**Computer Graphics**

**(**Experiment 2**)**

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| **NAME :** Ashish Sharma  **SAP ID :** 500087115  **BATCH :** B-4 |

* **STRUCTURE OF OPENGL PROGRAM:**

int main (( int argc, char \*\*argv))

{

glutinit(&argc.argv);

glutinitDisplayMode(GLUT DOUBLE |GLUT RGB |GLUT DEPTH);

glutCreateWindow (“Interactive rotating Cube”) // with size and position

glutDisplayFunc(display); // display call back routine for drawing

glutKeyboardFunc(myKeyHandler); // keyboard callback

glutMouseFunc(my-MouseClickHandler);//mouse call back

glutMotionFunc(myMouscMotionHandler);//mouse move callback

init();

glutMainLoop();

}

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| 1). **argv and argc**are how command line arguments are passed to main() in C and C++.  **(int argc, char \*\* argv )** : special functional parameters that an be entered into main function  **\*\*** means pointer to pointer  Here; **argc** means “argument count”,  And **argv**  refers to “argument vector”,   1. . **glutInit** is used to initialize the glut(OpenGL utility toolkit) 2. **glutInitDisplayMode** is used to initialize Display mode, and to get colour image is passed the parameter **GLUT\_RGB** and we defiened **GLUT\_DEPTH** is used for depth, colour intensity, types of colour, etc… 3. **glutCreateWindow** is used for creating a window for our rendered image(with this we can resize and position display window) 4. glutDisplayFunction is for displaying 5. As we interact with the help of Keyboard, mouse, etc... we setup/initialize all this environment using **glutKeyboardFunction** and **glutMouseFunc**(Mouse key activities) 6. **glutMotionFunc** is declared of handling Mouse Motion 7. And in the we start writing GRAPHICS PROGRAM inside **glutMainLoop()** |

* **Basic Structure of Graphics Program using C language**

SIMPLE GRAPHICS PROGRAM EXAMPLE :

#include<stdio.h>

#include<conio.h>

#include<graphics.h>

main(){

int gd=DETECT,gm;

initgraph (&gd,&gm, “bgi file path”); //initgraph

Setbkcolor(BLACK);

line(60,50,200,50);

printf(“\t\t\n\n\n\nRECTANGLE”);

rectangle(100, 90, 190, 140);

Arc(120,200,180,0,30);

printf(“\t\n\n\n\nCIRCLE”);

circle(120, 270, 30);

getch();

}

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| 1. . **DETECT** is a macro(written in capital) and this will detect the graphics driver. DETECT is assigned to **gd**.   2). There are two modes; **tm(text mode)** and **gm(graphics mode)**  3). **initgraph** is used to initialize the graphics and inside initgraph, we use 3 parameters which are **&gd(address of graphics driver)**, **&gm(address of graphic mode)**, and **path(path of the bgi file)**  4). **Setbkcolour** is used for setting background colour |

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| 1).  **#include<stdio.h>** //Standard I/O Header File  **#include<conio.h>** //Header File  **#include<graphics.h>** //Graphics Header file  2).  **main(){**  **int gd=DETECT,gm;** //Declaring the two variables gd and gm of int type for graphic driver and graphic mode. DETECT is macro, which would detect the graphic driver.  **initgraph (&gd, &gm, “bgi file path”);** //initgraph function with the address of gd, gm and bgi file    3).  **getch();**  **closegraph();**  **return 0;**  **}** |