**Code :**

//Chandrayaan 3 Lunar Craft: Galactic Space Craft Control

public class galacticSpcControl

{

int x, y, z;

char facingDir;

public galacticSpcControl(int x, int y, int z, char facingDir)

{

this.x = x;

this.y = y;

this.z = z;

this.facingDir = facingDir;

}

void moveForward()

{

switch (facingDir)

{

case 'N':

y++;

break;

case 'S':

y--;

break;

case 'E':

x++;

break;

case 'W':

x--;

break;

case 'U':

z++;

break;

case 'D':

z--;

break;

}

}

void moveBackward()

{

switch (facingDir)

{

case 'N':

y--;

break;

case 'S':

y++;

break;

case 'E':

x--;

break;

case 'W':

x++;

break;

case 'U':

z--;

break;

case 'D':

z++;

break;

}

}

void moveCraft(char command)

{

switch (command)

{

case 'f':

moveForward();

break;

case 'b':

moveBackward();

break;

default:

System.out.println("enter valid command");

}

}

void rotateCraft(char command)

{

switch (command)

{

case 'l':

rotateLeft();

break;

case 'r':

rotateRight();

break;

case 'u':

rotateUp();

break;

case 'd':

rotateDown();

break;

default:

System.out.println("enter valid command");

}

}

void rotateLeft()

{

switch (facingDir)

{

case 'N':

facingDir = 'W';

break;

case 'S':

facingDir = 'E';

break;

case 'E':

facingDir = 'N';

break;

case 'W':

facingDir = 'S';

break;

}

}

void rotateRight()

{

switch (facingDir)

{

case 'N':

facingDir = 'E';

break;

case 'S':

facingDir = 'W';

break;

case 'E':

facingDir = 'S';

break;

case 'W':

facingDir = 'N';

break;

}

}

void rotateUp()

{

if (facingDir == 'N' || facingDir == 'S' || facingDir == 'E' || facingDir == 'W')

{

facingDir = 'U';

}

}

void rotateDown()

{

if (facingDir == 'N' || facingDir == 'S' || facingDir == 'E' || facingDir == 'W')

{

facingDir = 'D';

}

}

void printCraftPos()

{

System.out.println("\nposition of x y z and direction is : " + x +"," +y + "," +z +"," +" dir -> " +facingDir);

}

public static void main(String[] args)

{

galacticSpcControl c1 = new galacticSpcControl(0, 0, 0, 'W');

char[] commands = {'f', 'r', 'f', 'l', 'b', 'u'};

int i = commands.length;

for (char command : commands)

{

if (command == 'f' || command == 'b')

{

c1.moveCraft(command);

i--;

}

else

{

c1.rotateCraft(command);

i--;

}

c1.printCraftPos();

if(i==0)

{

System.out.println("\nFinal position of x y z and direction is:- ");

c1.printCraftPos();

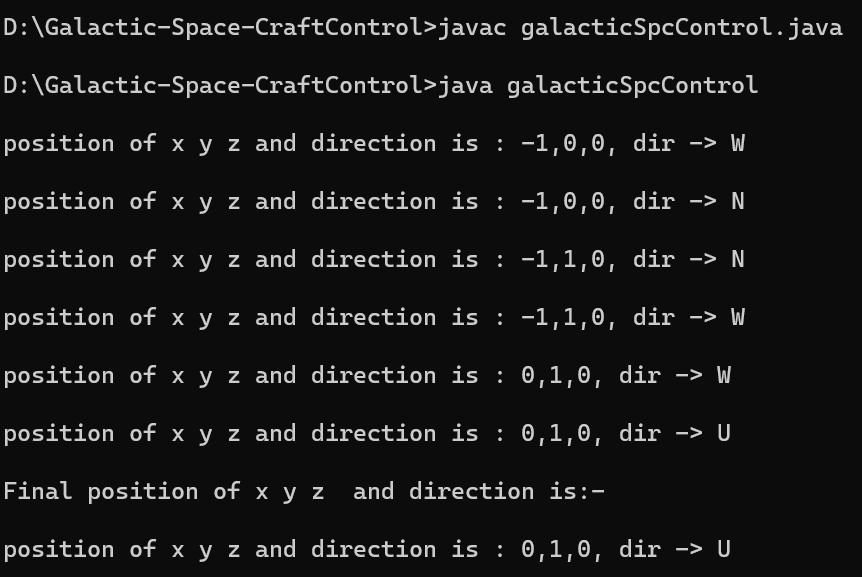
}

}

} //end of main

} //end of class

**Output :**

****