

Experiment No. 1

Objective :- Write a program to understand point, line, circle and ellipse attributes.

```
#include <stdio.h>
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm; // initialization of graph
    driver and graph mode.
    initgraph(&gd, &gm, "C:\\TURBOC3\\BGI");
    // Graph initialization.
    setbkcolor(GREEN); // Set background color as green
    color
    line(100, 100, 250, 150); // To display line using
    line() function
    rectangle(150, 250, 250, 350); // display rectangle
    using rectangle() function.
    circle(200, 200, 50); // display circle using
    circle() function
    ellipse(120, 350, 0, 360, 30, 20); // display ellipse
    using ellipse() function.
    getch();
}
```

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1. Experiment Setup/Algorithm	(2) 2
2. Testing/Execution	(4) 4
3. Presentation/Neatness	(2) 2
4. On Time Submission	(2) 10
Total	(10) 10
Faculty In-charge	Teacher's Signature _____ Date 6/9/24

Experiment - 2

Objective - Write a program to plot different colour of pixels on screen.

```
#include <stdio.h>
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd= DETECT, gm; //initialization of graph driver
    initgraph(&gd, &gm, "C:\TURBO C\BG1"); //Graph
    putpixel(100, 100, RED); //display red color point
    (pixel) on screen.
    putpixel(200, 100, GREEN); //display green color
    point (pixel).on screen
    putpixel(300, 100, YELLOW); //display yellow
    color point (pixel)
    on screen

    getch();
}
```

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1. Experiment Setup / Algorithm	(2) <u>2</u>
2. Testing / Execution	(4) <u>4</u>
3. Presentation / Neatness	(2) <u>2</u>
4. On Time Submission	(2) <u>2</u>
Total	(10) <u>10</u>
Faculty In-Charge <u>Akash</u> Date 13/9/24 Teacher's Signature.....	

Experiment - 2

Objective - Write a program to plot different colour of pixels on screen.

```
#include <stdio.h>
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd= DETECT , gm; //initialization of graph driver
    // and graph mode .
    initgraph(&gd , &gm , "C:\TURBO C\BG.I"); //Graph
    // initialization
    putpixel(100 , 100 , RED); //display red color point
    // (pixel) on screen .
    putpixel(200 , 100 , GREEN); //display green color
    // point (pixel) .on screen
    putpixel(300 , 100 , YELLOW); //display yellow
    // color point (pixel)
    // on screen
    getch();
}
```

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Jaipur		
1. Experiment Setup / Algorithm	(2)	2
2. Testing / Execution	(4)	4
3. Presentation / Neatness	(2)	2
4. On Time Submission	(2)	2
Total	(10)	10
For In-Charge <u>Ahuja</u> Date 13/9/24		
Teacher's Signature.....		

Experiment No.-3

Objective - Write a program to implement digital Differential Analyzer (DDA) algorithm.

```
#include <stdio.h>
#include <graphics.h>
#include <conio.h>
#define round(a) ((int)(a+0.5))
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "C:\\TURBOC3\\BGI");
    int x1, y1, x2, y2, dx, dy, step, i;
    float xinc, yinc, x, y;
    x1 = 100, y1 = 100, x2 = 300, y2 = 200;
    x = x1, y = y1;
    dx = x2 - x1;
    dy = y2 - y1;
    if (abs(dx) > abs(dy))
        Step = dx;
    else
        Step = dy;
    xinc = dx / float(step);
    yinc = dy / float(step);
    putpixel(x, y, RED);
    for (i = 1; i <= step; i++)
    {
        x += xinc;
        y += yinc;
        putpixel(x, y, RED);
    }
}
```

Teacher's Signature.....

Experiment No. - 3

Objective - Write a program to implement Digital Differential Analyzer (DDA) Algorithm.

```
#include <stdio.h>
#include <graphics.h>
#include <conio.h>
#define round(a) ((int)(a+0.5))
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "C:\\TURBOC3\\BGI");
    int x1, y1, x2, y2, dx, dy, step, i;
    float xinc, yinc, x, y;
    x1 = 100, y1 = 100, x2 = 300, y2 = 200;
    x = x1, y = y1;
    dx = x2 - x1;
    dy = y2 - y1;
    if (abs(dx) > abs(dy))
        step = dx;
    else
        step = dy;
    xinc = dx / float(step);
    yinc = dy / float(step);
    putpixel(x, y, RED);
    for (i = 1; i <= step; i++)
    {
        x += xinc;
        y += yinc;
        putpixel(x, y, RED);
    }
}
```

$x = x + xinc$;
 $y = y + yinc$;
putpixel (Round(x), round(y), RED);
getche();

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1. Experiment Setup / Algorithm	(2) 2
2. Testing / Execution	(4) 4
3. Presentation / Neatness	(2) 2
4. On Time Submission	(2) 2
Total	(10) 10
Faculty In-Charge <i>Alivis</i> Date 20/9/24	

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$x = x + xinc$;

$y = y + yinc$;

~~putpixel (Round(x), round(y), RED);~~

~~getche();~~

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1. Experiment Setup / Algorithm	(2)	2
2. Testing / Execution	(4)	4
3. Presentation / Neatness	(2)	2
4. On Time Submission	(2)	2
Total	(10)	10

Faculty In-Charge *Review* Date 20/9/24

Experiment - 4

Objective :- WAP to implement Bresenham line drawing algorithm.

```
#include < stdio.h >
#include < graphics.h >
#include < conio.h >
#define round(a)((int)(a+0.5))
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "C:\\TC\\BGI");
    int gd = DETECT, gm;
    initgraph(&
    int dx, dy, p, x, y, x1, y1, x2, y2;
    printf("Enter co-ordinates of first point: ");
    scanf("%d%d", &x1, &y1);
    printf("Enter co-ordinates of second point: ");
    scanf("%d%d", &x2, &y2);
    dx = x2 - x1;
    dy = y2 - y1;
    p = 2 * dy - dx;
    while (x < x2)
        if (p >= 0)
            putpixel(x, y, RED);
        y = y + 1;
        p = p + 2 * dy - 2 * dx;
```

Teacher's Signature.....

Experiment - 4

Objective :- WAP to implement Bresenham line drawing algorithm.

```
#include < stdio.h >
#include < graphics.h >
#include < conio.h >
#define Round(a)((int)(a+.5))
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "C:\\TC\\BGI");
    int gd = DETECT, gm;
    initgraph(&
        int dx, dy, p, x, y, x1, y1, x2, y2;
        printf("Enter co-ordinates of first point:");
        scanf("%d%d", &x1, &y1);
        printf("Enter co-ordinates of second point:");
        scanf("%d%d", &x2, &y2);
        dx = x2 - x1;
        dy = y2 - y1;
        p = 2 * dy - dx;
        while (x < x2)
        if (p >= 0)
            putpixel(x, y, RED);
        y = y + 1;
        p = p + 2 * dy - 2 * dx;
```

```
else {
    putPixel(x, y, RED);
    p = p + 2 * dy;
    x = x + 1;
}
getch();
```

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1. Experiment Setup / Algorithm	(2)	2
2. Testing / Execution	(4)	4
3. Presentation / Neatness	(2)	2
4. On Time Submission	(2)	2
Total	(10)	10
Faculty In-Charge	Anushka Date 27/9/21	

Teacher's Signature.....

```
else {  
    putpixel(x, y, RED);  
    p = p + dy; y  
    x = x + 1;  
    y  
    getch();  
}
```

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|---------------------------------|----------|----|
| 1. Experiment Setup / Algorithm | (2) ... | 2 |
| 2. Testing / Execution | (4) ... | 4 |
| 3. Presentation / Neatness | (2) ... | 2 |
| 4. On Time Submission | (2) ... | 2 |
| Total | (10) ... | 10 |

Faculty In-Charge G. L. Dhistwar Date 27/9/21

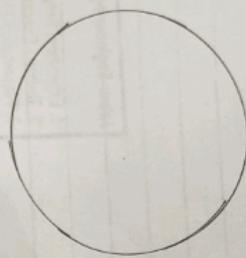
Experiment - 5

DATE : / /
PAGE NO.:

Objective — Write a program to implement mid-point circle generating algorithm.

Enter the coordinates = 300 200

Now enter the radius = 100



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

void main () {
    int gd = DETECT, gm;
    initgraph(gd, gm, "C:\\TURBOC3\\BGI");
    int xc, yc, p, x, y;
    printf ("\n\n\tEnter the co-ordinates of center : ");
    scanf ("%d %d", &xc, &yc);
    point ("n \n\n\tEnter the radius : ");
    point ("n \n\n\tEnter the radius : ");
    scan ("%d", &r);
    x = 0;
    y = r;
    p = (1 - r);
    for (x = 0; y >= 0; x++)
    {
        if (p < 0)
            p = p + (2 * x) + 1;
        else
            p = p + (2 * x) + 1 - 2 * (y);
        putpixel (xc + x, yc - y, WHITE);
        putpixel (xc - x, yc - y, WHITE);
        putpixel (xc + x, yc + y, WHITE);
        putpixel (xc - x, yc + y, WHITE);
    }
}
```

Teacher's Signature.....

Experiment - 5

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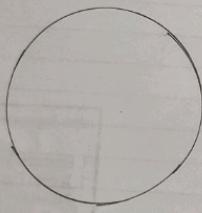
Objective — Write a program to implement mid point circle generating Algorithm.

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

void main()
{
    int gd = DETECT, gm;
    initgraph(gd, gm, "C:\TURBOC3\BGI");
    int xc, yc, r, p, x, y;
    printf("Enter the co-ordinates of center:");
    scanf("%d %d", &xc, &yc);
    point(x, y);
    printf("\n\nIt Enter the radius : ");
    Scanf("%d", &r);
    x = 0;
    y = r;
    p = (1 - r);
    for (x = 0; x <= y; x++)
    {
        if (p < 0)
            point(x, y);
        else
            point(x + 1, y);
        x++;
        y--;
        p = p + (2 * x) + 1;
    }
    y = r;
    p = p + (2 * x) + 1;
    else
        x = x + 1;
    y = -r;
    p = p + 2 * (x) + 1 - 2 * (y);
    putpixel(x + xc, yc - y, WHITE);
    putpixel(xc - x, yc - y, WHITE);
    putpixel(xc + x, yc + y, WHITE);
    putpixel(xc + x, yc - y, WHITE);
}
```

Enter the coordinates = 300 200

Now enter the radius = 100



Experiment - 5

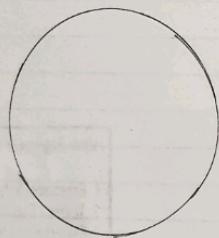
Objective - Write a program to implement mid-point circle generating Algorithm.

```
#include <stdio.h>
#include <graphics.h>
#include <conio.h>
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "C:\\TURBOC3\\BGI");
    int xc, yc, x, p, x1, y1;
    printf("\n\n\tEnter the co-ordinates of center:");
    scanf("%d%d", &xc, &yc);
    printf("\n\n\tEnter the radius:");
    scanf("%d", &r);
    x = 0; y = r; p = (1 - r);
    for (x = 0; x <= y; x++)
    {
        if (p < 0)
            x = x + 1;
        y = y - 1;
        p = p + (2 * x) + 1;
        else
            x = x + 1;
        y = y - 1;
        p = p + 2 * (x) + 1 - 2 * (y);
        putpixel(xc + x, yc - y, WHITE);
        putpixel(xc - x, yc - y, WHITE);
        putpixel(xc + x, yc + y, WHITE);
    }
}
```

Teacher's Signature.....

Enter the coordinates = 300 200

Now enter the radius = 100



Experiment - 5

Objective - Write a program to implement mid-point circle generating algorithm.

```
#include < stdio.h >
#include < graphics.h >
#include < Conio.h >
void main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "C:\TURBOC3\BGI");
    int xc, yc, r, p, x, y;
    printf("Enter the co-ordinates of center:");
    scanf("%d %d", &xc, &yc);
    printf("Enter the radius:");
    scanf("%d", &r);
    x = 0; y = r; p = (1 - r);
    for (x = 0; x <= y; x++)
    {
        if (p < 0)
            x = x + 1;
        y = y - 1;
        p = p + (2 * x) + 1;
        else
            x = x + 1;
        y = y - 1;
        p = p + 2 * (x) + 1 - 2 * (y);
        putpixel(xc + x, yc - y, WHITE);
        putpixel(xc - x, yc - y, WHITE);
        putpixel(xc + x, yc + y, WHITE);
    }
}
```

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```
    putpixel (xc - x, yc + y, WHITE);  
    putpixel (xc + y, yc - x, WHITE);  
    putpixel (xc - y, yc - x, WHITE);  
    putpixel (xc + y, yc - x, WHITE);  
    putpixel (xc - y, yc + x, WHITE);  
}  
getch ();
```

```
putpixel (xc - x, yc + y, white);  
putpixel (xc + y, yc - x, white);  
putpixel (xc - y, yc - x, white);  
putpixel (xc + y, yc - x, white);  
putpixel (xc - y, yc + x, white);  
y  
getch();
```