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**SE IT**

**Roll No.47**

**CG Lab**

**Assignment No: 7 (Bezier Curve)**

**#include <GL/freeglut.h>**

**#include <stdlib.h>**

**int i;**

**void init(void)**

**{**

**glClearColor(1.0, 1.0, 1.0, 1.0);**

**}**

**void drawBitmapText(char\* string, float x,float y, float z)**

**{**

**char\* c;**

**glRasterPos2f(x, y);**

**for (c = string; \*c != '\0'; c++) {**

**glutBitmapCharacter(**

**GLUT\_BITMAP\_TIMES\_ROMAN\_24, \*c);**

**}**

**}**

**void draw(GLfloat ctrlpoints[4][3])**

**{**

**glShadeModel(GL\_FLAT);**

**glMap1f(GL\_MAP1\_VERTEX\_3, 0.0, 1.0, 3, 4,**

**&ctrlpoints[0][0]);**

**glEnable(GL\_MAP1\_VERTEX\_3);**

**glColor3f(1.0, 1.0, 1.0);**

**glBegin(GL\_LINE\_STRIP);**

**for (i = 0; i <= 30; i++)**

**glEvalCoord1f((GLfloat)i / 30.0);**

**glEnd();**

**glFlush();**

**}**

**void display(void)**

**{**

**int i;**

**GLfloat ctrlpoints[4][3]**

**= { { -0.00, 2.00, 0.0 },**

**{ -2.00, 2.00, 0.0 },**

**{ -2.00, -1.00, 0.0 },**

**{ -0.00, -1.00, 0.0 } };**

**draw(ctrlpoints);**

**GLfloat ctrlpoints2[4][3]**

**= { { 0.0, -1.00, 0.0 },**

**{ 0.55, -0.65, 0.0 },**

**{ 0.65, -0.25, 0.0 },**

**{ 0.00, 0.70, 0.0 } };**

**draw(ctrlpoints2);**

**GLfloat ctrlpoints3[4][3]**

**= { { 0.0, 0.70, 0.0 },**

**{ 0.15, 0.70, 0.0 },**

**{ 0.25, 0.70, 0.0 },**

**{ 0.65, 0.700, 0.0 } };**

**draw(ctrlpoints3);**

**glColor3f(1, 0, 0);**

**drawBitmapText("Bezier Curve Implementation",-1.00, -3.0, 0);**

**glFlush();**

**}**

**void reshape(int w, int h)**

**{**

**glViewport(0, 0, (GLsizei)w,**

**(GLsizei)h);**

**glMatrixMode(GL\_PROJECTION);**

**glLoadIdentity();**

**if (w <= h)**

**glOrtho(-5.0, 5.0, -5.0**

**\* (GLfloat)h / (GLfloat)w,**

**5.0 \* (GLfloat)h / (GLfloat)w, -5.0, 5.0);**

**else**

**glOrtho(-5.0 \* (GLfloat)w / (GLfloat)h,**

**5.0 \* (GLfloat)w / (GLfloat)h,**

**-5.0, 5.0,**

**-5.0, 5.0);**

**glMatrixMode(GL\_MODELVIEW);**

**glLoadIdentity();**

**}**

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

**{**

**glutInit(&argc, argv);**

**glutInitDisplayMode(**

**GLUT\_SINGLE | GLUT\_RGB);**

**glutInitWindowSize(500, 500);**

**glutInitWindowPosition(100, 100);**

**glutCreateWindow(argv[0]);**

**init();**

**glutDisplayFunc(display);**

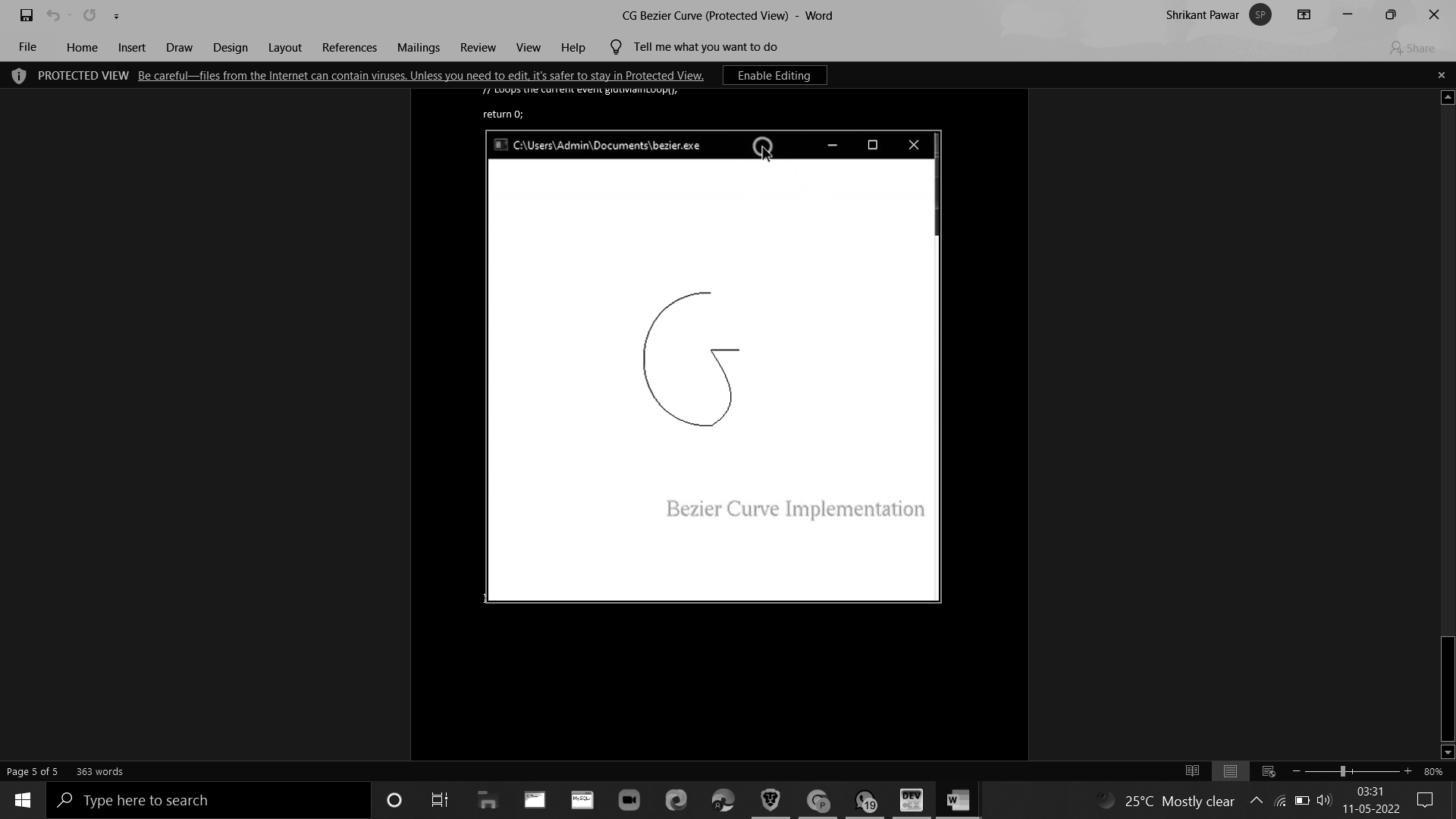
**glutReshapeFunc(reshape);**

**glutMainLoop();**

**return 0;**

**}**

**Output:**

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