

# **MOVING BICYCLE ANIMATION**

## **Mini Project Report**

Submitted in partial fulfillment of the requirements

For the degree of

**Bachelor of Engineering (Computer Engineering)**

by:

Karishma Bairi TU3F1920014

Ketki Kulkarni TU3F1920053

Shweta Kaware TU3F1920005

Under the Guidance of

**PROF. RANDEEP KAUR KAHLON**



Department of Computer Engineering

TERNA ENGINEERING COLLEGE

Nerul (W), Navi Mumbai 400706

(University of

Mumbai) (2020-2021)

**Internal Approval Sheet**



**TERNA ENGINEERING COLLEGE,  
NERUL**

**Department of Computer Engineering**

Academic Year 2020-21

**CERTIFICATE**

This is to certify that the project entitled “**Moving Bicycle Animation**” is  
a bonafide work of

Karishma Bairi TU3F1920014

Ketki Kulkarni TU3F1920053

Shweta Kaware TU3F1920005

Submitted to the University of Mumbai in partial fulfilment of the  
requirement for the award of the Bachelor of Engineering (Computer  
Engineering).

**Guide**

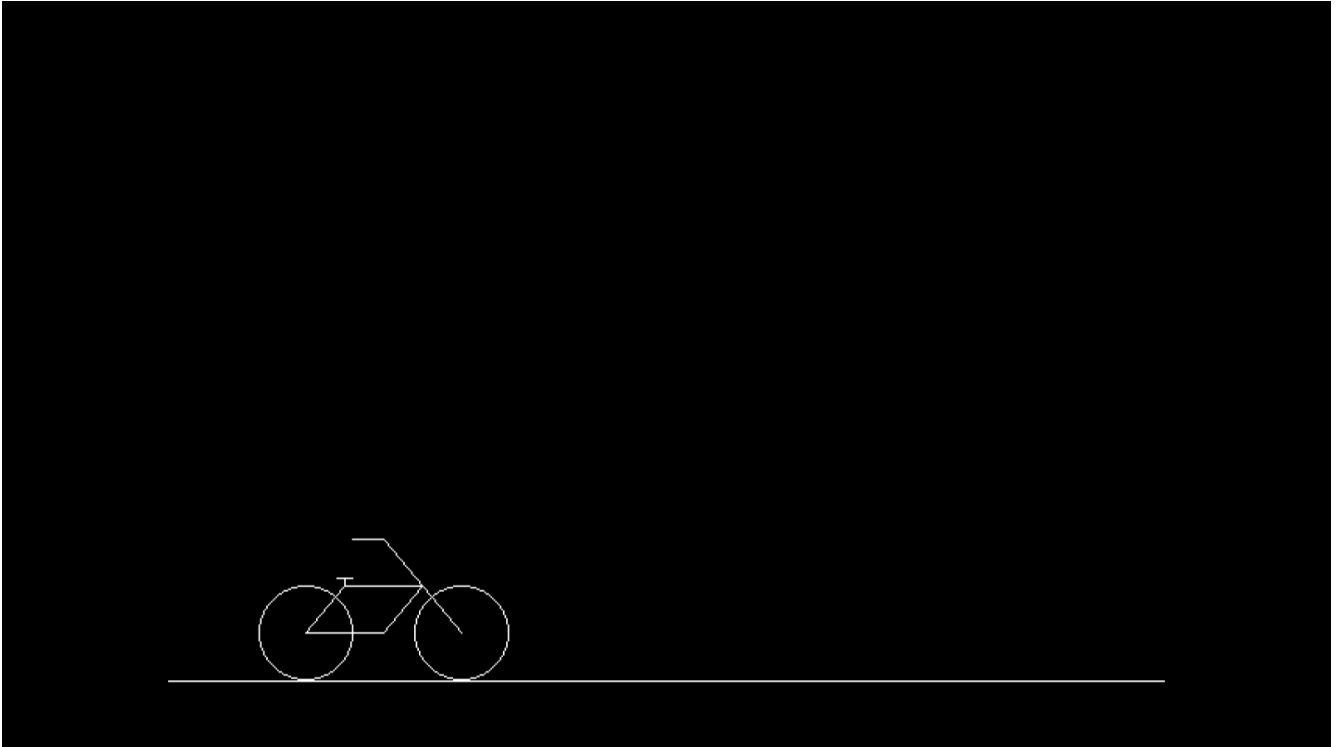
**Head of Department**

**Principal**

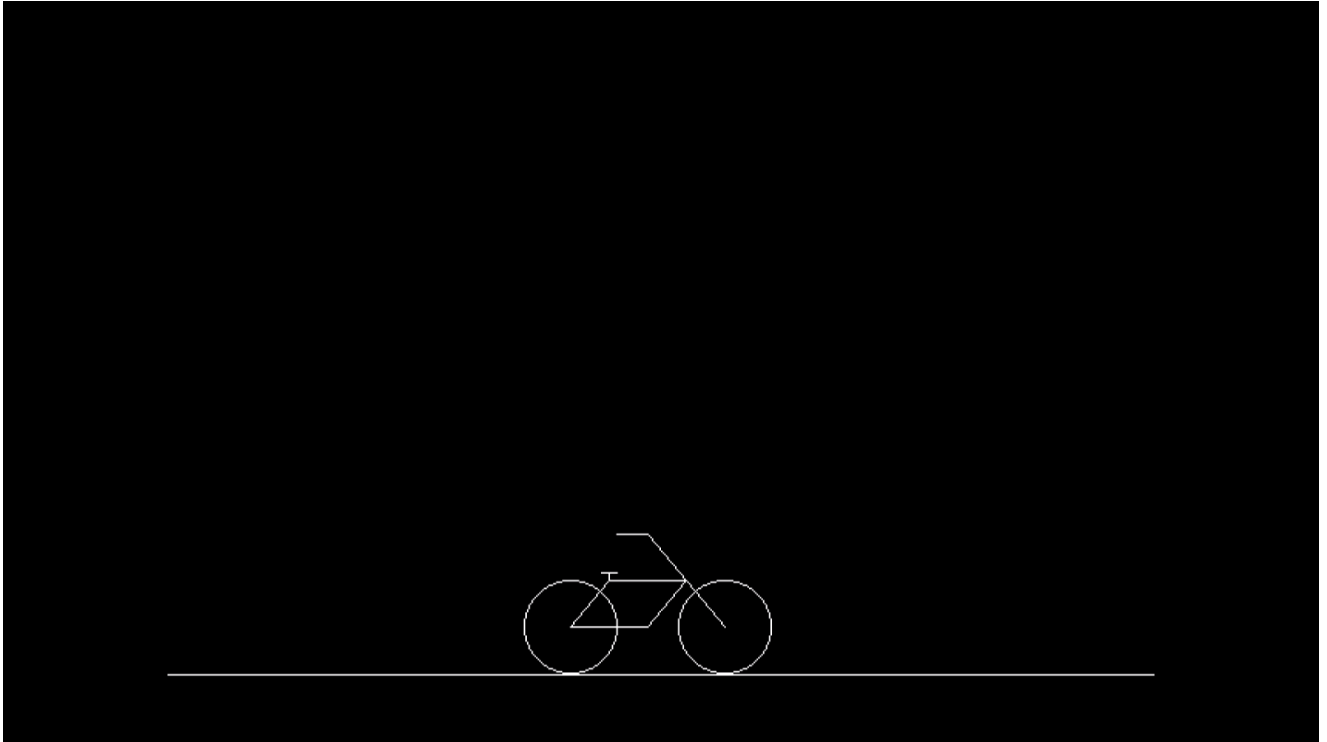
## TABLE OF CONTENTS

<b>Title</b>	<b>Page no.</b>
<b>Certificate</b>	<b>II</b>
<b>List of Figures.....</b>	<b>IV</b>
i. Bicycle at the start of road.....	IV
ii. Bicycle at the middle of road.....	V
iii. Bicycle at the end of road.....	VI
<b>1. Introduction.....</b>	<b>01</b>
1.1 Aim.....	02
1.2 Objective.....	02
<b>2. System Requirements.....</b>	<b>03</b>
<b>3. Features and Scopes.....</b>	<b>04</b>
<b>4. Methodology.....</b>	<b>05</b>
<b>5. Functions used.....</b>	<b>06</b>
5.1 Some of the function included in < graphics.h> used in our project.....	06
5.2 Other Header Files.....	07
<b>6. Program Code.....</b>	<b>08</b>
<b>7. Program Output.....</b>	<b>10</b>
<b>8. Conclusion.....</b>	<b>12</b>
<b>9. References.....</b>	<b>13</b>

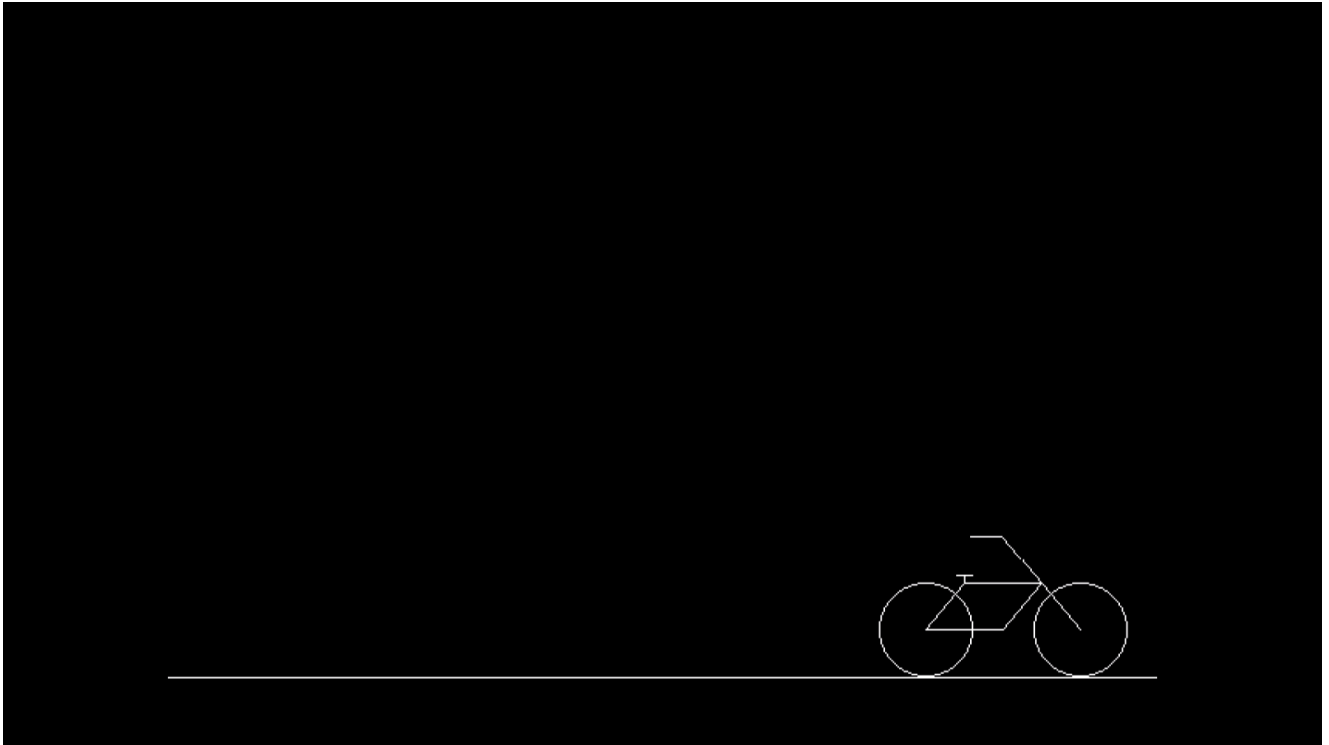
## LIST OF FIGURES



**Bicycle at the start of road**



**Bicycle at the middle of the road**



**Bicycle at the end of the road**

## INTRODUCTION

Computer has become a powerful tool for the rapid and economical production of pictures. Computer Graphics remains one the most exciting and rapidly growing fields. Old Chinese saying” One picture is worth of thousand words” can be modified in this computer era into “One picture is worth of many kilobytes of data”. It is natural to expect that graphical communication will often be more convenient when computers are utilized for this purpose. Many people for different domain of applications use interactive graphics. For example structural engineering use for efficient design of structures on the basis of the analysis of stress in various elements of the structure. From the survey it is evident that in future, engineers, designers etc. will be using computer graphics quite extensively. There is virtually no area in which graphical displays cannot be used to some advantage, and so it is not surprising to find the use of computer graphics so widespread. Today, we find Computer Graphics used routinely in such diverse areas such as science, engineering, medicine, business, industry, government, art, entertainment, advertising, education, training, etc.

So for understanding the depth of this subject and for gaining sound knowledge in this field we had an attempted to the first step on this current field. We tried to make a graphically Moving Bicycle Animation. The Moving Bicycle Animation is made with the application of Graphics codes. This project applied the subject and made the moving cycle which can move from one end to another. It has 2 round wheels amd a handle.

**AIM:** To create a Moving bicycle animation using Computer Graphics.

**OBJECTIVE:**

The main objectives of this project are:

- ❖ To implement the features of graphics.
- ❖ To interface the applications of graphics to the real world.
- ❖ To give some benefits to the disability.
- ❖ To make the life easier.
- ❖ To become familiar with Graphics and its logical coding.



## **SYSTEM REQUIREMENTS**

### **Hardware requirements :-**

Processor : Intel 386 onwards

Hard disk : At least 100mb of hard disk free space

Monitor : VGA compatible(CRT or LCD-TFT)

### **3.32 Software Requirements**

Operating system : Windows

Language tool : TurboC

Editor : notepad

## **FEATURES AND SCOPES**

Computer Graphics has revolutionized almost every computer-based application in science and technology. Information technology is a trend today. As the volume of information increases, problem of storage arises. As time is money, in the 21st century people doesn't have the time to read huge number of pages. So this problem is solved by Computer Graphics. Picture can represent a huge database like bar charts, pie charts etc. suppose, we have to show the performance of some factory related with profit since 1980. One requires large number of pages to store this huge information related with financial, numerical and statistical information. A common man requires a lot of time to understand it. There is an alternative to show or represent this information with the help of graphical tools such as bar chart or pie chart i.e. we can express this data in pictorial forms.

The importance of computer graphics lies in its applications. In engineering applications (e.g. automotive and aerospace) the ability to quickly visualize newly designed shapes is indispensable. Computer graphics has also expanded the boundaries of art and entertainment. Movies such as Jurassic Park make extensive use of computer graphics to create images that test the bounds of imagination. The development of computer graphics has made possible virtual reality, a synthetic reality that exists only inside a computer. Virtual reality is fast becoming an indispensable tool in education. Flight simulators are used to train pilot for extreme conditions. Surgical simulators are used to train novice surgeons without endangering patients.

Our project is one of the examples for the above mentioned features and scope of computer graphics and its applications. Applications like our projects can be further improved with more features and can be implemented in our day-to-day life. We can take many advantages of this subject in the future. It is probable that at present situation also, it is anyhow utilized in modern technical gadgets.

## METHODOLOGY

This project was done with the help of C-Programming Language. Different methods are performed in order to make it more applied and efficient. C Graphics programming is very easy and interesting. We used graphics programming for developing our projects, for designing, animation etc. It's not like traditional C programming in which you have to apply complex logic in your program and then you end up with a lot of errors and warnings in your program. In C graphics programming you have to use standard library functions ( need not worry if you don't know functions ) to get your task done. Just you pass arguments to the functions and it's done. Many graphic functions are coded on its header file <graphics.h>.

### Sample Graphics Code:

```
#include<graphics.h>
#include<conio.h>

int main()
{
    int gd = DETECT, gm;

    initgraph(&gd, &gm, "C:\\TC\\BGI");

    getch();
    closegraph();
    return 0;
}
```

This program initializes graphics mode and then closes it after a key is pressed. To begin with we have declared two variables of int type gd and gm for graphics driver and graphics mode respectively, you can choose any other variable name as you wish DETECT is a macro defined in "graphics.h" header file, then we have passed three arguments to initgraph function first is the address of gd, second is the address of gm and third is the path where your BGI files are present (we have adjusted this accordingly where our turbo compiler is installed). Initgraph function automatically decides an appropriate graphics driver and mode such that maximum screen resolution is set, getch() helps us to wait until a key is pressed, closegraph() function closes the graphics mode and finally return statement returns a value 0 to main indicating successful execution of your program.

## FUNCTIONS USED

### **Some of the function included in< graphics.h> used in our project:**

#### **i) Line function:**

line function is used to draw a line from a point(x1,y1) to point(x2,y2) i.e.(x1,y1) and(x2,y2) are end points of the line.The code given below draws a line.

Declaration :- void line(int x1, int y1, int x2, int y2);

#### **ii) Circle function:**

Circle function is used to draw a circle with center (x,y) and third parameter specifies the radius of the circle. The code given below draws a circle.

Declaration :- void circle(int x, int y, int radius);

#### **iii) Getmaxx function:**

getmaxx function returns the maximum X coordinate for current graphics mode and driver.

Declaration :- int getmaxx();

## **Other Header Files Used:**

- **<stdio.h>:**

The C programming language provides many standard library functions for file input and output. These functions make up the bulk of the C standard library header <stdio.h>. The I/O functionality of C is fairly low-level by modern standards; C abstracts all file operations into operations on streams of bytes, which may be "input streams" or "output streams". Unlike some earlier programming languages, C has no direct support for random-access data files; to read from a record in the middle of a file, the programmer must create a stream, seek to the middle of the file, and then read bytes in sequence from the stream.

Stdio.h functions used in our project:

- Sprint
- If/else
- Break
- While
- Struct

- **<conio.h>:**

conio.h header used in c programming contains functions for console input/output. Some of the most commonly used functions of conio.h are clrscr, getch, getche, kbhit etc.

Functions of conio.h can be used to clear screen, change color of text and background, move text, check if a key is pressed or not and many more. conio.h file is provided by Borland turbo c compiler and GCC compiler doesn't support it.

Conio.h functions used in our project:

- clrscr
- getch
- kbhit

## PROGRAM CODE

```
#include<graphics.h>

#include<stdio.h>

#include<conio.h>

void main()

{

int gd=DETECT,gm,i,a;

initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");

for(i=0;i<600;i++)

{

line(50+i,405,100+i,405);

line(75+i,375,125+i,375);

line(50+i,405,75+i,375);

line(100+i,405,125+i,375);

line(150+i,405,100+i,345);

line(75+i,375,75+i,370);

line(70+i,370,80+i,370);

line(80+i,345,100+i,345);

circle(150+i,405,30);

circle(50+i,405,30);

line(0,436,getmaxx(),436);

delay(10);
```

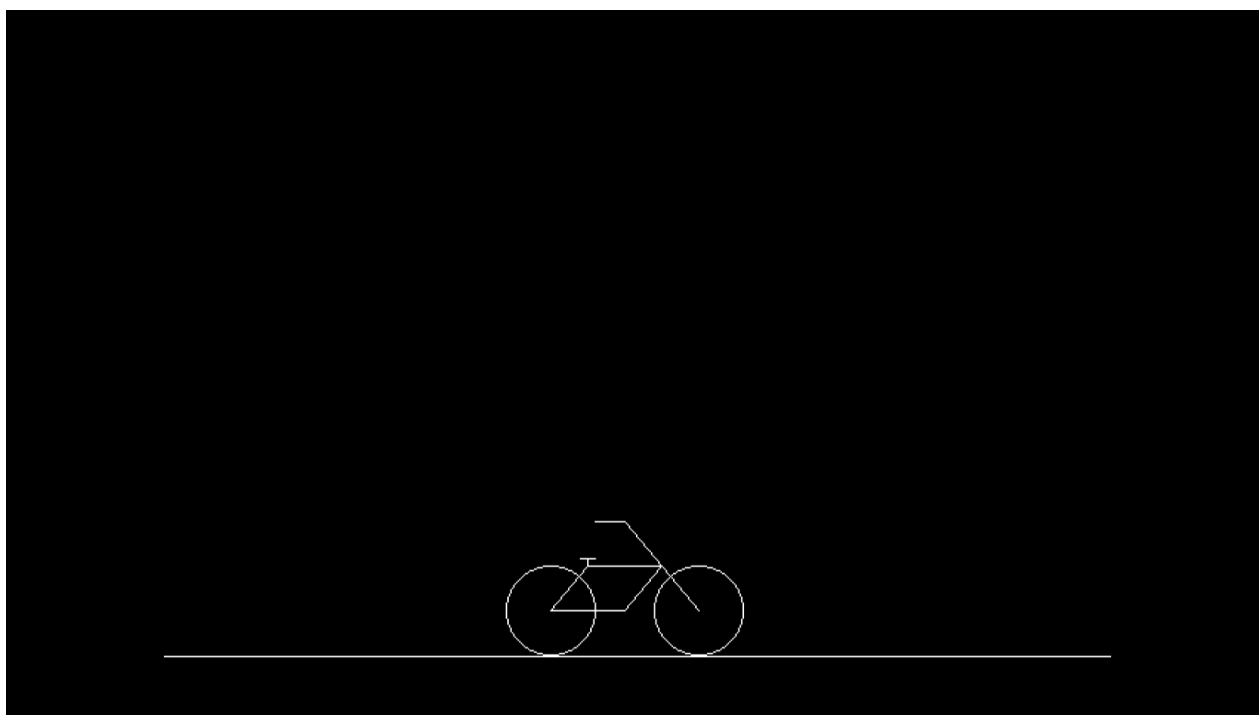
```
cleardevice();
```

```
}
```

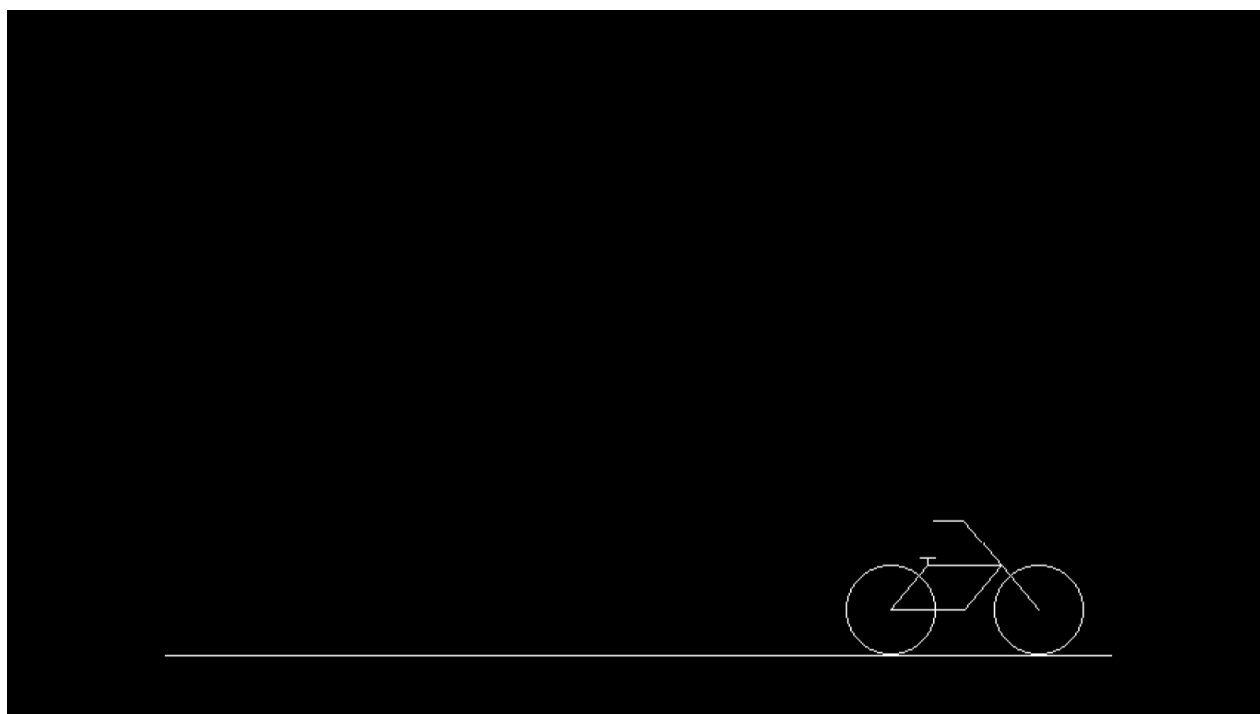
```
getch();
```

```
closegraph();
```

## PROGRAM OUTPUT







## CONCLUSION

This project is one of the sample project on Computer Graphics. Though many difficulties were faced during the project as well as many errors occurred, we became succeed to compile and run the program. There may be some limitations on this project as well, so, in the near future we would like to be hopeful in further improvements. We are highly obliged to all helping hands and to all inspirations to make this project successful. Well this project will be applicable to most of all. As well as, we are more hopeful for more advice, new ideas and inspiration to make more other projects.

We had tried our best to include each and every basic features of graphics in our projects. We aimed it to be an interfacing application to the real world that means our project must not be an project for any examination but also applicable for real world use. We have able to give some benefits to the disability. It somehow makes our life easier in this or that way. From this very project we were able to achieve various knowledge in computer graphics and also in logical coding. We refresh our knowledge in C Programming. Moreover we also gained an experience of group work, team coordination. We learned how team work is very much important in engineering field.

## REFERENCES

- Donald, Hearn. Computer Graphics. Pearson Education: 2005, Pearson Education.
- [www.learnstreet.com](http://www.learnstreet.com)
- <http://www.sourcecodesworld.com/>

