STATISTICAL DATA

A Project Submitted during 1st Year 2nd Semester in may 2019 using C-Graphic at:

Vidya Jyothi Institute of Technology

Submitted by:

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Subject : Programming and Problem Solving -II (PPS-II)

Developed under the guidance of :

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Content

Introduction:

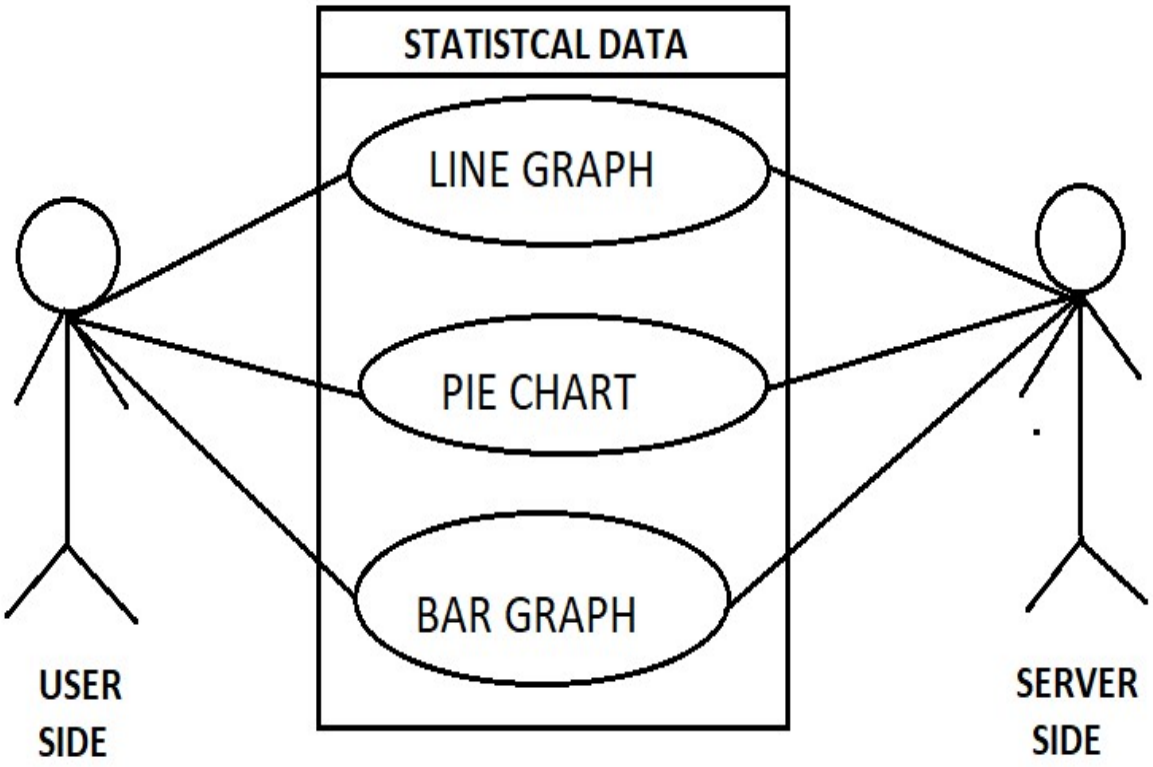
This project is prototype of student data analysis. It has options like Bar graph, Line graph, Pie chart. This project is made by using C-GRAPHICS language. We have used simple printf, scanf statements, if-else statements and control loops in user interface window and functions of c-graphics in graphic window. Our program is short, effective and user friendly. We have designed our program in such a way that,it is very easy to understand and handle by any programmer.

The student data analysis provides the client or organization to know the performance of the student in various subjects. This is achieved by developing a small application using c language along with <graphics.h> library (c graphics). When the product is implemented, the user or the organization who uses this product will be able to see the graphical representation of performance of a specific student or group of students, which will help in better understanding of the performance performed by the student.

This product represents student's data in terms of line graph (or) bar graph (or) pie chart as selected by the user. To develop this student data analysis system, the entire operation has been divided into the following parts:

1. Line graph
2. Pie chart
3. Bar graph

The use case diagram for statistical data:-



FUNCTIONS USED:

- **circle(int x, int y, int radius);**

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

- **line();**

  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.

- **Initgraph();**

  Which specify the exact position of representation

- **Initwindow();**

  Which opens the new window

- **Setcolor();**

  Which sets the color to the given type ,it is based on enumerated data

- **Outextxy();**

  x, y are coordinates of the point and third argument contains the address of string to be displayed.

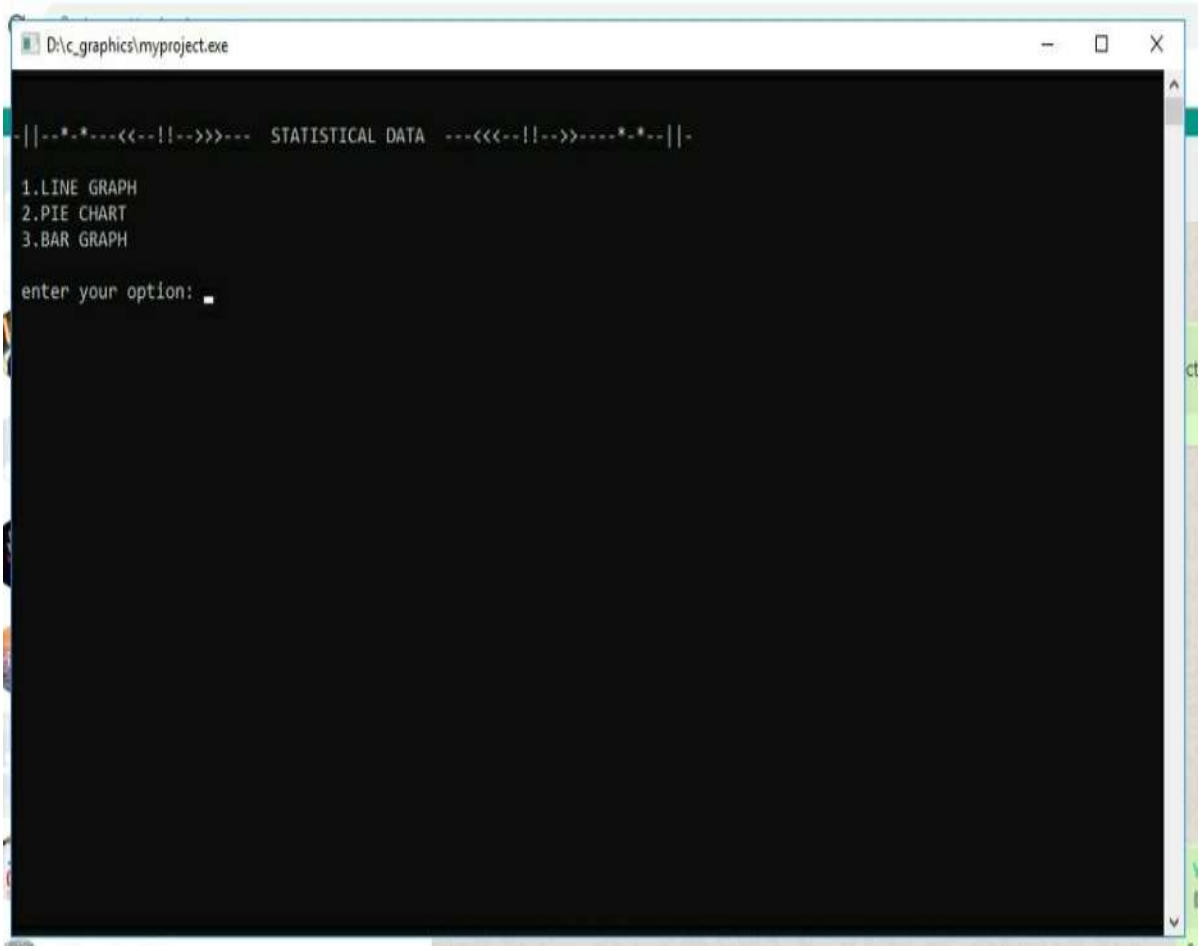
The code:-

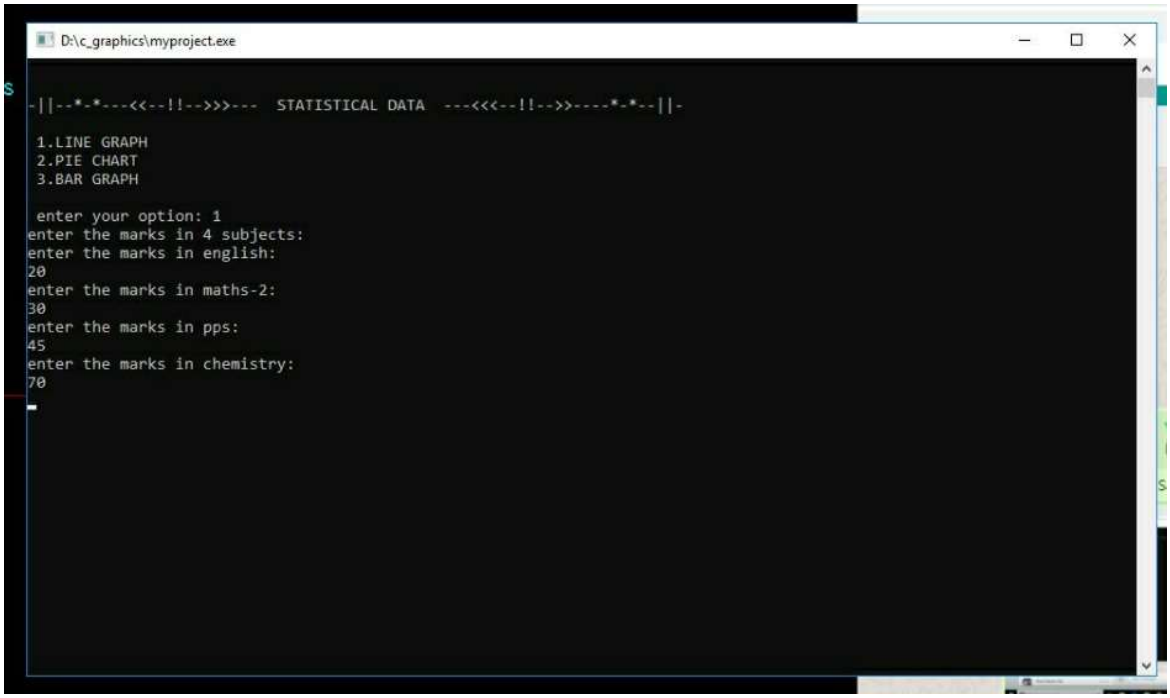
```
#include<graphics.h>
#include<conio.h>
int main()
{
 int k;
 printf("\n\n-||------<<--!!-->>>---  STATISTICAL DATA  ---<<<--!!-->>-------||-\n\n");
 printf(" 1.LINE GRAPH \n 2.PIE CHART \n 3.BAR GRAPH\n\n enter    your     option: ");
 scanf("%d",&k);
 if(k==1)
{
/*-----------------line graph-------------*/
 int gd = DETECT, gm;
 int x,y,z,a,b;
 printf("enter the marks in 4 subjects:\n");
 printf("enter the marks in english:\n");
 scanf("%d",&x);
 printf("enter the marks in maths-2:\n");
 scanf("%d",&y);
 printf("enter the marks in pps:\n");
 scanf("%d",&z);
 printf("enter the marks in chemistry:\n");
 scanf("%d",&a);

// initgraph(&gd, &gm, " ");
initwindow(800,700, "LINE_GRAPH ");
settextstyle(SANS_SERIF_FONT,HORIZ_DIR,2);
setcolor(13);
outtextxy(275,15,"--->>>-%-|-|-LINE GRAPH-|-|-%-<<<----");
setcolor(3);
line(50,100,50,350);
outtextxy(10,60,"marks");

setcolor(4);
line(40,340,390,340);
outtextxy(75,350,"semister");
setcolor(15);
  circle(100,250-x,6);
  line(100,250-x,120,250-y);
  circle(120,250-y,6);
  line(120,250-y,170,250-z);
  circle(170,250-z,6);
   line(170,250-z,200,250-a);
   circle(200,250-a,6);
```

```
  getch();
  closegraph();
}
/*----------------------pie chart----------------------*/
else if(k==2){
int gd = DETECT, gm, midx, midy;
initgraph(&gd, &gm, "PIE__CHART");
int a,b,c,d,e,ap,bp,cp,dp,ep;
printf("\n\nconsider 60 student and enter \n A. no.of students who got <=50%\n
B. no.of students who got between (50 to 60)% \n C. no.of students who got between (60
to 75)%\n D. no.of students who got between (75 to 85)%\n E.no.of students who got
between above 85%\n");

scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);

 ap=(a*360)/60;
 bp=(b*360)/60;
 cp=(c*360)/60;
 dp=(d*360)/60;
 ep=(e*360)/60;
  setcolor(MAGENTA);
  rectangle(0,40,639,450);
  settextstyle(SANS_SERIF_FONT,HORIZ_DIR,2);
  setcolor(WHITE);
  outtextxy(275,10,"----->>>Pie Chart<<<----");
  midx = getmaxx()/2;
  midy = getmaxy()/2;
  setfillstyle(LINE_FILL,10);
  pieslice(midx, midy, 0,ap,100);
  setfillstyle(XHATCH_FILL,RED);
  pieslice(midx, midy, ap,ap+bp, 100);
  setfillstyle(WIDE_DOT_FILL,GREEN);
  pieslice(midx, midy,ap+bp,ap+bp+cp, 100);
  setfillstyle(4,9);
  pieslice(midx, midy,ap+bp+cp,ap+bp+cp+dp, 100);
  setfillstyle(5,15);
  pieslice(midx, midy,ap+bp+cp+dp,ap+bp+cp+dp+ep, 100);
  setfillstyle(LINE_FILL,10);
  bar(40,250,65,260);
  outtextxy(70,245,"A(<=50%)");
 setfillstyle(XHATCH_FILL,RED);
  bar(40,270,65,275);
  outtextxy(70,265,"B(50%-60%)");
 setfillstyle(WIDE_DOT_FILL,GREEN);
  bar(40,290,65,300);
  outtextxy(70,280,"C(60%-75%)");
```

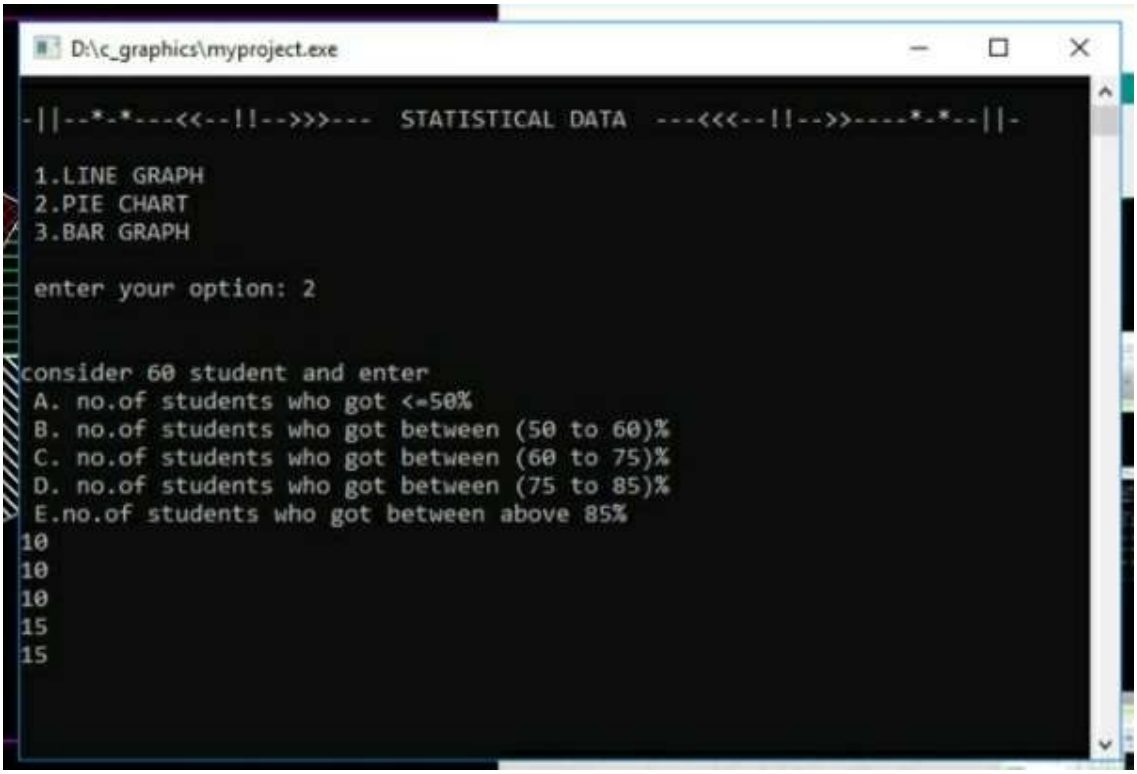
```
  setfillstyle(4,9);
   bar(40,310,65,320);
   outtextxy(70,300,"D(75%-85%)");
  setfillstyle(5,15);
   bar(40,330,65,340);
   outtextxy(70,320,"E (>=85%)");
   getch();
 }
/*------------bar graph-------------------------------------*/
else if(k==3)
{
 int i,n,a,b;
int graphdriver = DETECT, graphmode;
 //initgraph(&graphdriver, &graphmode, "BAR_GRAPH");
 initwindow(900,900,"BAR_GRAPH");
 settextstyle(SANS_SERIF_FONT,HORIZ_DIR,2);
setcolor(13);
 outtextxy(275,10,"----->>>---!!!---BAR GRAPH---!!!---<<<----");
printf("ENTER THE NUMBER OF DATA ELEMENTS\n");
scanf("%d",&n);
line(1,1,1,479);// Y axis
line(1,479,1000,479);// X axis
for(i=1;i<=35;i++)
{
outtextxy(40*i,470,"|");
outtextxy(1,479-40*i,"-");
}
printf("ENTER X AND Y CO-ORDINATES \n");
for(i=1;i<=n;i++)
{
scanf("%d %d",&a,&b);
b--;
setfillstyle(7,RED);
bar(a*40,478,a*40+37,430-b*40);
}
getch();
closegraph();
}
else
    {
       printf("\n enter a valid option \n");
    }
  return 0;
}
```

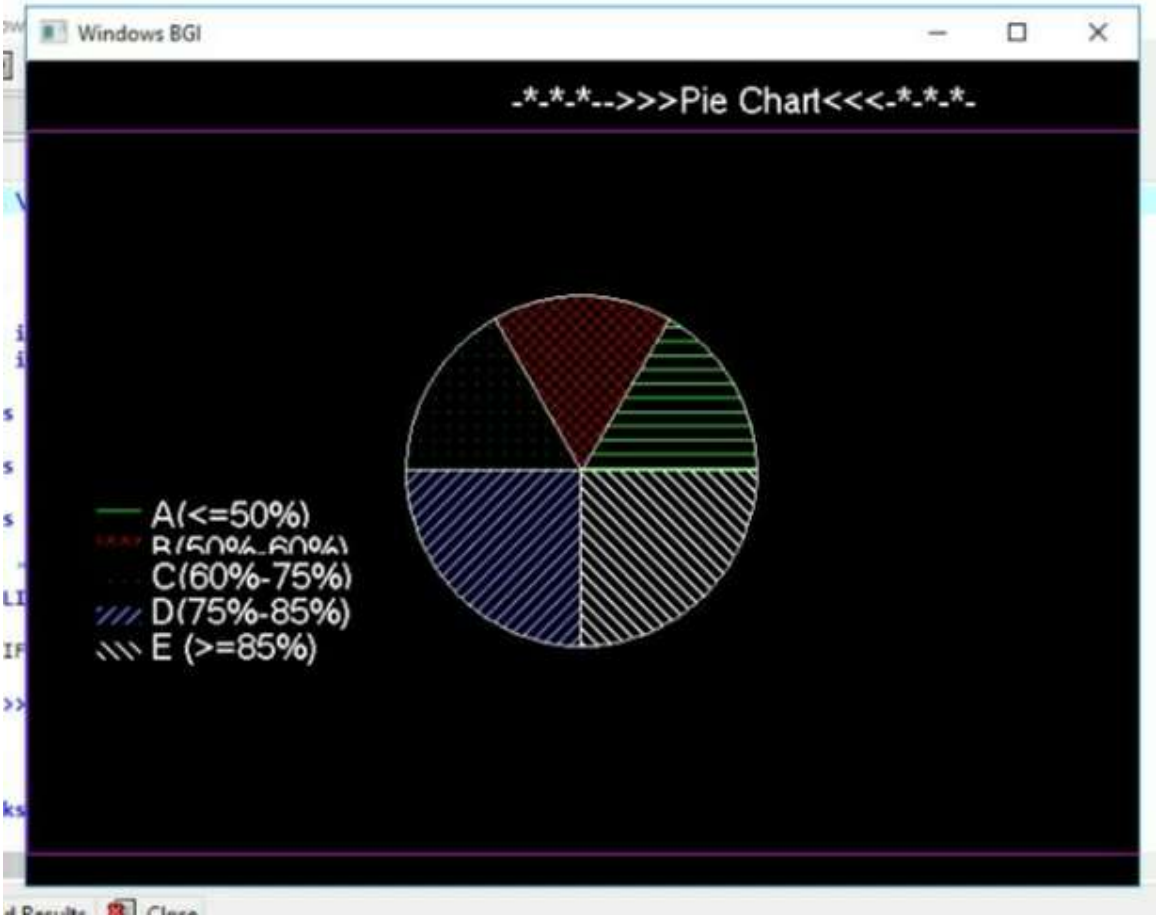
OUTPUT SCREENS:

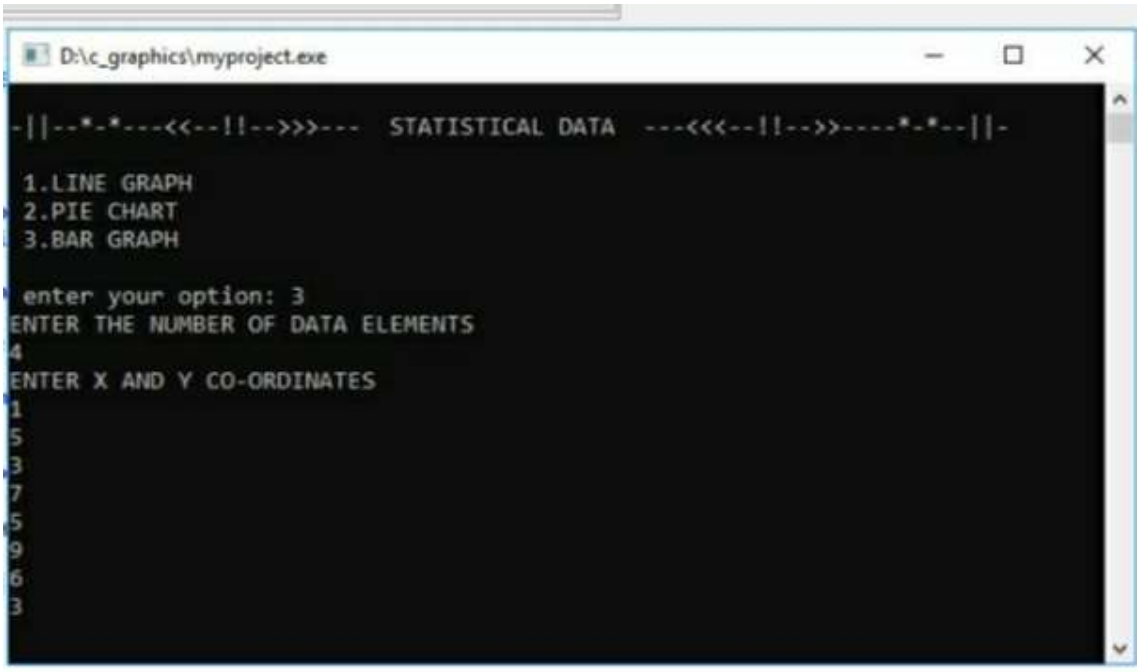


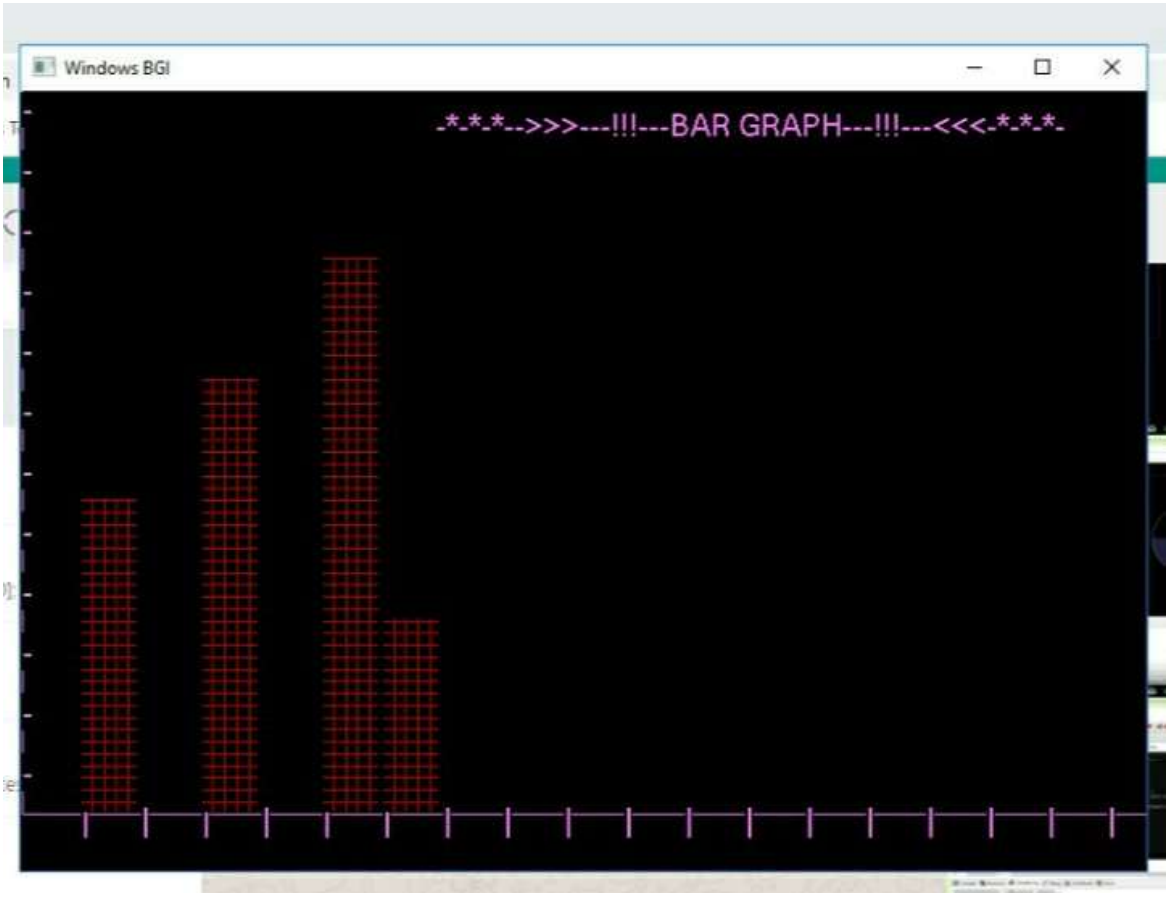

D:\c_graphics\myproject.exe
-||--*-*---<<--!!-->>>--- STATISTICAL DATA ---<<<--!!-->>----*-*--||-
1.LINE GRAPH
2.PIE CHART
3.BAR GRAPH
enter your option: 1
enter the marks in 4 subjects:
enter the marks in english:
20
enter the marks in maths-2:
30
enter the marks in pps:
45
enter the marks in chemistry:
70


Windows BGI
--->>>-%-|-|-LINE GRAPH-|-|-%-<<<----
marks
semister


D:\c_graphics\myproject.exe
-||--*-*---<<--!!-->>>--- STATISTICAL DATA ---<<<--!!-->>----*-*--||-
1.LINE GRAPH
2.PIE CHART
3.BAR GRAPH
enter your option: 2
consider 60 student and enter
A. no.of students who got <=50%
B. no.of students who got between (50 to 60)%
C. no.of students who got between (60 to 75)%
D. no.of students who got between (75 to 85)%
E.no.of students who got between above 85%
10
10
10
15
15


Windows BGI
-*-*-*-->>>Pie Chart<<<-*-*-*-
A(<=50%)
C(60%-75%)
D(75%-85%)
E (>=85%)


D:\c_graphics\myproject.exe
-||--*-*---<<--!!-->>>--- STATISTICAL DATA ---<<<--!!-->>----*-*--||-
1.LINE GRAPH
2.PIE CHART
3.BAR GRAPH
enter your option: 3
ENTER THE NUMBER OF DATA ELEMENTS
4
ENTER X AND Y CO-ORDINATES
1
5
3
7
5
9
6
3


Windows BGI
-*-*-*-->>>---!!!---BAR GRAPH---!!!---<<<-*-*-*-

Conclusion :

By doing this project our team learned a lot about programming, solving a real life problems. It was a great opportunity for our team do this project. It extend our skills of programming and logical thinking. We also learnt how to organise things in a project so that it is ready for presentation. The project outcome was better than we expected and it is almost completed. we are only left with some more options that user can have for better handling of our program.