Experiment No. 10
Topic : Program to perform animation
Name: Pradeep Rathod
Roll Number: 49
Date of Performance:
Date of Submission:

Aim: To develop programs for making animations such as

Objective:
Draw an object and apply various transformation techniques to this object. Translation, scaling and rotation is applied to object to perform animation.

Theory:

- For moving any object, we incrementally calculate the object coordinates and redraw the picture to give a feel of animation by using for loop.
- Suppose if we want to move a circle from left to right means, we have to shift the position of circle along x-direction continuously in regular intervals.
- The below programs illustrate the movement of objects by using for loop and also using transformations like rotation, translation etc.
- For windmill rotation, we use 2D rotation concept and formulas.

Program:

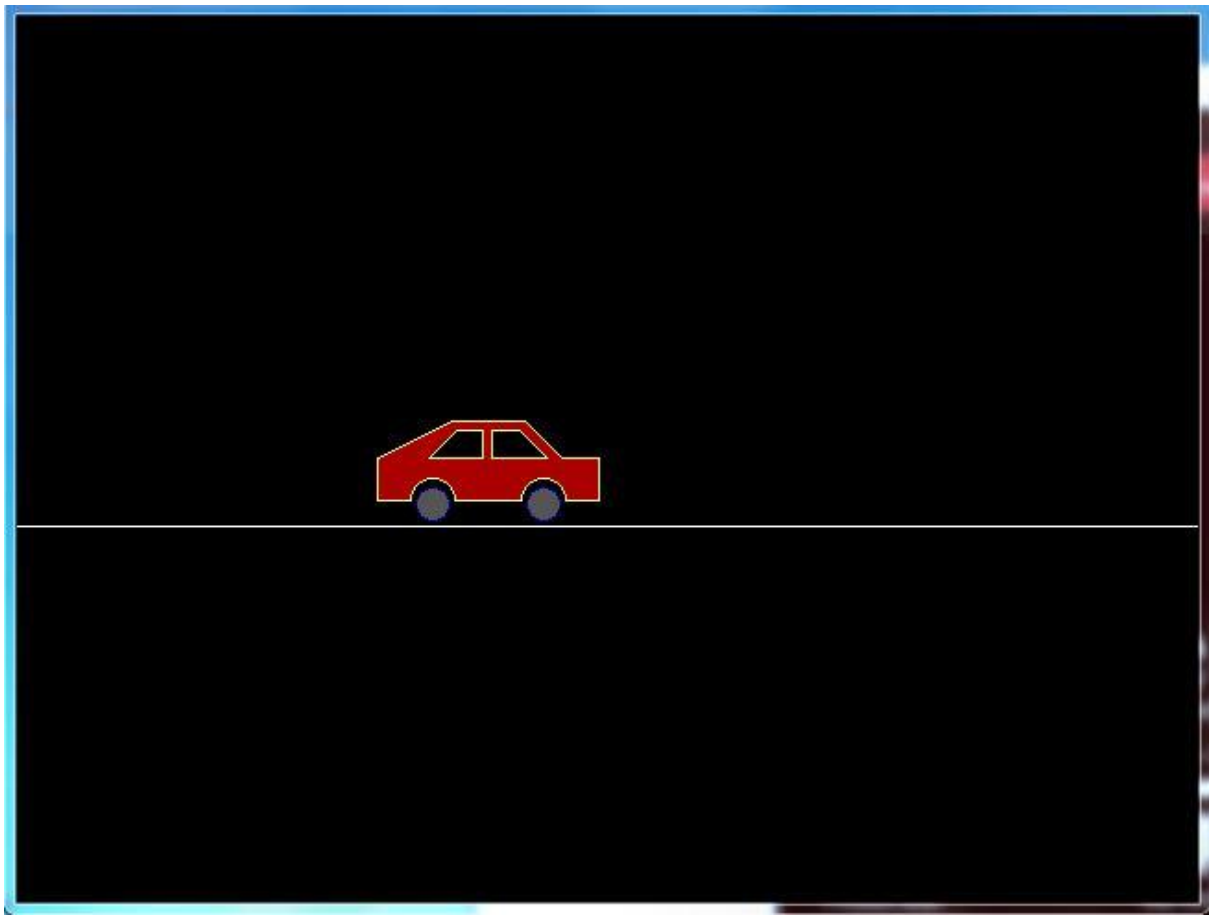
```
#include <stdio.h>

#include <graphics.h>

#include <dos.h>



int main() {

   int gd = DETECT, gm;

   int i, maxx, midy;
```

```
/* initialize graphic mode */
initgraph(&gd, &gm, "X:\\TC\\BGI");
/* maximum pixel in horizontal axis */
maxx = getmaxx();
/* mid pixel in vertical axis */
midy = getmaxy()/2;

for (i=0; i < maxx-150; i=i+5) {
   /* clears screen */
   cleardevice();

   /* draw a white road */
   setcolor(WHITE);
   line(0, midy + 37, maxx, midy + 37);

   /* Draw Car */
   setcolor(YELLOW);
   setfillstyle(SOLID_FILL, RED);

   line(i, midy + 23, i, midy);
```

```
line(i, midy, 40 + i, midy - 20);

line(40 + i, midy - 20, 80 + i, midy - 20);

line(80 + i, midy - 20, 100 + i, midy);

line(100 + i, midy, 120 + i, midy);

line(120 + i, midy, 120 + i, midy + 23);

line(0 + i, midy + 23, 18 + i, midy + 23);

arc(30 + i, midy + 23, 0, 180, 12);

line(42 + i, midy + 23, 78 + i, midy + 23);

arc(90 + i, midy + 23, 0, 180, 12);

line(102 + i, midy + 23, 120 + i, midy + 23);

line(28 + i, midy, 43 + i, midy - 15);

line(43 + i, midy - 15, 57 + i, midy - 15);

line(57 + i, midy - 15, 57 + i, midy);

line(57 + i, midy, 28 + i, midy);

line(62 + i, midy - 15, 77 + i, midy - 15);

line(77 + i, midy - 15, 92 + i, midy);

line(92 + i, midy, 62 + i, midy);

line(62 + i, midy, 62 + i, midy - 15);

floodfill(5 + i, midy + 22, YELLOW);

setcolor(BLUE);

setfillstyle(SOLID_FILL, DARKGRAY);
```

```
        /*  Draw Wheels */
        circle(30 + i, midy + 25, 9);
        circle(90 + i, midy + 25, 9);
        floodfill(30 + i, midy + 25, BLUE);
        floodfill(90 + i, midy + 25, BLUE);
        /* Add delay of 0.1 milli seconds */
        delay(100);
    }

    closegraph();
    return 0;
}
```

Output:



Conclusion - Comment on :

Conclusion:

1. Importance of Story Building:
The code provided is not directly related to storytelling, but it can be used as an analogy to highlight the importance of story building. In storytelling, just as in programming, having a well-structured and coherent narrative is crucial. Story building is the process of crafting a compelling and engaging plot that captures the audience's attention. Similarly, in coding, creating a well-organized and logical structure is essential for the successful execution of a program. Without a clear story or code structure, it becomes challenging to convey the intended message or achieve the desired outcome.

2. Defining the Basic Character of the Story:
In coding, defining the basic character of the story can be compared to setting up the initial parameters and variables that will drive the program. In the provided code, the basic character is the graphical representation of a car moving on a road. Similarly, in storytelling, the basic

character represents the main protagonist, their characteristics, and the initial situation that sets the stage for the narrative. Without a well-defined character or program variables, the story or code may lack direction and purpose.

3. Applying Techniques to These Characters:
Just as storytelling involves applying various literary techniques to develop characters and advance the plot, programming requires the use of coding techniques to manipulate variables and achieve specific goals. In the code, techniques like drawing lines, filling shapes, and using delays are applied to create the animation of a moving car. Similarly, in storytelling, techniques such as foreshadowing, character development, and plot twists are used to engage the audience and convey the narrative effectively.

In summary, whether in coding or storytelling, the process of building a compelling story or program involves defining characters, establishing a structure, and applying techniques to engage the audience or achieve the desired outcome. Both domains benefit from a thoughtful and well-organized approach to create a meaningful and impactful experience.