BSc Computer Science
CS1541 Computer Graphics

Module I

Graphics : Implementation in C

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Overview

- Using header file graphics.h
- An interface provides access to a simple graphics library
- To draw different shapes, display text in different fonts, change colors
- To make graphics programs, animations, projects, and games.
- Draw circles, lines, rectangles, bars and many other geometrical figures.
- Change their colors using the available functions and fill them.

initgraph()

- The first step in any graphics program is to initialize the graphics drivers on the computer using **initgraph** method of graphics.h library.
- Usage

  void initgraph(int *graphicsDriver, int *graphicsMode, char *driverDirectoryPath);
- It initializes the graphics system by loading the passed graphics driver then changing the system into graphics mode.
- It also resets or initializes all graphics settings like color, palette, current position etc, to their default values.

Parameters in initgraph()

- **graphicsDriver** : It is a pointer to an integer specifying the graphics driver to be used. It tells the compiler that what graphics driver to use or to automatically detect the drive. In all our programs we will use **DETECT** macro of graphics.h library that instruct compiler for auto detection of graphics driver.
- **graphicsMode** : It is a pointer to an integer that specifies the graphics mode to be used. If *graphdriver is set to DETECT, then initgraph sets *graphmode to the highest resolution available for the detected driver.
- **driverDirectoryPath** : It specifies the directory path where graphics driver files (BGI files) are located. If directory path is not provided, then it will seach for driver files in current working directory directory. In all our sample graphics programs, you have to change path of BGI directory accordingly where you turbo C compiler is installed.

Colors in C Graphics Programming

- There are 16 colors declared in C Graphics.
- Use colors to set the current drawing color, change the color of background, change the color of text, to color a closed shape etc.
- To specify a color - setcolor(RED) or setcolor(4).

COLOR MACRO	INTEGER VALUE
BLACK	0
BLUE	1
GREEN	2
CYAN	3
RED	4
MAGENTA	5
BROWN	6
LIGHTGRAY	7
DARKGRAY	8

LIGHTBLUE	9
LIGHTGREEN	10
LIGHTCYAN	11
LIGHTRED	12
LIGHTMAGENTA	13
YELLOW	14
WHITE	15

Sample Program

```
 /* C graphics program to draw a line */
#include<graphics.h>
#include<conio.h>
int main() {
   int gd = DETECT, gm;
   /* initialization of graphic mode */
   initgraph(&gd, &gm, "C:\\TC\\BGI");
   line(100,100,200, 200);
   getch();
   closegraph();
   return 0;
}
```

Sample Program

```
 /* C graphics program to draw different shapes */
#include<graphics.h>
#include<conio.h>
void main()
{
   intgd=DETECT,gm;
   initgraph (&gd,&gm,"c:\\tc\\bgi");
   setbkcolor(GREEN);
   printf("\t\t\t\n\nLINE");
   line(50,40,190,40);
   printf("\t\t\n\n\n\nRECTANGLE");
   rectangle(125,115,215,165);
   printf("\t\t\t\n\n\n\n\n\n\nARC");
   arc(120,200,180,0,30);
   printf("\t\n\n\n\nCIRCLE");
   circle(120,270,30);
   printf("\t\n\n\n\nECLIPSE");
   ellipse(120,350,0,360,30,20);
   getch();
}
```

Thank You