UNIT 12
INTRODUCTION TO GRAPHICS

LH - 2HRS

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CONTENT (LH - 2HRS)

12.1 Introduction,

12.2 Graphical Mode,

12.3 Graphical Functions

12.1 Introduction

- There are two modes of output device:

✓Text mode

✓Graphics mode

- In C graphics, the **functions** in header file **graphics.h** are used to draw different shapes like circles, rectangles, etc, display text(any message) in a different format (different fonts and colors).

Some terms used in Graphics Programming

- **Pixel** is a single point in a graphic image.
- **Resolution** is the total number of pixels setup for a screen.
- **Video Adapters** are drivers for display.

12.3 Graphical Mode

- **Initializing Graphics Mode:**

We use initgraph() function as:

initgraph(&graphics_driver, &graphics_mode, “path_to_driver”);

- **Closing Graphics Mode:**

We use closegraph() function as:

closegraph();

- **Example:**

int gd=DETECT,gm;//auto detection of graphics driver VGA,CGA,EGA

initgraph(&gd, &gm, “C:\\TC\\BGI”);//mode-resolution, color available

closegraph();

Result of Graphics Operations:

- The library function graphresult() is used to determine whether a certain graphics operation succeeded or not.
- The function returns 0 if no error occurs.

12.3 Graphical Functions

1. **Plotting and getting points**

- **putpixel**(): Plots a point with a specified color

Syntax: putpixel(int x, int y, int color);

- **getpixel():** Gets color of specified pixel

Syntax: integer_variable=getpixel(int x, int y);

2. **Changing drawing/foreground and background color**

- **setcolor:** It changes current drawing/foreground color.

Syntax: setcolor(int color);

- **setbkcolor:** It changes the background color.

Syntax: setbkcolor(int color);

3. Drawing lines

- **line**(): It draws a line from point having co-ordinate x1, y1 to x2, y2.

Syntax: line(int x1, int y1, int x2, int y2);

LAB 1: WAP to draw a line passing from a point (0,50) to another point (200,300).

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<stdlib.h>
int main(){
        int gd=DETECT,gm;
        initgraph(&gd,&gm,"C:\\TC\\BGI");
        if(graphresult!=0){
                printf("Initialization failed.");
        }
        setcolor(GREEN);
        line(0,50,200,300);
        getch();
        closegraph();
return 0;
}
```

4. Drawing Circles

- **circle**(): It draws a circle having center point (x,y) and radius r.

Syntax: circle(int x, int y, int r);

LAB 2: WAP to draw two concentric circles with center (200,200) and radii 50 and 75.

```
#include<stdio.h>
#include<graphics.h>
#include<conio.h>
#include<stdlib.h>
int main(){
        int gd=DETECT, gm;
        initgraph(&gd,&gm,"C:\\TC\\bgi");
        if(graphresult()!=0){
                printf("Initialization failed.");
                exit(0);
        }
        circle(200,200,50);
        circle(200,200,75);
        getch();
        closegraph();
        return 0;
}
```

5. Drawing ellipses

- **ellipse**(): It draws an ellipse.

Syntax: ellipse(int x, int y, int startAngle, int endAngle, int xRadius, int yRadius);

6. Drawing circular arcs

- **arc**(): It draws a circular arc.

Syntax: arc(int x, int y, int startAngle, int endAngle, int radius);

7. Drawing rectangles

- **rectangle():** It draws rectangle from two end points of a diagonal of the rectangle.

Syntax: rectangle(int x1, int y1, int x2, int y2);

8. Drawing and filling a polygon

- **drawpoly**(): It draws the outline of a polygon.
- **fillpoly**(): It draws and fills a polygon.

Syntax: drawpoly(int numberOfPoints, int points[]);

fillpoly(int numberOfPoints, int points[]);

9. Displaying text in graphics mode

- **outtext():** It displays the string at the current position.

Syntax: outtext(string text);

- **outtextxy():** It displays the string at point(x,y).

Syntax: outtextxy(int x, int y, string text);

- **settextstyle():** It changes font, size and direction of characters.

Syntax: settextstyle(int font, int direction, int size);

THANK YOU FOR YOUR ATTENTION