Report on

Computer Graphics Lab Project

Submitted To:

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Objective:

We want to make a lab project for computer graphics lab course by using OpenGL and C programming language.

Tools: CodeBlocks.

Language:

C programming language , OpenGL (cross platform API).

Implementation:

We completed our project using C programming & OpenGL with the experience what we learned in our computer graphics lab course.

Source Code :

```
#include<GL/glut.h>
#include<stdlib.h>
#include<stdio.h>


void display(void)
{

// Hill
```

```
glColor3f(0.0,1.0,0.0);
   glBegin(GL_POLYGON);
    glVertex2i(-65,54);
    glVertex2i(1000,-42);
    glVertex2i(1000,-140);
    glVertex2i(-1000,-140);
   glEnd();


// River

glColor3f(0.0,1.0,1.0);
   glBegin(GL_QUADS);
    glVertex2i(-1000,-48);
    glVertex2i(1000,-48);
    glVertex2i(1000,-140);
    glVertex2i(-1000,-140);
   glEnd();

// Road

glColor3f(0.90,0.75,0.0);
   glBegin(GL_QUADS);
    glVertex2i(-1000,-33);
    glVertex2i(1000,-33);
    glVertex2i(1000,-48);
    glVertex2i(-1000,-48);
   glEnd();
```

```
// House roof

glColor3f(1.0,1.0,0.0);
   glBegin(GL_QUADS);
    glVertex2i(6,71);
    glVertex2i(22,71);
    glVertex2i(32,57);
    glVertex2i(-4,57);
   glEnd();



// House body

glColor3f(0.0,0.0,1.0);
   glBegin(GL_QUADS);
    glVertex2i(-1,57);
    glVertex2i(29,57);
    glVertex2i(29,25);
    glVertex2i(-1,25);
   glEnd();

// House door

glColor3f(1.0,1.0,0.0);
   glBegin(GL_POLYGON);
    glVertex2i(11,47);
    glVertex2i(17,47);
```

```
    glVertex2i(17,25);
    glVertex2i(11,25);
   glEnd();

// House left window

glColor3f(1.0,1.0,0.0);
   glBegin(GL_POLYGON);
    glVertex2i(2,46);
    glVertex2i(7,46);
    glVertex2i(7,37);
    glVertex2i(2,37);
   glEnd();


// House right window

glColor3f(1.0,1.0,0.0);
   glBegin(GL_POLYGON);
    glVertex2i(21,46);
    glVertex2i(26,46);
    glVertex2i(26,37);
    glVertex2i(21,37);
   glEnd();

// Stars in the sky

glPointSize(4);
glColor3f(1.0,1.0,1.0);
```

```
   glBegin(GL_POINTS);
    glVertex2i(-100,90);
    glVertex2i(-90,80);
    glVertex2i(-80,90);
    glVertex2i(-70,80);
    glVertex2i(-60,90);
    glVertex2i(-50,80);
    glVertex2i(-40,90);
    glVertex2i(-30,80);
    glVertex2i(-20,90);
    glVertex2i(-10,80);
    glVertex2i(0,90);
    glVertex2i(10,80);
    glVertex2i(20,90);
    glVertex2i(30,80);
    glVertex2i(40,90);
    glVertex2i(50,80);
    glVertex2i(60,90);
    glVertex2i(70,80);
    glVertex2i(80,90);
    glVertex2i(90,80);
    glVertex2i(100,90);
   glEnd();


// Ship main part

glColor3f(0.0,0.0,1.0);
   glBegin(GL_POLYGON);
```

```
    glVertex2i(-83,-68);
    glVertex2i(-20,-68);
    glVertex2i(-26,-88);
    glVertex2i(-77,-88);
   glEnd();

// Ship floor part

glColor3f(1.0,1.0,1.0);
   glBegin(GL_QUADS);
    glVertex2i(-75,-53);
    glVertex2i(-28,-53);
    glVertex2i(-28,-68);
    glVertex2i(-75,-68);
   glEnd();



// Ship 1st chimney

glColor3f(1.0,0.0,0.40);
   glBegin(GL_POLYGON);
    glVertex2i(-66,-29);
    glVertex2i(-59,-29);
    glVertex2i(-59,-53);
    glVertex2i(-66,-53);
   glEnd();

// Ship 2nd chimney
```

```
glColor3f(1.0,0.0,0.40);
   glBegin(GL_POLYGON);
    glVertex2i(-53,-29);
    glVertex2i(-46,-29);
    glVertex2i(-46,-53);
    glVertex2i(-53,-53);
   glEnd();


// Ship 3rd chimney

glColor3f(1.0,0.0,0.40);
   glBegin(GL_POLYGON);
    glVertex2i(-40,-29);
    glVertex2i(-33,-29);
    glVertex2i(-33,-53);
    glVertex2i(-40,-53);
   glEnd();

   glFlush();

}

void init(void)
{
   glMatrixMode(GL_PROJECTION);
   glLoadIdentity();
   gluOrtho2D(-100,100,-100,100);
```

```
}

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

   glutInit(&argc, argv);
   glutInitDisplayMode (GLUT_SINGLE | GLUT_RGB);
   glutInitWindowSize (500, 500);
   glutInitWindowPosition (100,100);
   glutCreateWindow ("Computer Graphics Lab Project");
   init();
   glutDisplayFunc(display);
   glutMainLoop();

   return 0;

}
```

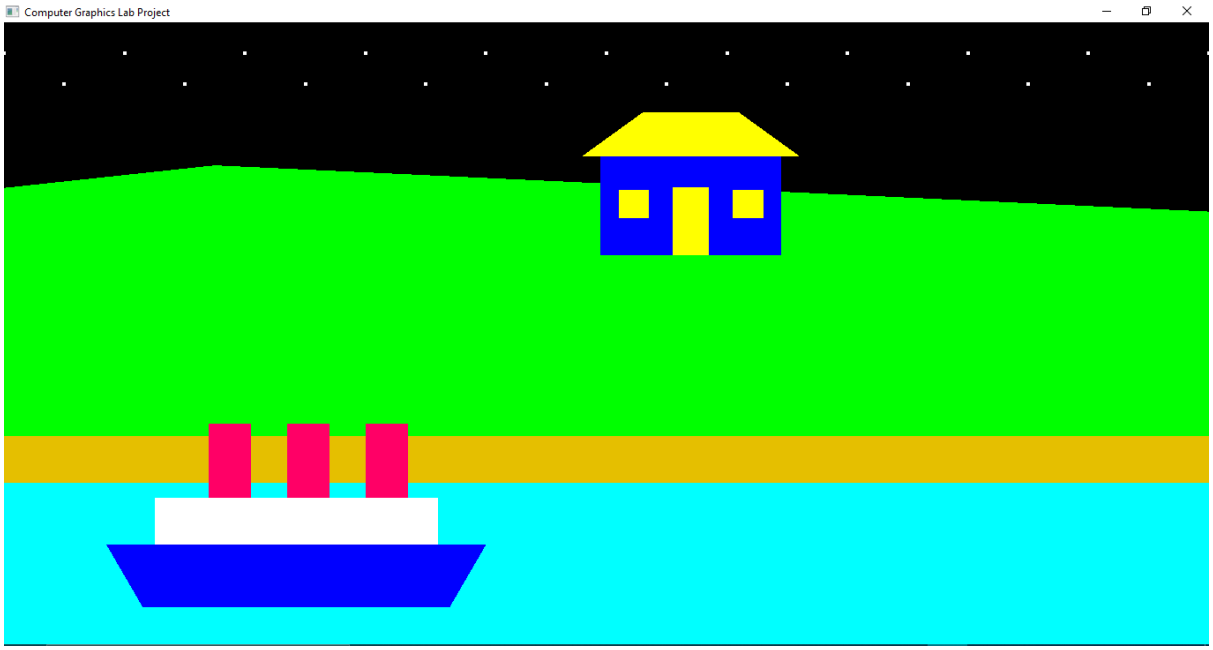
Result and discussion:

In here we completed our project for computer graphics lab course , which is a **“ Night Scenario “** .

There are :

1. A green hill,
2. Stars in the black sky,
3. A house in the hill,
4. A road (brown color),
5. A river,
6. A ship in the river.

Output :



Conclusion:

Successfully we completed our lab project for computer graphics lab course by using OpenGL and C programming language with the experience what we learned from this course & we want to give special thanks to our honourable faculty of this course for her support for us in this computer graphics lab course.