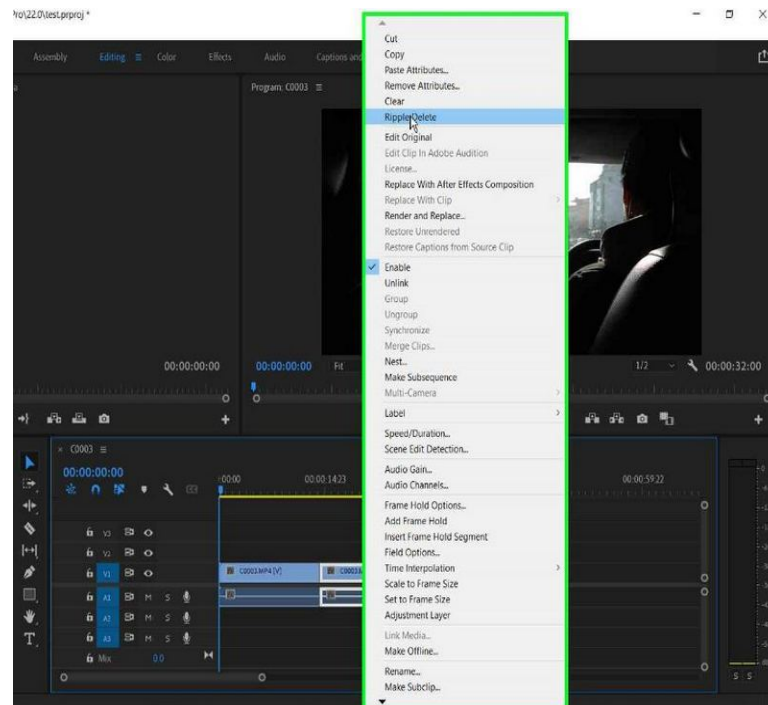
- ii. Then click on File -> Import (or Import Media). This is where you'll be taken to choose the video clips you want to edit. Once done this, the clips will be placed in Media Browser or Media Pool.



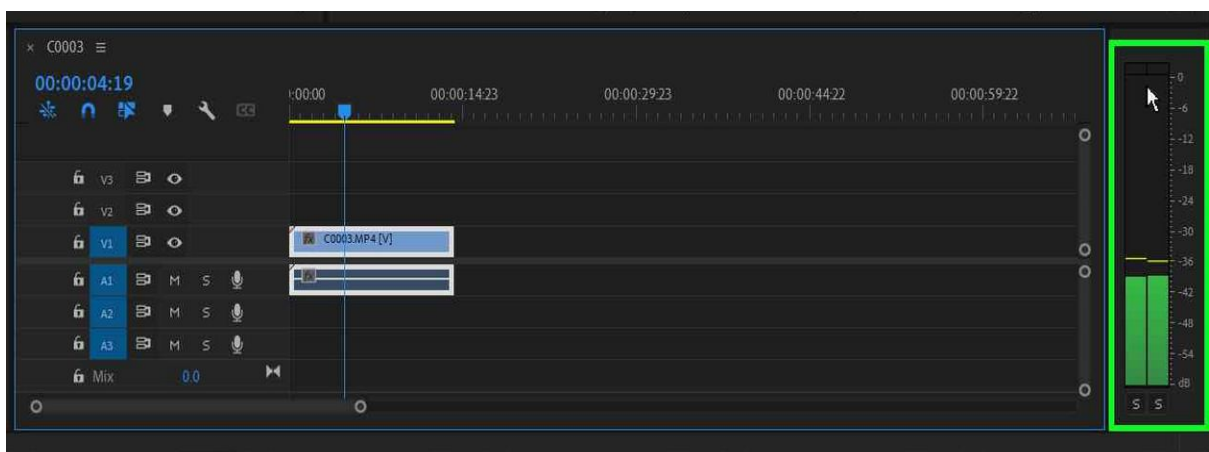
- iii. Bring the clips in the timeline by dragging the video to the timeline section of the software. Now to slice the video into two different parts, select the cut tool by pressing C on your keyboard (For Windows Users) and then click at the portion of the video you want to slice.



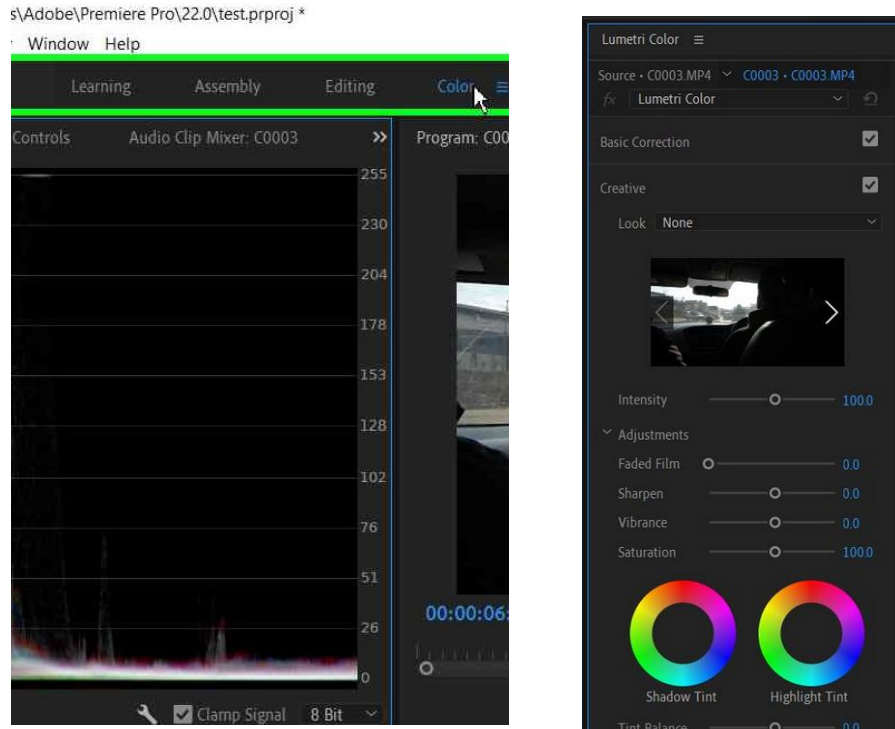
- iv. To delete any clips in the video, right click on the portion and select ripple delete.



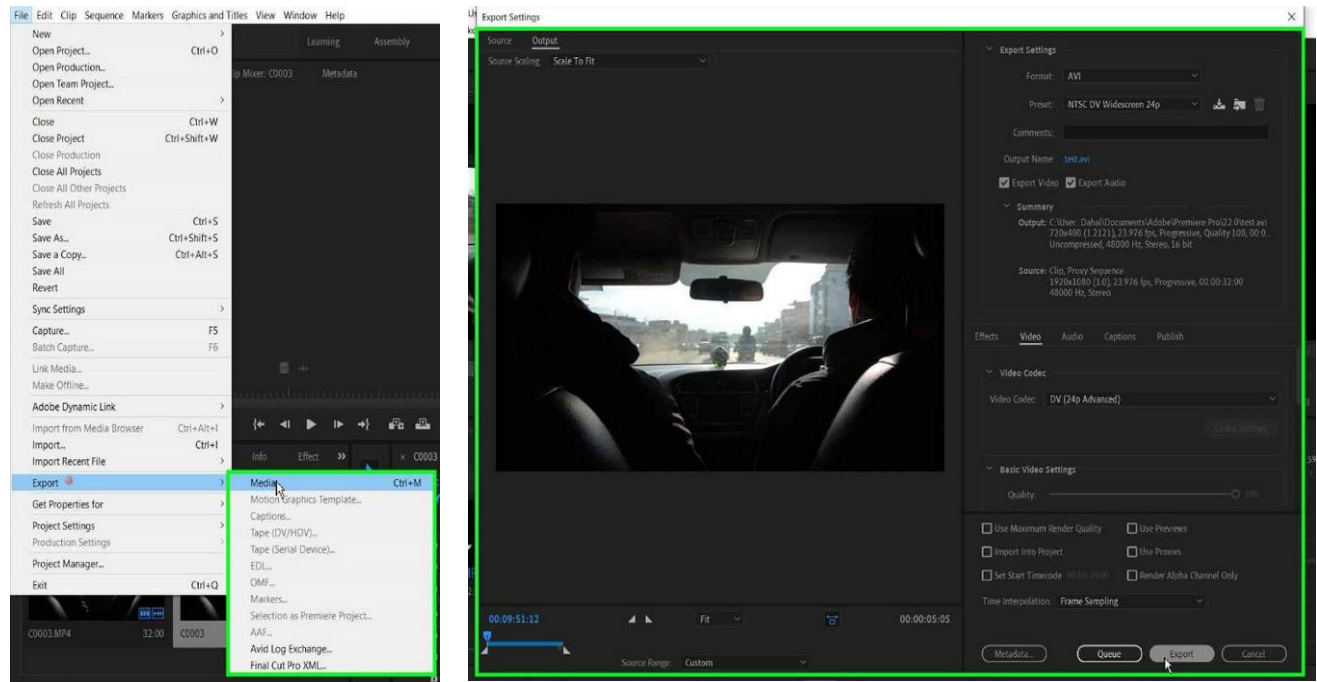
- v. To add the audio to the video simply place the clip under your video file on your timeline and match up the video to the audio. If you don't want to do this manually, most programs will offer a way to synchronize the two by simply right-clicking on both files and hitting Synchronize.



- vi. There are some simple tools you can use to correct your footage. These tools live in the Color section of the editing program. With Premiere Pro, it's called Lumetri Color. These tools will allow you to raise or lower the Contrast, brighten, or darken the Exposure, change the Color Temperature, and raise or lower the Shadows and Highlights etc.



- vii. Now the video is exported as a particular type of file, so that it can be uploaded or played in a specific way. It is also decided to export the video to whatever folder or destination you want the video to live. Video is generally exported at H.264, which will produce an MP4 file. You can export the video using command Ctrl+M or by clicking "File" then "Export as". The export setting can be changed as per the users' requirements.



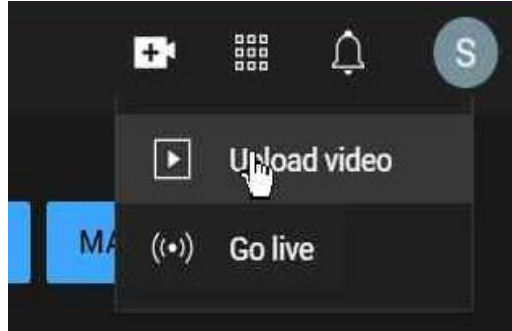
viii) Now we can play the edited video in any video player as per our requirement.

## Lab No: 6

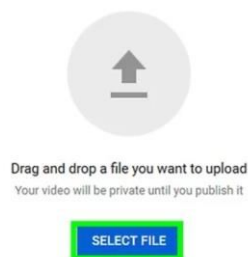
**WRITE A STEP-BY-STEP PROGRAM/ ALGORITHM TO UPLOAD THE VIDEO TO YOUTUBE AND EMBED THAT VIDEO ON A HTML PAGE.**

### **Step by step algorithm to upload video to YouTube:**

- i. Go to <https://www.youtube.com> in a web browser  
Note: If you are not already signed into your YouTube account click SIGN IN at the top right corner of the page to sign in. Select your YouTube account and enter your password or use your email address to sign into your YouTube account.
- ii. Click the camera icon with a plus (+) sign and click Upload video. It's in the upper right corner. This takes you to the YouTube Studio web page with an "Upload Video" window in the center of the page.



- iii. Drag your video file to the arrow on the window. Alternatively, you can click the blue "SELECT FILE" button, browse to the file on your computer, and then click open.



- iv. Add a video title and description. The title is required, the description is optional. The title can be up to 100 characters long. Use large box labeled "Description" to add a description to the video. Info in the description will appear below your video while viewing.

**Details**

Title (required)  
WikiHow 7/100

Description ⓘ  
Tell viewers about your video

**Thumbnail**  
Select or upload a picture that shows what's in your video. A good thumbnail stands out and draws viewers' attention. [Learn more](#)

Upload thumbnail

Uploading video...

- v. Click a thumbnail you want to use. The video's thumbnail is a still photo that represents the video on your channel and in search results.

**Details**

Title (required)  
WikiHow 7/100

Description ⓘ  
Tell viewers about your video

**Thumbnail**  
Select or upload a picture that shows what's in your video. A good thumbnail stands out and draws viewers' attention. [Learn more](#)

Upload thumbnail

**Playlists**  
Add your video to one or more playlists. Playlists can help viewers discover your content faster. [Learn more](#)

Playlists

- vi. Add the video to a playlist (Optional). If you want to add your video to a playlist, click the "playlist" drop down menu and select a playlist you have created to add your video to.

**Details**

Title (required)  
WikiHow 7/

Description ⓘ  
Tell viewers about your video

**Thumbnail**  
Select or upload a picture that shows what's in your video. A good thumbnail stands out and draws viewers' attention. [Learn more](#)

Upload thumbnail

**Playlists**  
Add your video to one or more playlists. Playlists can help viewers discover your content faster. [Learn more](#)

Playlists  
Select

- vii. Select if the video is made for kids or not. If your video is made for kids, click the radio button next to "Yes, it's made for kids". If your video is not made for kids, click the radio button next to "No, it's not made for kids".

Playlists  
Select

**Audience**

**Is this video made for kids? (required)**

Regardless of your location, you're legally required to comply with the Children's Online Privacy Protection Act (COPPA) and/or other laws. You're required to tell us whether your content is made for kids.

You need to answer this question: **What's content made for kids?**

☐ Yes, it's made for kids

☐ No, it's not made for kids

▼ Age restriction (advanced)

[MORE OPTIONS](#)

Paid promotion, tags, subtitles, and more

- viii. Click “More Options” and click” Next” when you are finished. The additional options include Paid Promotions, Tags, Language, Subtitle and Closed captions, Recording Date and Location, License and distribution, Category, Comments, and ratings.

**Is this video made for kids? (required)**

Regardless of your location, you're legally required to comply with the Children's Online Privacy Protection Act (COPPA) and/or other laws. You're required to tell us whether your videos are made for kids. [What's content made for kids?](#)

☒ Yes, it's made for kids

Features like personalized ads and notifications won't be available on videos made for kids. Videos that are set as made for kids are more likely to be recommended alongside other kids' videos. [Learn more](#)

☐ No, it's not made for kids

▼ Age restriction (advanced)

[MORE OPTIONS](#)

Paid promotion, tags, subtitles, and more

- ix. Add an End Screen or cards to your video (Optional) and click “Next”. An end screen is a screen that appears at the end of the video to promote related material on your channel. Cards allow you to promote your material during the video.

✓ Details 2 Video elements 3 Visibility

**Video elements**

Use cards and an end screen to show viewers related videos, websites, and calls to action. [Learn more](#)

☒ Add an end screen  
Promote related content at the end of your video

☐ Add cards  
Promote related content during your video

- x. Select a visibility level. There are three visibility option (Public, Unlisted, Private).Click the radio button next to the option you prefer.



## Visibility

Choose when to publish and who can see your video

### ☒ Save or publish

Make your video public, unlisted, or private

#### ☐ Public

Everyone can see your video

☐ Set as instant Premiere ?

#### ☐ Unlisted

Anyone with the video link can see your video

#### ☐ Private

Only you and people you choose can see your video

### ☐ Schedule

Select a date to make your video public

- xi. Schedule a date to go public (Optional). If you do not want the video to go public right away, you can schedule a time to go public. To schedule a time, click the radio button next to “Schedule”. Then click the drop-down menu with the date and select the date you want it to get public.

### ☐ Schedule

Select a date to make your video public

#### Before you publish, check the following:

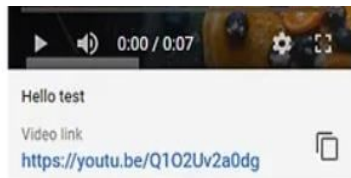
##### Do kids appear in this video?

Make sure you follow our policies to protect minors from harm, exploitation, bullying, and violations of labor law. [Learn more](#)

##### Looking for overall content guidance?

Our Community Guidelines can help you avoid trouble and ensure that YouTube remains a safe and vibrant community. [Learn more](#)

- xii. Click the blue “save” or “Schedule” button. It’s at the bottom-right corner of the window. This will publish the video to your YouTube channel at the scheduled date and time, or after the video is finished processing.



Finished processing

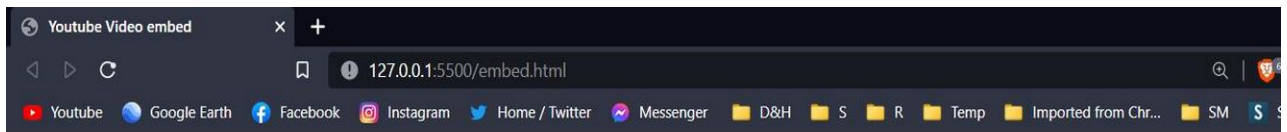
BACK

SAVE

### HTML code to embed the video on a HTML page:

```
<!DOCTYPE html>
<html>
<head>
  <title>Youtube Video embed</title>
</head>
<body>
  <h2> Youtube Video Embed Example </h2>
  <iframe width="390" height="270" src="https://www.youtube.com/embed/kV-
2Q8QtCY4" frameborder="1" allowfullscreen>
  </iframe>
  <iframe width="390" height="270"
src="https://www.youtube.com/embed/87by1DjfxLw" title="YouTube video player"
frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media;
gyroscope; picture-in-picture" allowfullscreen></iframe>
</body>
</html>
```

### Output:



### Youtube Video Embed Example



## Lab No: 7

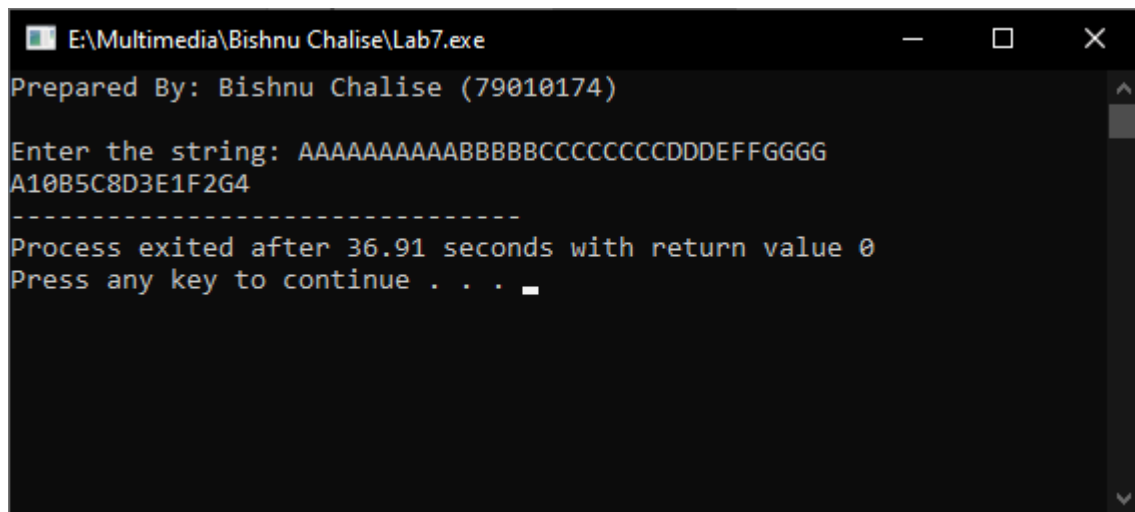
**WRITE A PROGRAM TO IMPLEMENT RUN LENGTH CODING ON GIVEN SET OF STRINGS.**

### Source Code:

```
#include <iostream>
using namespace std;
void printRLE (string str)
{
    int n = str.length() ;
    for (int i=0;i<n;i++){
        // Count occurrences of current character
        int count= 1;
        while (i < n-1 && str[i] == str[i+1]){
            count++;
            i++;
        }
        // Print character and its count
        cout<<str[i] <<count;
    }
}

int main()
{
    string str;
    cout<<"Enter the string:";
    cin>>str;
    printRLE(str);
    return 0;
}
```

Output:



```
E:\Multimedia\Bishnu Chalise\Lab7.exe
Prepared By: Bishnu Chalise (79010174)

Enter the string: AAAAAAAAAABBBBBCCCCCCCCDDDEFFGGGG
A10B5C8D3E1F2G4
-----
Process exited after 36.91 seconds with return value 0
Press any key to continue . . .
```

## Lab No: 8

**WAP TO IMPLEMENT HUFFMAN CODING ON SOME GIVEN CHARACTERS AND THEIR FREQUENCIES.**

### Source Code:

```
#include<string.h>
#include<stdio.h>
#include<stdlib.h>
typedef struct node
{
    char ch;
    int freq;
    struct node *left;
    struct node *right;
}node;
node * heap[100];
int heapSize=0;
void Insert(node * element){
    heapSize++;
    heap[heapSize] = element;
    int now = heapSize;
    while(heap[now/2] -> freq > element -> freq){
        heap[now] = heap[now/2];
        now /= 2;
    }
    heap[now] = element;
}
node * DeleteMin(){
    node * minElement,*lastElement;
    int child,now;
    minElement = heap[1];
    lastElement = heap[heapSize--];
    for(now = 1; now*2 <= heapSize ;now = child) {
        child = now*2;
        if(child != heapSize && heap[child+1]->freq < heap[child] -> freq ) {
            child++;
        }
        if(lastElement -> freq > heap[child] -> freq) {
```

```

        heap[now] = heap[child];
    }
    else{
        break;
    }
}
heap[now] = lastElement;
return minElement;
}

void print(node *temp,char *code){
    if(temp->left==NULL && temp->right==NULL) {
        printf("char %c code %s\n",temp->ch,code);
        return;
    }
    int length = strlen(code);
    char leftcode[10],rightcode[10];
    strcpy(leftcode,code);
    strcpy(rightcode,code);
    leftcode[length] = '0';
    leftcode[length+1] = '\0';
    rightcode[length] = '1';
    rightcode[length+1] = '\0';
    print(temp->left,leftcode);
    print(temp->right,rightcode);
}

int main(){
    heap[0] = (node *)malloc(sizeof(node));
    heap[0]->freq = 0;
    int n ;
    printf("Enter the no of characters: ");
    scanf("%d",&n);
    printf("Enter the characters and their frequencies:\n ");
    char ch;
    int freq,i;
    for(i=0;i<n;i++){
        scanf(" %c",&ch);
        scanf("%d",&freq);
        node * temp = (node *) malloc(sizeof(node));
        temp -> ch = ch;
        temp -> freq = freq;
        temp -> left = temp -> right = NULL;
    }
}

```

```

        Insert(temp);
    }
    if(n==1) {
        printf("char %c code 0\n",ch);
        return 0;
    }
    for(i=0;i<n-1;i++) {
        node * left = DeleteMin();
        node * right = DeleteMin();
        node * temp = (node *) malloc(sizeof(node));
        temp -> ch = 0;
        temp -> left = left;
        temp -> right = right;
        temp -> freq = left->freq + right -> freq;
        Insert(temp); }
    node *tree = DeleteMin();
    char code[10];
    code[0] = '\0';
    print(tree,code);
}

```

**Output:**

```

E:\Multimedia\Bishnu Chalise\Lab8.exe
Prepared By: Bishnu Chalise (79010174)

Enter the number of characters: 5
Enter the characters and their frequencies:
A 3
B 6
C 2
D 4
E 3
char A code 00
char D code 01
char C code 100
char E code 101
char B code 11

-----
Process exited after 49.34 seconds with return value 0
Press any key to continue . . .

```