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# Computer graphics

Computer graphics is an art of drawing pictures, lines, charts etc. Using computer with the help of programming computer graphics is made up of number of pixels.

Computer graphics is a use of hardware and software to create manipulate & present picture & image.

## graphics.h

The graphics.h header file provide access to a simple graphics library that makes it possible to draw line, rectangle, ovals, arcs, polygons, image and strings.

## initgraph

Initgraph is used to initialize the graphical system by loading graphics driver from disk and thereby putting the system into graphics mode.

```
initgraph(&gm, &gd, "Path");
```

## Graph Driver

Graph driver is the integer that which graphics driver is to be used. It is a pointer to an integer specifying the graphics driver to be used. In all our program use will DETECT macro of graphics.h library that instruct compiler for auto detection of graphics driver.

## Graphics Mode

It is a pointer to an integer that specifies the graphics mode to be used. If \*graphics mode gdriver is set to the highest resolution sets \*gmode to the highest resolution available for the detected driver.

## Driver Directory Path

That specifies the directory path where graphics driver files (BGI files) are located. If directory both is not provided then it will search for driver file in current working directory.

## closegraph

closegraph de-allocate all memory allocated by the graphic system then restore the screen to the mode it was in before you called initgraph.

output

### Program - 01

// WAP to use putpixel function.

Syntax :-

putpixel(x, y, COLOR);

Input :-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    clrscr();
    initgraph(&gd, &gm, " ");
    putpixel(100, 200, RED);
    closegraph();
    getch();
}
```

output -

→ Output is available  
at graduation site  
(Chennai, TN)  
  
→ (2012) 2nd year  
→ (2012) 3rd year  
→ (2012) 4th year  
→ (2012) 5th year  
→ (2012) 6th year  
→ (2012) 7th year  
→ (2012) 8th year  
→ (2012) 9th year  
→ (2012) 10th year

### Program-02

// WAP to draw a line using line function

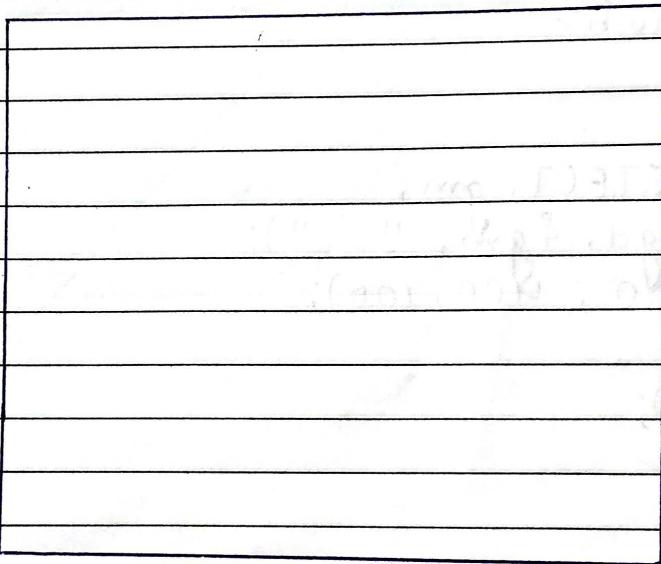
Syntax : line(x<sub>1</sub>, y<sub>1</sub>, x<sub>2</sub>, y<sub>2</sub>)

Input :

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    line(100, 100, 400, 100);
    getch();
    closegraph();
}
```

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output



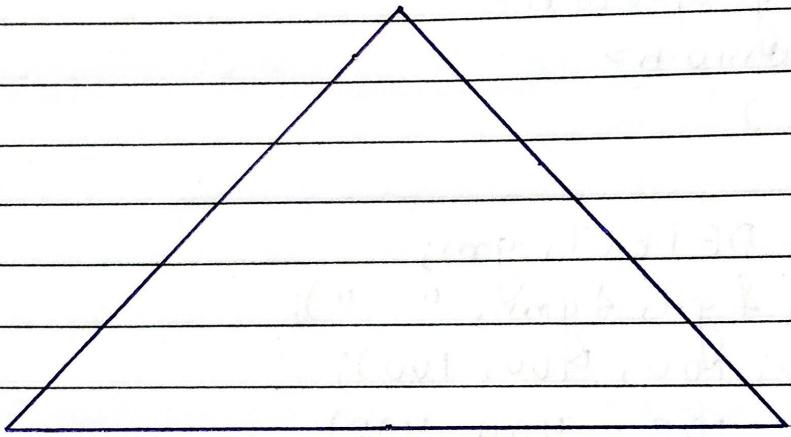
### Program-03

// WAP to draw a rectangle using line function.

input →

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    line (100, 100, 400, 100);
    line (400, 100, 400, 400);
    line (400, 400, 100, 400);
    line (100, 400, 100, 100);
    getch();
    closegraph();
}
```

output



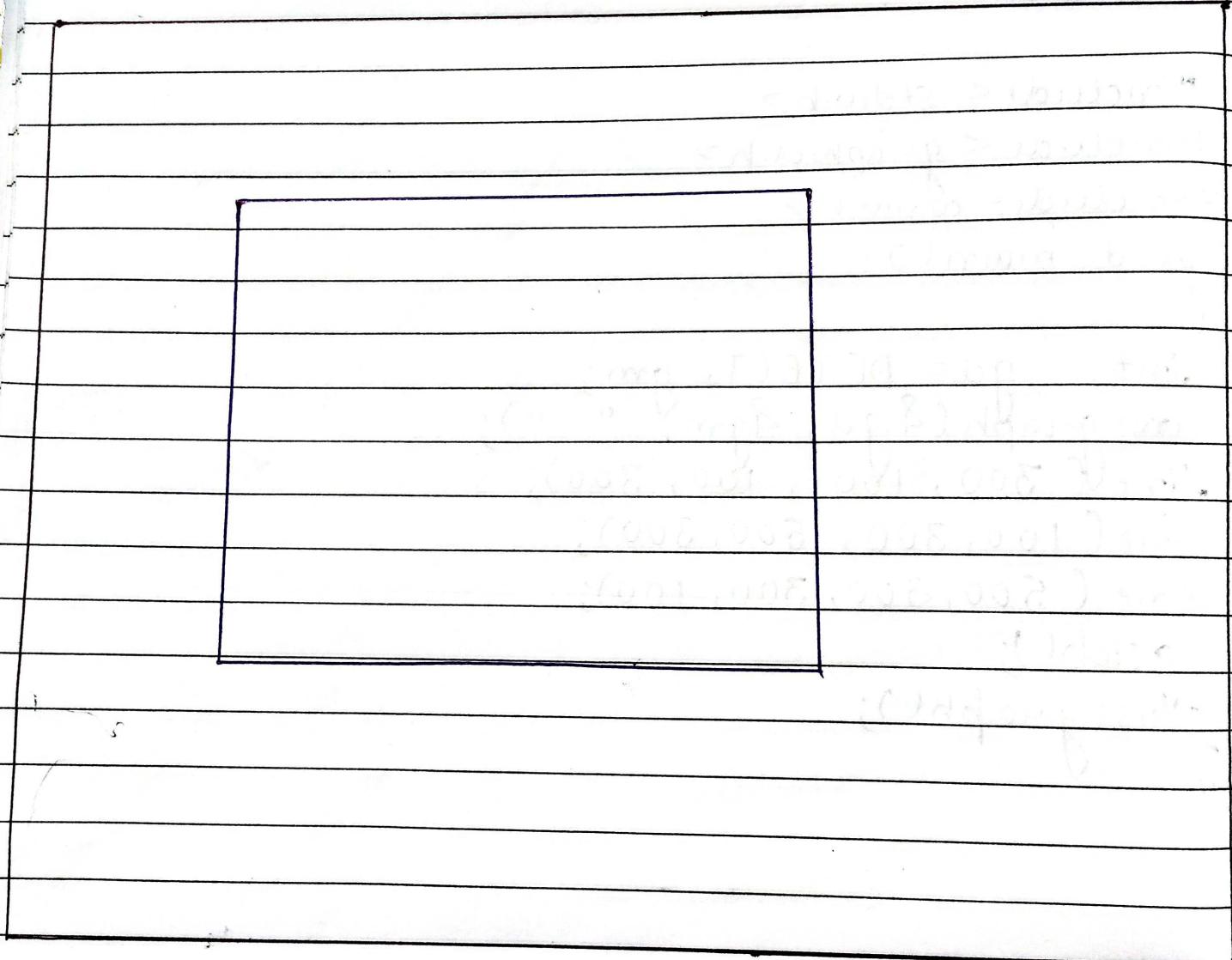
### Program-04

WAP to draw triangle using line function.

input →

```
#include < stdio.h >
#include < graphics.h >
#include < conio.h >
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    line(300, 100, 100, 300);
    line(100, 300, 500, 300);
    line(500, 300, 300, 100);
    getch();
    closegraph();
}
```

output



### Program-05

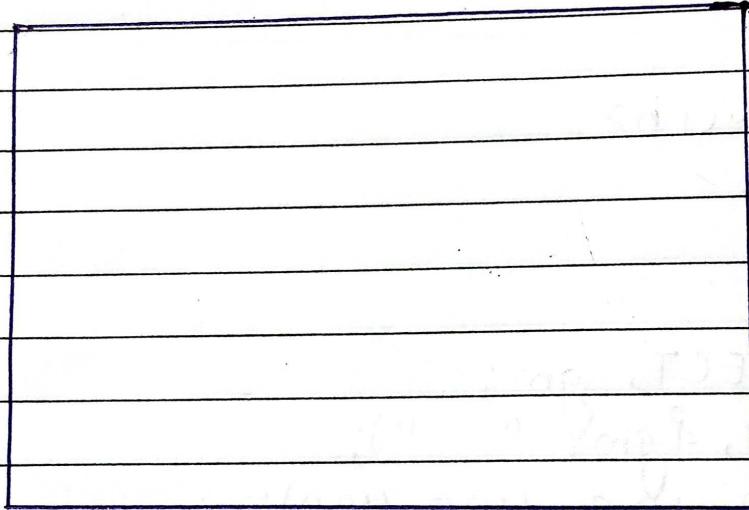
// WAP to draw square using rectangle function.

Syntax - rectangle(a,a,b,b);

Input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    rectangle(100, 100, 400, 400);
    getch();
    closegraph();
}
```

output



### Program - 06

// WAP to draw rectangle using rectangle function.

input -

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

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

```
void main()
```

```
{
```

```
int gd = DETECT, gm;
```

```
initgraph(&gd, &gm, " " );
```

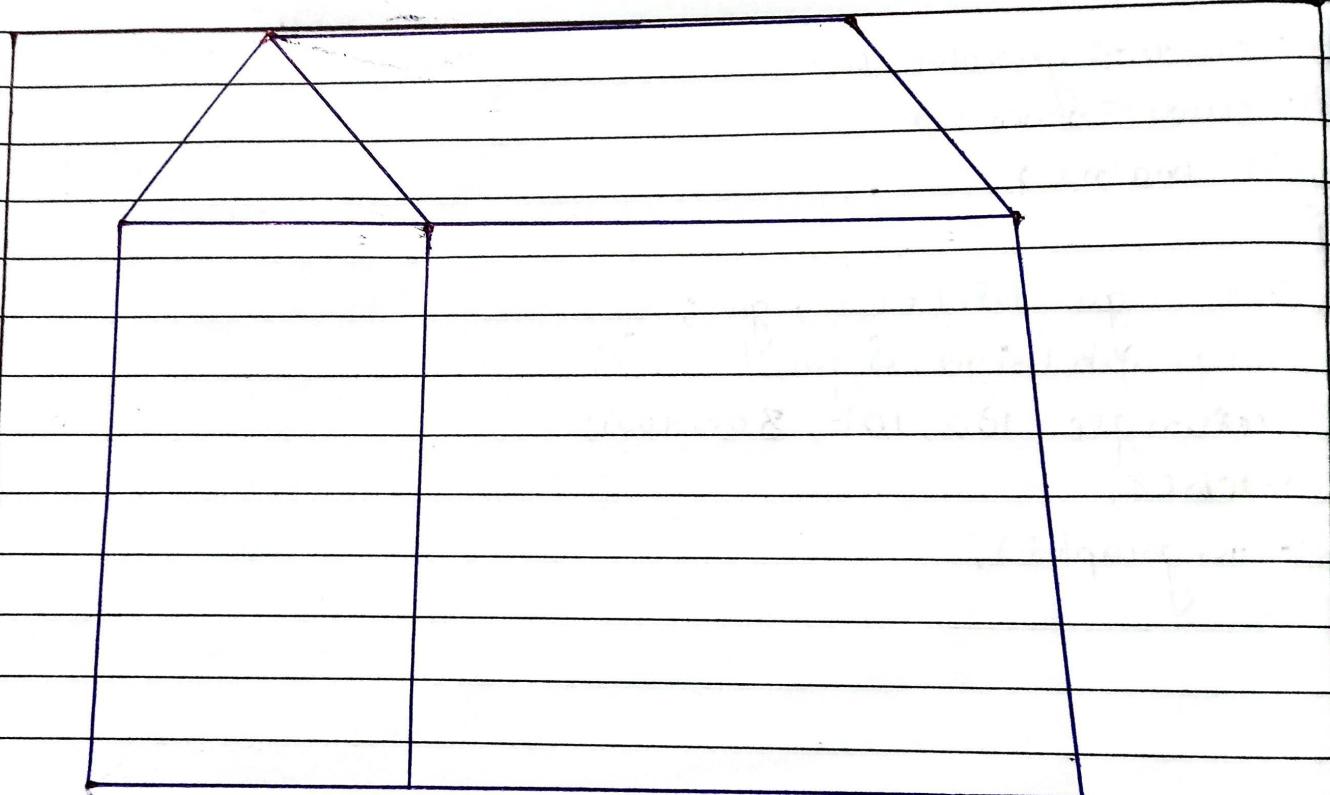
```
rectangle(100, 100, 300, 400);
```

```
getch();
```

```
closegraph();
```

```
}
```

output -



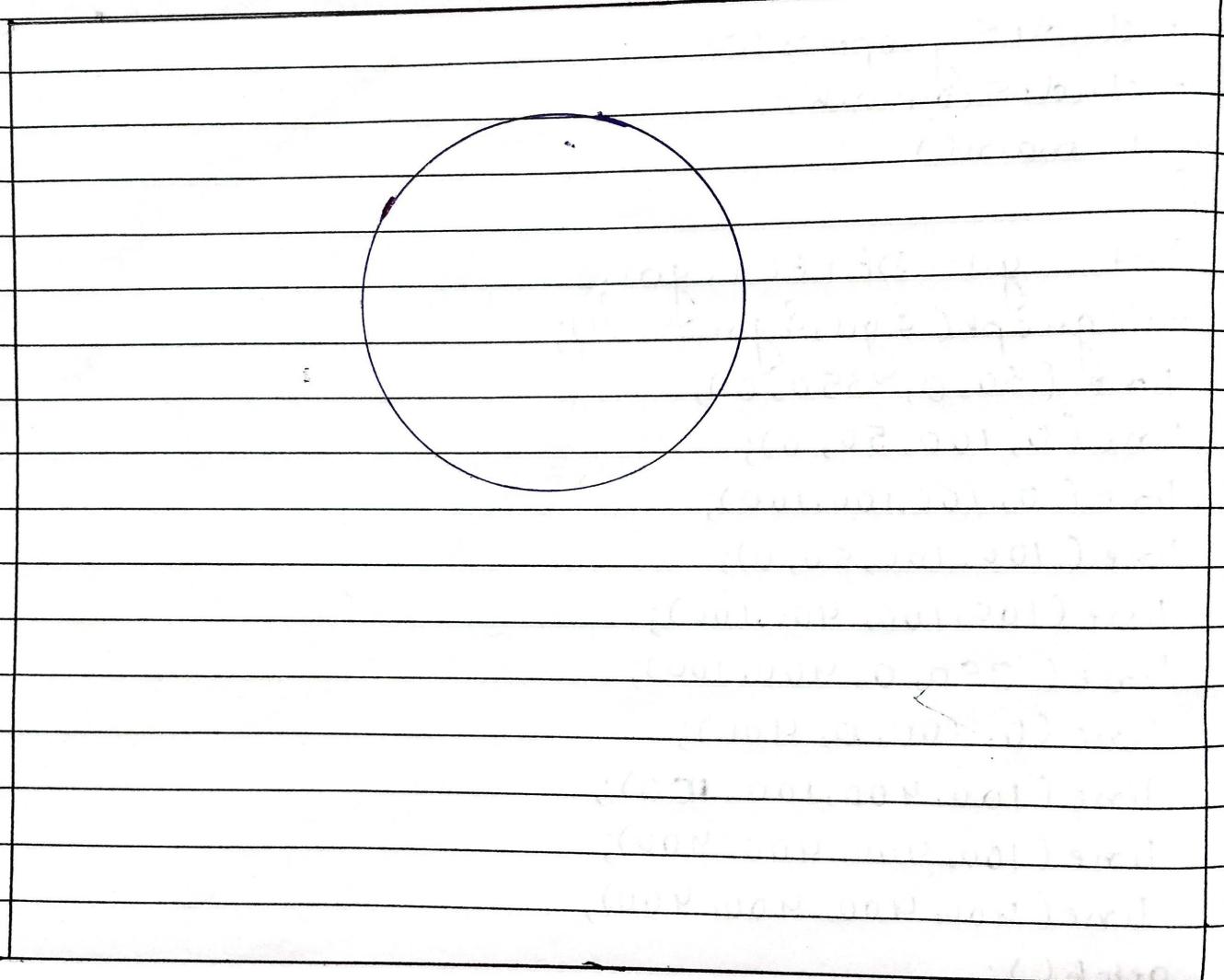
Program - 07

// WAP to draw hut using line function

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd= DETECT, gm;
    initgraph(&gd,&gm," ");
    line(50,0,350,0);
    line(0,100,50,0);
    line(0,100,100,100);
    line(100,100,50,0);
    line(100,100,400,100);
    line(350,0,400,100);
    line(0,100,0,400);
    line(100,400,100,100);
    line(100,400,400,400);
    line(400,400,400,100);
    getch();
    closegraph();
}
```

output-



### Program-08

// WAP to draw circle using circle function

Syntax - circle(x, y, radius);

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    circle(200, 200, 100);
    getch();
    closegraph();
}
```

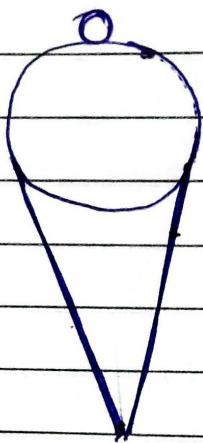
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output-



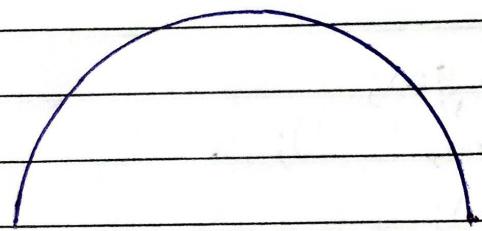
### Program - 09

11 WAP to draw softy

input:-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    circle(300, 160, 10);
    circle(300, 155, 45);
    line(300, 300, 262, 180);
    line(300, 300, 338, 100);
    getch();
    closegraph();
}
```

Output -



### Program - 10

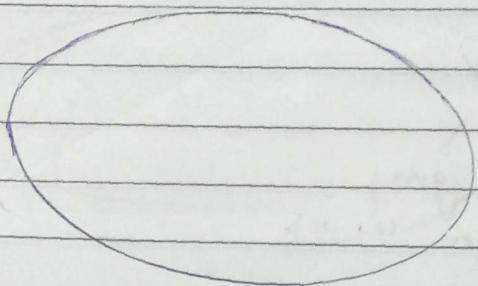
// WAP to draw arc using arc function

Syntax - arc(x, y, S-A, E-A, radius);

input -

```
#include<graphics.h>
#include<conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    arc(200, 200, 0, 180, 100);
    getch();
    closegraph();
}
```

Output -



### Program-11

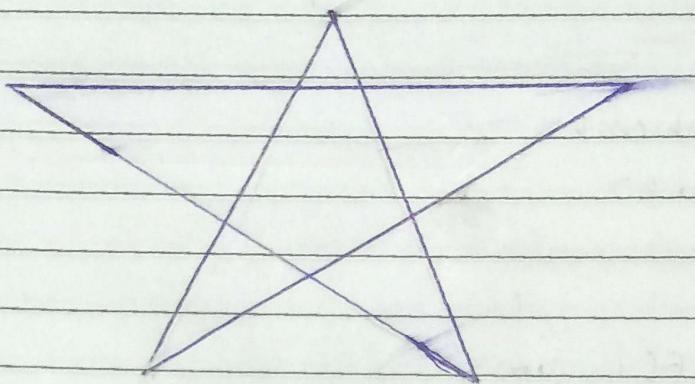
// WAP to draw ellipse using ellipse function

Syntax- ellipse(x, y, s.A, E.A,  $\theta_1$ ,  $\theta_2$ );

input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    ellipse(300, 200, 0, 360, 200, 100);
    getch();
    closegraph();
}
```

output-



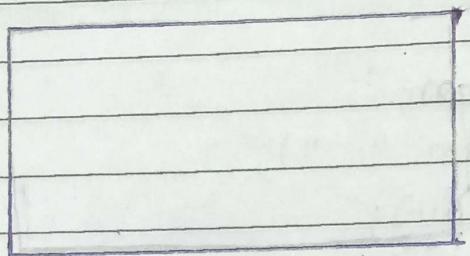
### Program-12

//WAP to draw a star using line function

input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    line(200, 50, 140, 200);
    line(200, 50, 260, 200);
    line(140, 200, 280, 120);
    line(260, 200, 120, 120);
    line(120, 120, 280, 120);
    getch();
    closegraph();
}
```

Budget



### Program - 13

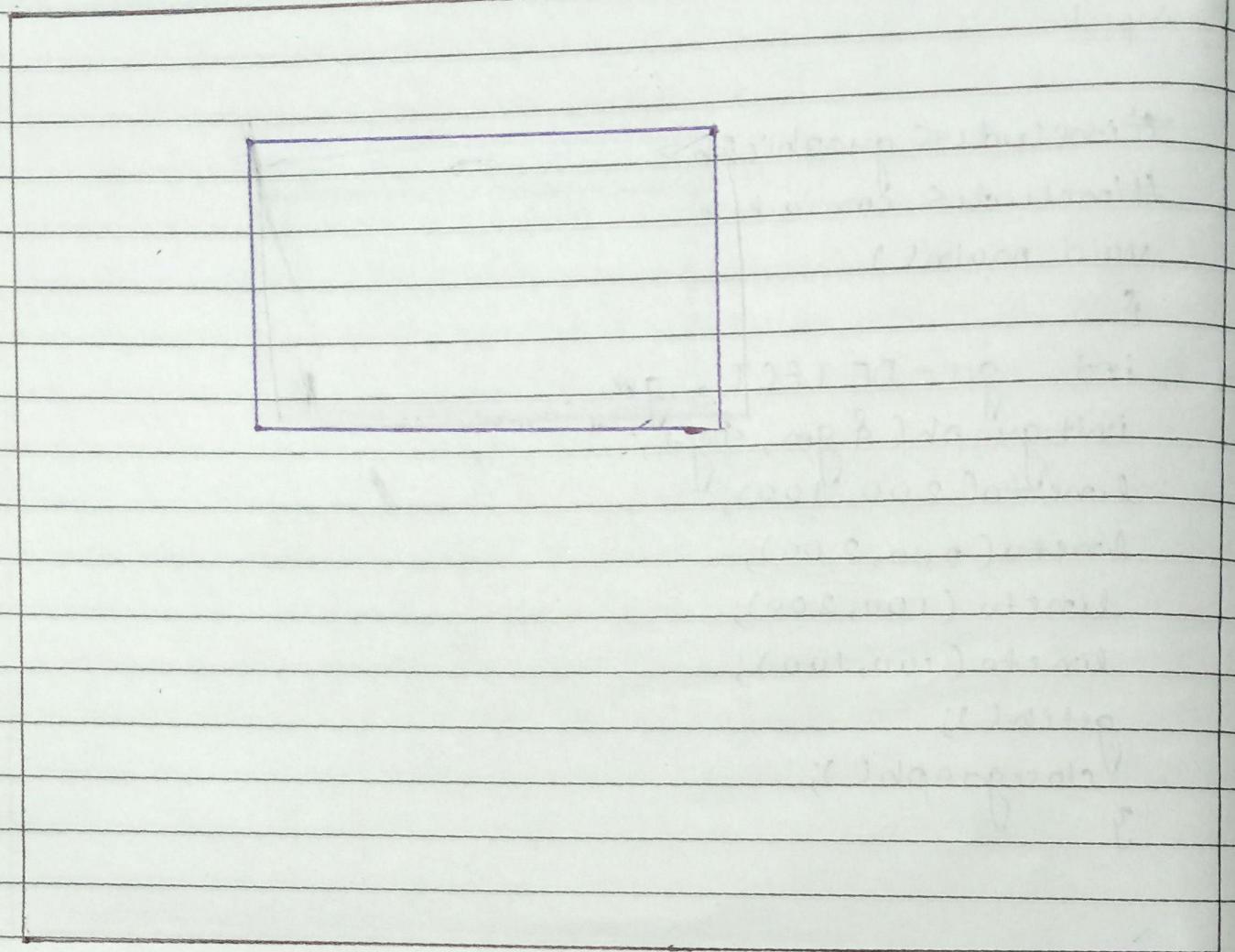
// WAP to draw rectangle using lineto function.

Syntax - lineto(x,y);

input -

```
#include < graphics.h >
#include < conio.h >
void main()
{
    int gd = DETECT, gm;
    initgraph(&gm, &gd, " ");
    lineto(200, 100);
    lineto(200, 200);
    lineto(100, 200);
    lineto(100, 100);
    getch();
    closegraph();
}
```

output -



Program - 14  
 11 WAP to use moveto function.

Syntax -

Input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    moveto(100, 100);
    lineto(200, 100);
    moveto(200, 100);
    lineto(200, 200);
    moveto(200, 200);
    lineto(100, 200);
    moveto(200, 100);
    lineto(100, 100);
    getch();
    closegraph();
}
```

output -

We are Coders

Program-15

// WAP to use outtext() function

Syntax- outtext("text");

input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    outtext("We are Coders");
    getch();
    closegraph();
}
```

1. Output-

Bhavy Sharma

Also known as

Cooler Shab

### Program-16

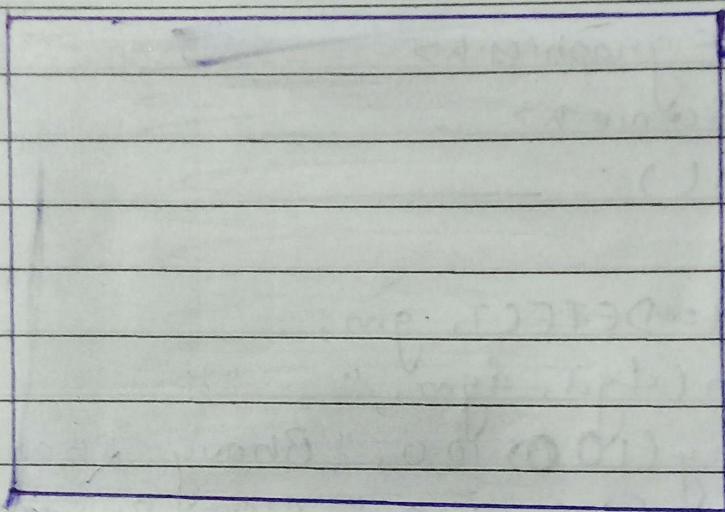
WAP to use `outtextxy()` function

Syntax - `outtextxy(x,y,"text");`

Input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    outtextxy(100, 100, " Bhavy Sharma");
    outtextxy(100, 200, " Also Known as");
    outtextxy(100, 300, " Order Shab");
    getch();
    closegraph();
}
```

Output-



### Program- 17

1) WAP to use bar() function.

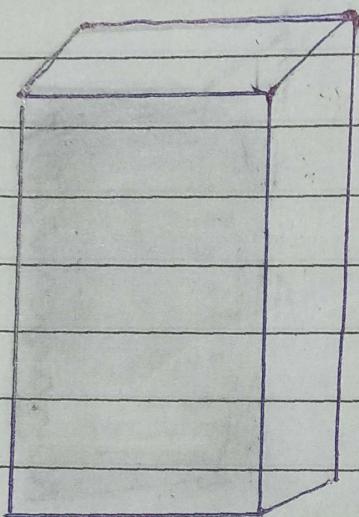
Syntax - bar(x1, y1, x2, y2);

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    bar(100, 100, 300, 300);
    getch();
    closegraph();
}
```

output-

Q1



### Program-18

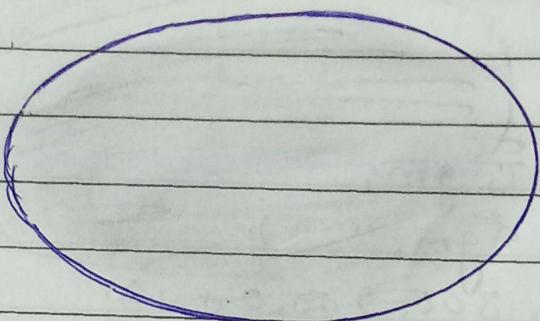
// WAP to use ~~bar3d()~~;

Syntax - bar3d(x<sub>1</sub>, y<sub>1</sub>, z<sub>1</sub>, x<sub>2</sub>, y<sub>2</sub>, depth, topflag);

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    bar3d(100, 400, 300, 200, 20, 1);
    getch();
    closegraph();
}
```

Output -



## Program - 19

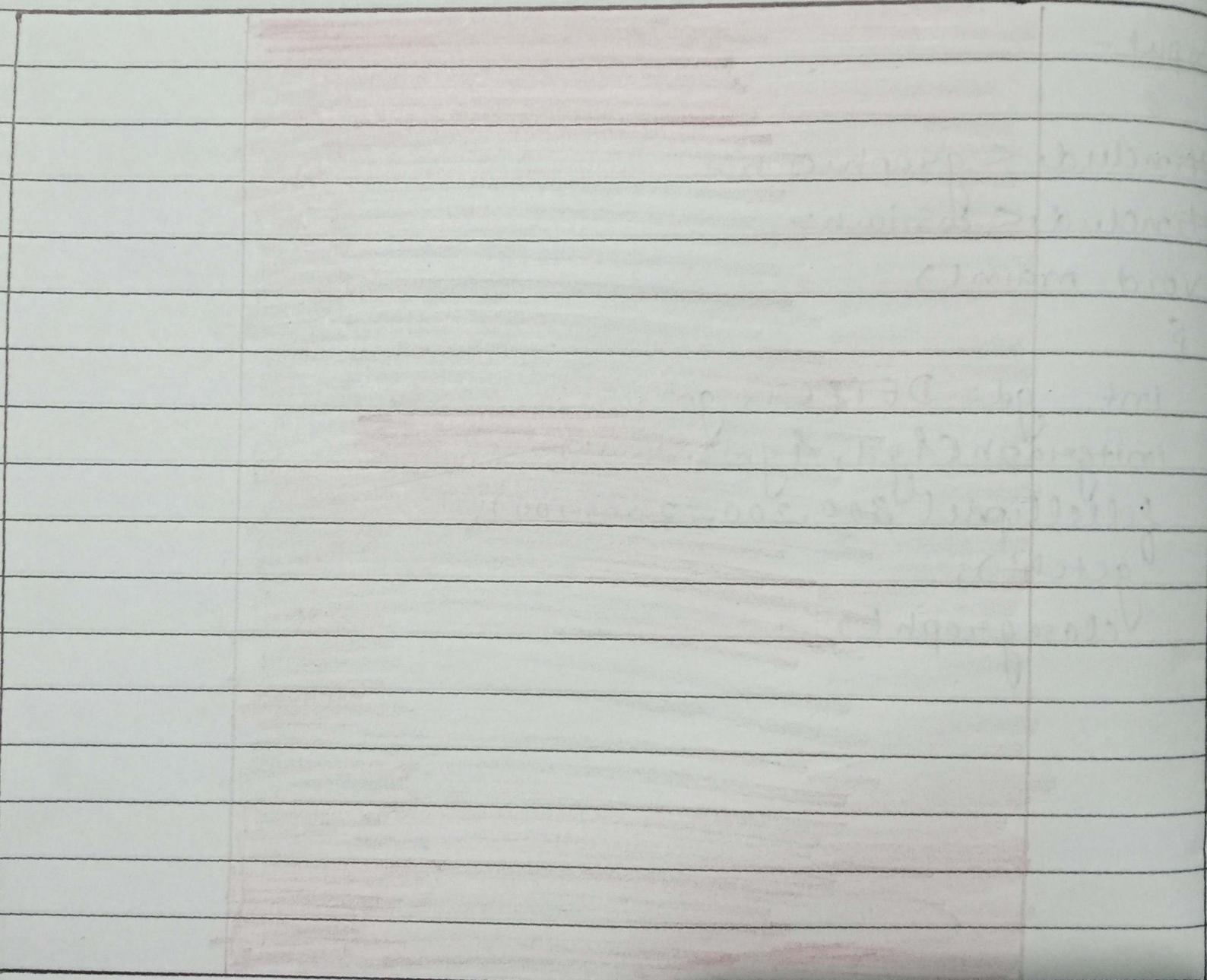
WAP to use fillellipse() function.

Syntax -

input -

```
#include <graphics.h>
#include <conio.h>
Void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    fillellipse(300, 200, 200, 100);
    getch();
    closegraph();
}
```

output



## Program - 20

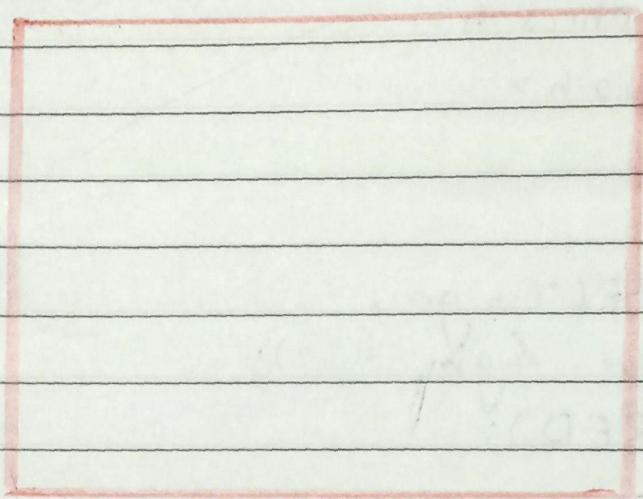
1/ WAP to use setbkcolor() function.

Syntax ~~setbkcolor~~(COLOR);

input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    setbkcolor(RED);
    getch();
    closegraph();
}
```

Output-



### Program - 21

// WAP to use setcolor function.

Syntax -  setcolor( COLOR);

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    setcolor( RED);
}
```

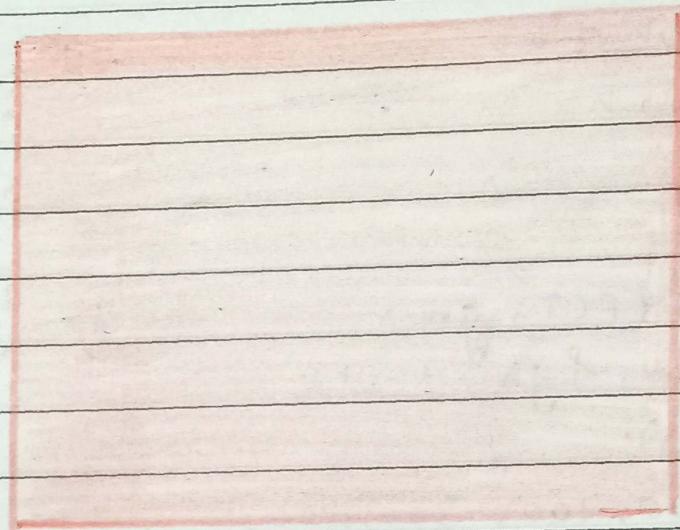
```
rectangle(100, 100, 300, 300);
```

```
getch();
```

```
closegraph();
```

3

Output-



### Program - 22

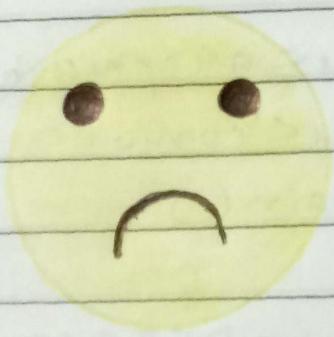
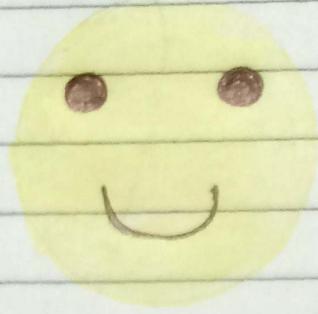
// WAP to use setfillstyle() or floodfill()  
 function.

Syntax - Setfillstyle(COLOR-PATTERN, COLOR);  
 floodfill(x, y, COLOR);

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    setcolor(RED);
    rectangle(100, 100, 300, 300);
    setfillstyle(SOLID-FILL, RED);
    floodfill(150, 150, RED);
    getch();
    closegraph();
}
```

Output -



### Program - 23

// WAP to draw happy and sad face.

input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    setcolor(YELLOW);
    circle(150, 200, 100);
    circle(450, 200, 100);
    setfillstyle(SOLID_FILL, YELLOW);
    floodfill(150, 200, YELLOW);
    floodfill(450, 200, YELLOW);
    setcolor(DARKGRAY);
    circle(100, 170, 20);
    circle(100+100, 170, 20);
    circle(100+300, 170, 20);
    circle(100+400, 170, 20);
    setfillstyle(SOLID_FILL, DARKGRAY);
    floodfill(100, 170, DARKGRAY);
    floodfill(100+100, 170, DARKGRAY);
    floodfill(100+300, 170, DARKGRAY);
    floodfill(100+400, 170, DARKGRAY);
    arc(150, 200+25, 180, 360, 40);
    arc(450, 200+65, 0, 180, 40);
    getch();
    closegraph();
}
```

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output-



## Program - 24

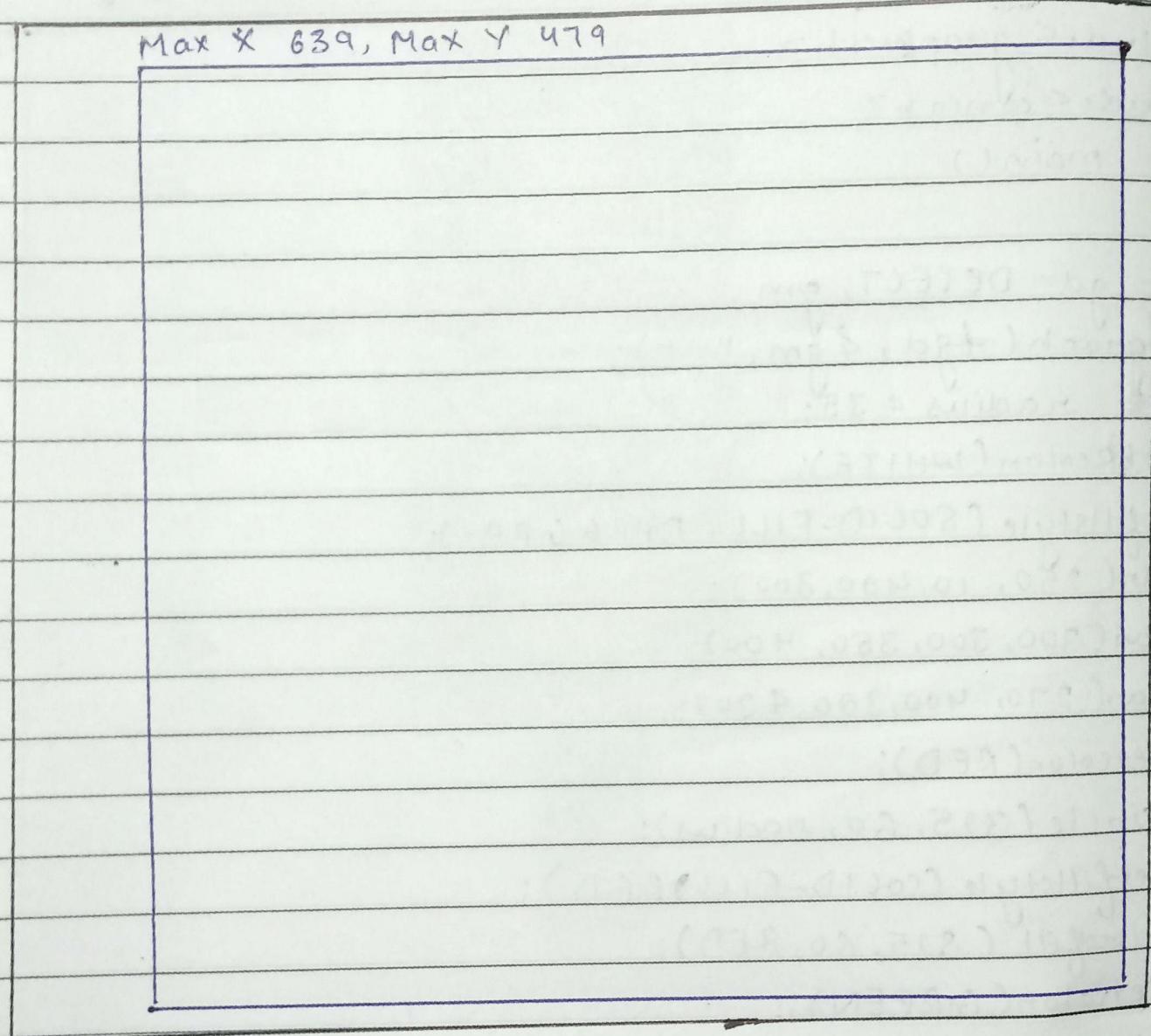
" WAP to draw Traffic light.

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    int radius = 35;
    setbkcolor(WHITE);
    setfillstyle(SOLID-FILL, DARKGRAY);
    bar(250, 10, 400, 300);
    bar(300, 300, 350, 400);
    bar(270, 400, 300, 430);
    setcolor(RED);
    circle(325, 60, radius);
    setfillstyle(SOLID-FILL, RED);
    floodfill(325, 60, RED);
    setcolor(GREEN);
    circle(325, 150, radius);
    setfillstyle(SOLID-FILL, GREEN);
    floodfill(325, 150, GREEN);
    setcolor(YELLOW);
    circle(325, 240, radius);
    setfillstyle(SOLID-FILL, YELLOW);
    floodfill(325, 240, YELLOW);
    getch();
    closegraph();
}
```

Output -

Max X 639, Max Y 479



### Program - 95

// WAP to use getmaxx(), getmaxy()

```
#include <stdio.h>
#include <conio.h>
#include <graphics.h>
void main()
{
    int gd = DETECT, gm, maxx, maxy;
    initgraph(&gd, &gm, " ");
    maxx = getmaxx();
    maxy = getmaxy();
    char text[50];
    sprintf(text, " Max X %.d , Max Y %.d ", maxx, maxy);
    outtextxy(10, 10, text);
    rectangle(10, 30, maxx - 10, maxy - 10);
    getch();
    closegraph();
}
```

~~Output-~~

C O D E R J I

Program - 26

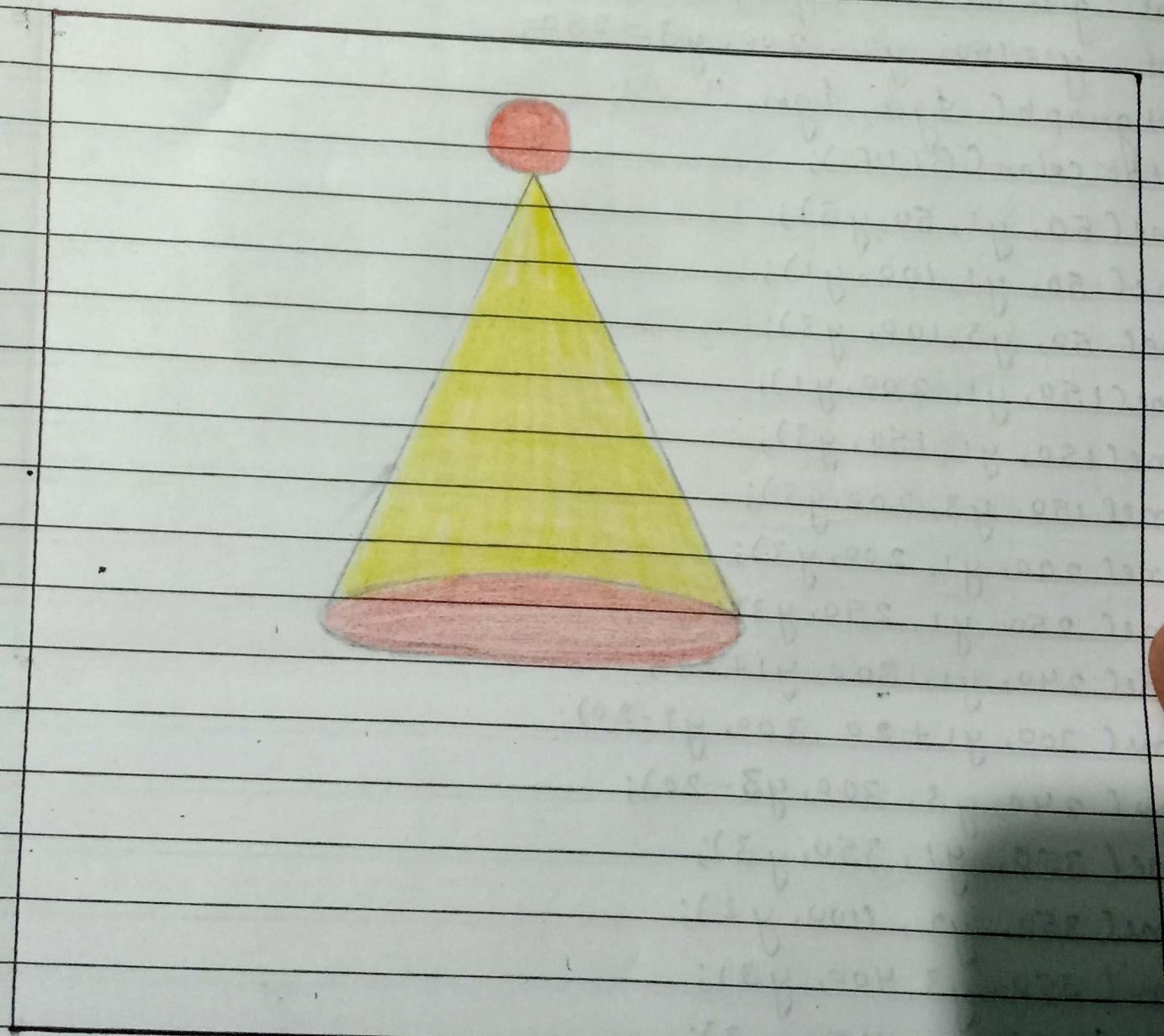
// WAP to draw name using line function

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    int y1=150, y2=200, y3=250;
    initgraph(&gd, &gm, " ");
    setcolor(BLUE);
    line(50, y1, 50, y3);
    line(50, y1, 100, y1);
    line(50, y3, 100, y3);
    line(150, y1, 200, y1);
    line(150, y1, 150, y3);
    line(150, y3, 200, y3);
    line(200, y1, 200, y3);
    line(250, y1, 250, y3);
    line(240, y1, 300, y1+20);
    line(300, y1+20, 300, y3-20);
    line(240, y3, 300, y3-20);
    line(350, y1, 350, y3);
    line(350, y2, 400, y2);
    line(350, y3, 400, y3);
    line(450, y1, 450, y3);
    line(450, y1, 500, y1);
    line(500, y1, 500, y2);
    line(450, y2, 500, y2);
    line(450, y2, 500, y3);
    line(550, y1, 600, y1);
```

```
line(575, y1, 575, y3);  
line(575, y3, 550, y3);  
line(550, y2, 550, y3);  
line(615, y1, 615, y3);  
getch();  
closegraph();  
3
```

Output -



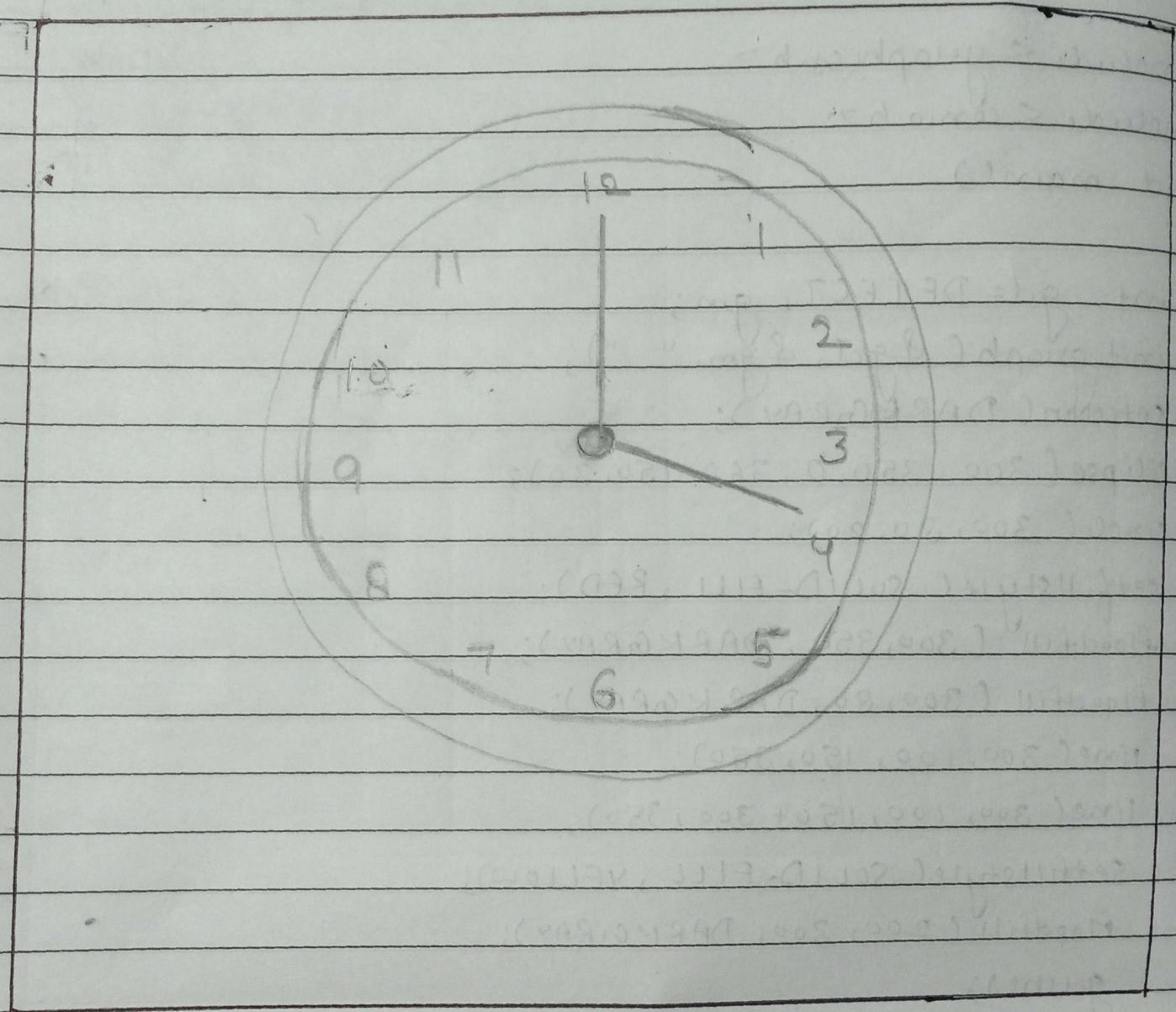
## Program - 27

// WAP to draw cap

input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    setcolor(DARKGRAY);
    ellipse(300, 350, 0, 360, 150, 30);
    circle(300, 80, 20);
    setfillstyle(SOLID-FILL, RED);
    floodfill(300, 350, DARKGRAY);
    floodfill(300, 80, DARKGRAY);
    line(300, 100, 150, 350);
    line(300, 100, 150+300, 350);
    setfillstyle(SOLID-FILL, YELLOW);
    floodfill(200, 300, DARKGRAY);
    getch();
    closegraph();
}
```

Output -



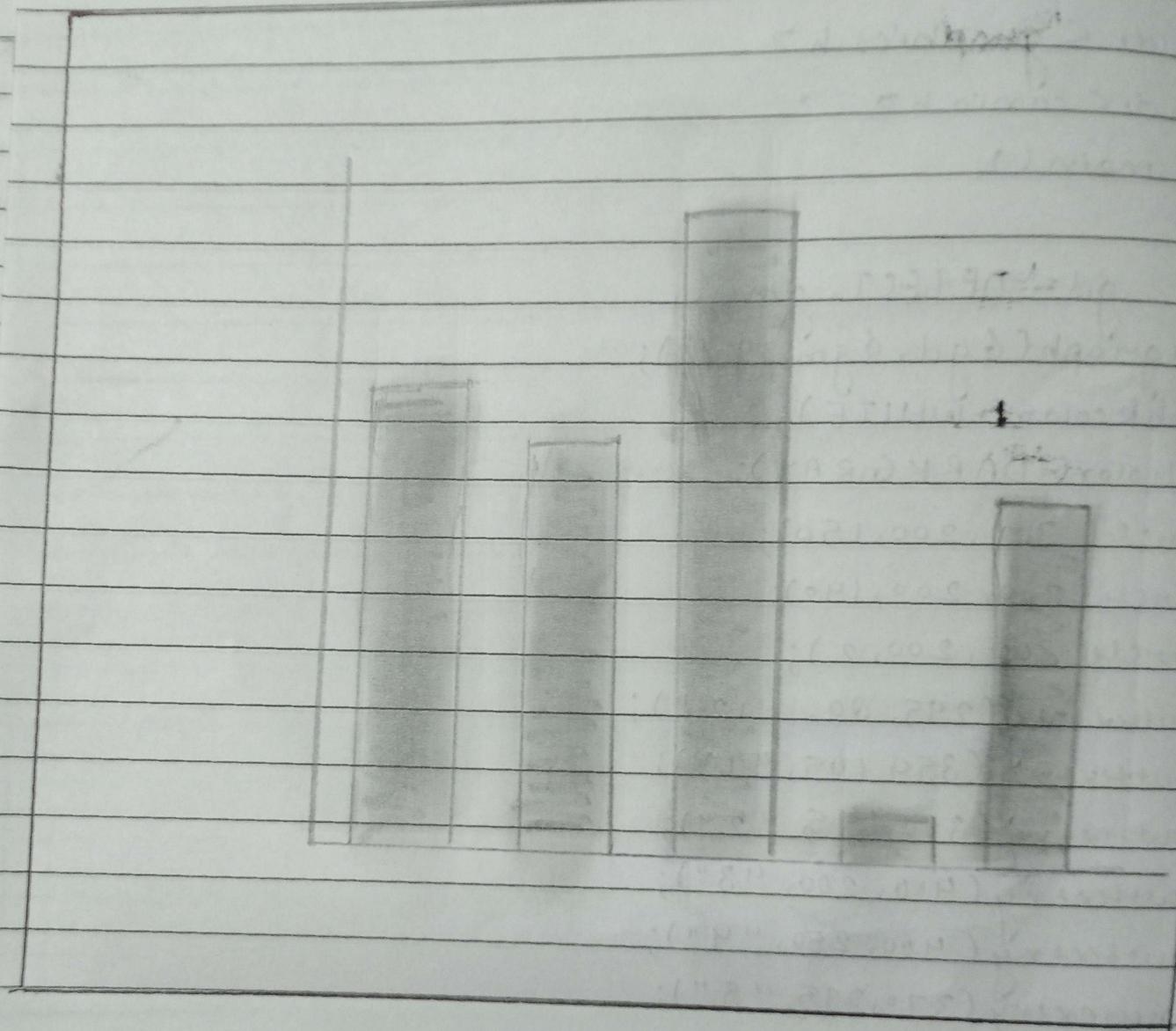
## Program-28

// WAP to draw clock

input -

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    setbkcolor(WHITE);
    setcolor(DARKGRAY);
    circle(300, 200, 150);
    circle(300, 200, 140);
    circle(300, 200, 2);
    outtextxy(295, 80, "12");
    outtextxy(350, 105, "1");
    outtextxy(390, 145, "2");
    outtextxy(410, 200, "3");
    outtextxy(400, 250, "4");
    outtextxy(370, 295, "5");
    outtextxy(308, 320, "6");
    outtextxy(230, 290, "7");
    outtextxy(190, 250, "8");
    outtextxy(180, 200, "9");
    outtextxy(190, 140, "10");
    outtextxy(220, 90, "11");
    line(300, 100, 300, 200);
    line(300, 200, 390, 220);
    getch();
    closegraph();
}
```

output-



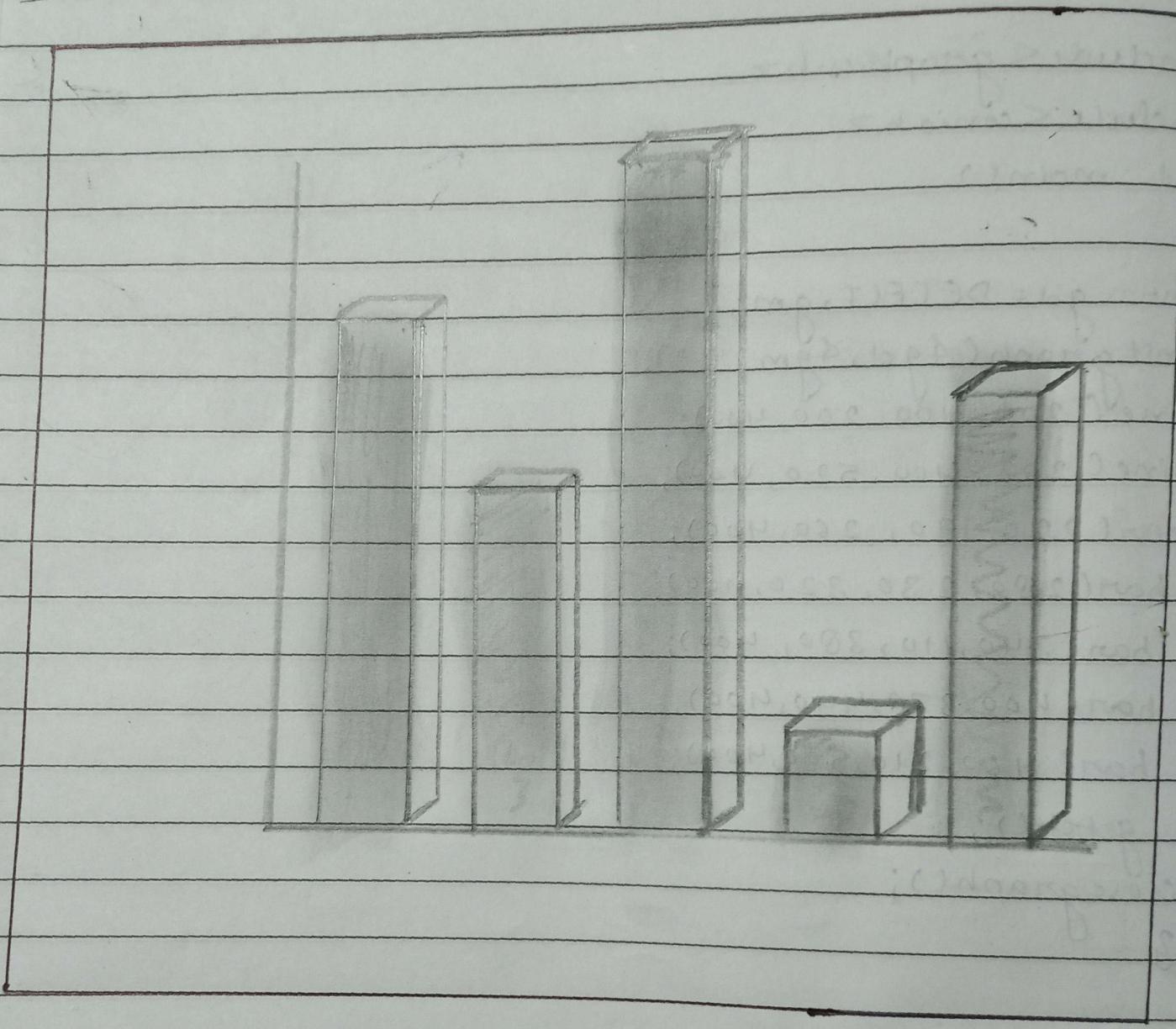
Program - 29

WAP to draw bargraph using bar function

Input-

```
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd=DETECT, gm;
    initgraph(&gd, &gm, " ");
    line(200, 100, 200, 400);
    line(200, 400, 520, 400);
    bar(220, 190, 260, 400);
    bar(280, 230, 320, 400);
    bar(340, 110, 380, 400);
    bar(400, 370, 440, 400);
    bar(460, 210, 500, 400);
    getch();
    closegraph();
}
```

output -



### Program-30

//WAP to draw 3d bargraph using bar3d() function

input-

```
#include<graphics.h>
#include<conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, " ");
    line(200, 100, 200, 400);
    line(200, 400, 520, 400);
    bar3d(220, 190, 260, 400, 10, 1);
    bar3d(280, 230, 320, 400, 10, 1);
    bar3d(340, 110, 380, 400, 10, 1);
    bar3d(400, 370, 440, 400, 10, 1);
    bar3d(460, 210, 500, 400, 10, 1);
    getch();
    closegraph();
}
```