MINI PROJECT

Academic year 2021-22

COMPUTER GRAPHICS

SEM III

Title: A Man Walking in the Rain with an Umbrella

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Abstract: -

This report has been prepared to the **"A Man Walking in the Rain with an umbrella".** This document is the final report of the findings and recommendations of the Computer Graphics Mini Project. Computer graphics remains one of the most exciting and rapidly growing computer fields. Computer graphics has now become a common element in user interfaces, data visualization, television commercial, motion pictures, and many-many other applications. With the advantages of Graphics, modern subject, we can be able to design different applications and tools which can be beneficial in our daily life. Besides, some entertaining applications can also be designed using Graphics such as Games, Photo Effects etc. Many people have contributed to this project in variety of ways. To all of them we would like to express our appreciation. We are trying to apply the Graphics applications on designing a Man Walking in the Rain. It will display give the Rain, an umbrella and a man walking.

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 designated A Man Walking in the Rain. The Graphic Designated Walking Man and Rain are made with the application of Graphics codes. This project applied the subject and made the graphics with the image and video editing.

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) Setcolor function:

In Turbo Graphics each color is assigned a number. Total 16 colors are available. Strictly speaking number of available colors depends on current graphics mode and driver. For Example :- BLACK is assigned 0, RED is assigned 4 etc. setcolor function is used to change the current drawing color.e.g. Setcolor (RED) or setcolor(4) changes the current drawing color to RED. Remember that default drawing color is WHITE.

Declaration: - void setcolor (int color);

iv) Outtextxy function:

Outtextxy function display text or string at a specified point(x, y) on the screen.

Declaration: - void Outtextxy (int x, int y, char *string);
x, y are coordinates of the point and third argument contains the address of string to be displayed.

v) Getmaxx function:

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

Declaration:-int getmaxx ();

vi) Getmaxy function:

getmaxy function returns the maximum Y coordinate for current graphics mode and driver.

Declaration:- intgetmaxy();

vii) Setlinestyle function:

Setlinestyle function sets line style, thickness, unsigned upattern etc.

Declaration: - void setlinestyle (intlinestyle, unsigned upattern, int thickness);

viii) Putpixel function:

putpixel function plots a pixel at location (x, y) of specified color.

Declaration: - void putpixel (int x, int y, int color);

For example if we want to draw a GREEN color pixel at (35, 45) then we will write putpixel (35, 35, GREEN); in our c program, putpixel function can be used to draw circles, lines and ellipses using various algorithms.

ix) Setfillstyle function:

setfillstyle function sets the current fill pattern and fill color.

Declaration: - void setfillstyle (int pattern, int color);

Other Header Flies 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.

<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.

<math.h>:

Math.h header file (<math.h>) of c programming language contains constants and functions to perform mathematical operations. You can use functions of math.h in your c programs to calculating absolute value of a number, calculating logarithms and using trigonometric functions to calculate sine, cosine of an angle.

<dos.h>:

dos.h header file of c language contains functions for handling interrupts, producing sound, date and time functions etc. It is borland specific and works in turbo c compiler.

Requirement analysis: -

- Hardware Requirements:

Sr. No.	Name of Resource/material	Specifications
1	Hardware computer system	Computer (i3-i5 preferable), RAM minimum 8 GB
2	Hard disk	Minimum 128 GB

- Software Requirements:

Sr. No.	Name of Resource/material	Specifications
1	Notepad	Pre-built in Windows10
2	Turbo C++	3.7.8.9

Implementation: -

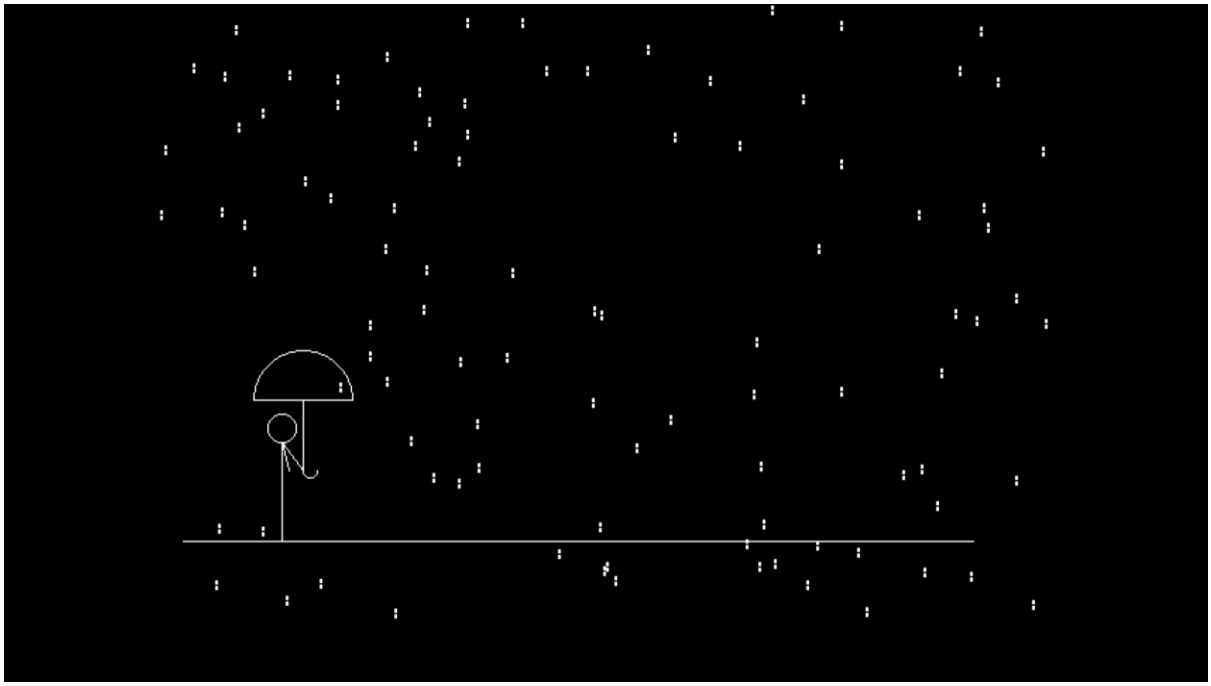
```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<stdlib.h>
#include<dos.h>
void main()
{
int gd=DETECT,gm;
int rhx,rhy,j,i;
clrscr();
initgraph(&gd,&gm,"C://TURBOC3//BGI");
for(i=0;i<500;i+=5)
{
line(20,380,580,380); //platform
```

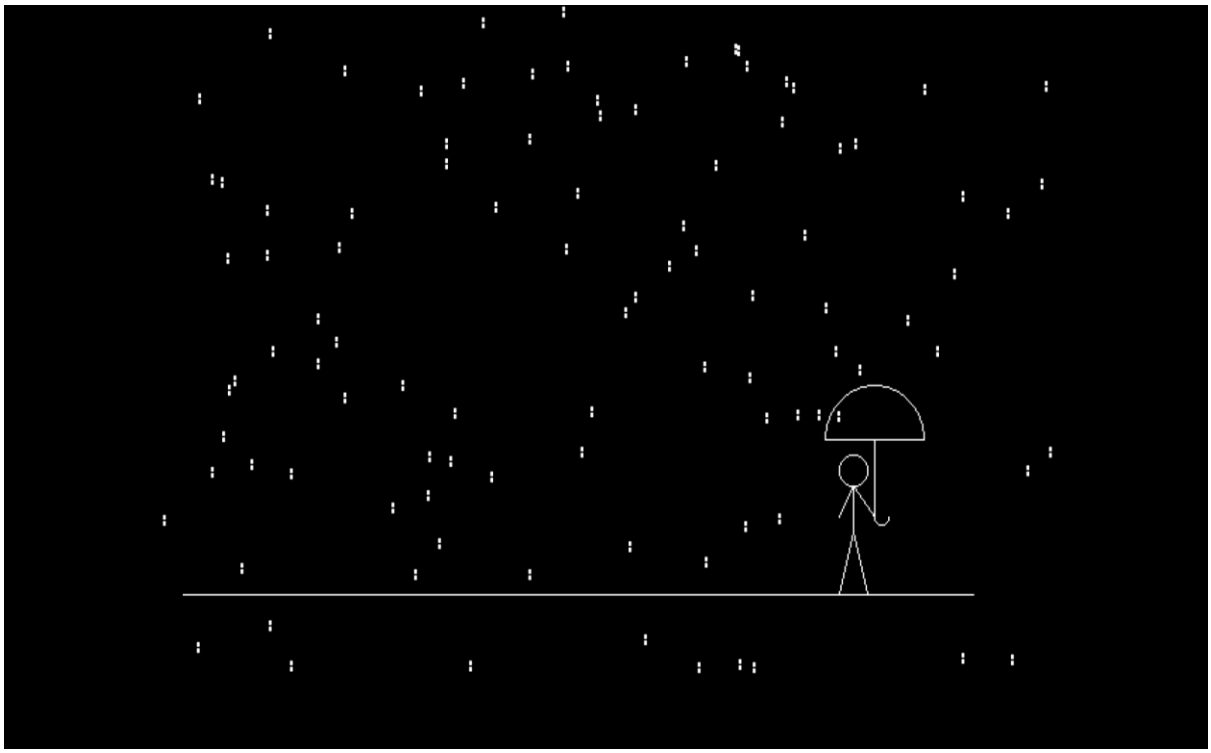
```
if(i%2==0)
{
line(25+i,380,35+i,340); //leftleg
line(45+i,380,35+i,340);//right leg
line(35+i,310,25+i,330);//left hand
delay(20);
}
else
{
line(35+i,380,35+i,340);
line(35+i,310,40+i,330);
delay(20);
}

line(35+i,340,35+i,310); //body
circle(35+i,300,10); //head
line(35+i,310,50+i,330); // hand
line(50+i,330,50+i,280); //umbrella stick
line(15+i,280,85+i,280); //umbrella right

arc(50+i,280,0,180,35); //umbrella body
arc(55+i,330,180,360,5);//umbrella handle
rhx=getmaxx();
rhy=getmaxy();
for(j=0;j<100;j++)
{
outtextxy(random(rhx),random(rhy-50),"|");
setcolor(WHITE);
}
delay(150);
cleardevice();
}
getch();
}
```

Output:-





Conclusion:

This project is our Mini Project for 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.

To 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 a 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.