**2.program to draw a rocket and allow user to change the color .**

**Objective:**

In this program, students will learn to create window and to draw a Rocket and change its colour using openGL functions.

**Program:**

#include<GL/glut.h>

#include<stdio.h>

GLfloat r1=1.0, r2=0.5,r3=0.5;

GLfloat b1=1.0, b2=1.0, b3=1.0;

GLfloat t1=1.0, t2=0.5, t3=0.0;

void change();

void display();

void top()

{

glBegin(GL\_TRIANGLES);

glColor3f(r1,r2,r3);

glVertex2f(100.0,400.0);

glVertex2f(150.0,400.0);

glVertex2f(125.0,450.0);

glEnd();

glFlush();

}

void body()

{

glBegin(GL\_QUADS);

glColor3f(b1,b2,b3);

glVertex2f(100.0,400.0);

glVertex2f(150.0,400.0);

glVertex2f(150.0,250.0);

glVertex2f(100.0,250.0);

glEnd();

glFlush();

}

void tail()

{

glBegin(GL\_TRIANGLES);

glColor3f(t1,t2,t3);

glVertex2f(100.0,250.0);

glVertex2f(150.0,250.0);

glVertex2f(75.0,100.0);

glVertex2f(100.0,250.0);

glVertex2f(150.0,250.0);

glVertex2f(175.0,100.0);

glEnd();

glFlush();

}

void display()

{

char key;

glClear(GL\_COLOR\_BUFFER\_BIT);

top();

body();

tail();

printf("press C to change color and Q to quit");

scanf("%c",&key);

if(key=='c'||key=='C')

change();

if(key=='q'||key=='Q')

exit(0);

}

void change()

{

int x;

do

{

printf("1.top\n 2.body\n 3.tail\n 4.quit\n enter your choice\n");

scanf("%d",&x);

switch(x)

{

case 1:printf("enter components of new top\n");

scanf("%f%f%f",&r1,&r2,&r3);

break;

case 2:printf("enter components of new body\n");

scanf("%f%f%f",&b1,&b2,&b3);

break;

case 3:printf("enter components of new tail\n");

scanf("%f%f%f",&t1,&t2,&t3);

break;

case 4:break;

}

}while(x!=4);

display();

}

void myinit()

{

glClearColor(0.0,0.0,0.0,1.0);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluOrtho2D(0.0,500.0,0.0,500.0);

glMatrixMode(GL\_MODELVIEW);

}

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

{

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE|GLUT\_RGB);

glutInitWindowSize(500,500);

glutInitWindowPosition(750.0,0.0);

glutCreateWindow("Rocket");

glutDisplayFunc(display);

myinit();

glutMainLoop();

}

Output:

