OOP ASSIGNMENT: 01

ABDULLAH RAZA

70125751 (B)

QUESTION: 01

```
#include <iostream>
using namespace std;

class Rectangle{

float Length, Width;
string Colour;

public:
static int objectsCount;

Rectangle(){
Length = 10;
Width = 20;
Colour = "white";
objectsCount++;
}
Rectangle(float l){
Length = l;
Width = 6.5;
Colour = "white";
objectsCount++;
}
```

```
Rectangle(float l, float w){
Length = l;
Width = w;
Colour = "white";
objectsCount++;
}
Rectangle(float l, float w, string col){
Length = l;
Width = w;
Colour = col;
objectsCount++;
}
float calPerimeter(){
return 2*(Length + Width);
}

float Area(){
return Length*Width;
}
string getColour(){
return Colour;
}

bool isSquare(){
if(Length == Width){
return true;
}
```

```
else{
return false;
}
}

};

int Rectangle::objectsCount=0;

int getTotalObjects(){
return Rectangle::objectsCount;
}

float averageArea(float first, float second, float third){
return (first+second+third)/3;
}

int main(int argc, char** argv) {
float area1, area2, area3;
int numberOfSqr = 0;
Rectangle r1(4.5), r2(7.6, 4), r3(2.6, 2.6, "pink");
cout << " Total Objects Created : " << getTotalObjects() << endl << endl;

if(r1.isSquare() == 1){
cout << " Object (1) is a square!" << endl;
numberOfSqr++;
}
```

```
if(r2.isSquare() == 1){
cout << " Object (2) is a square!" << endl;
numberOfSqr++;
}
if(r3.isSquare() == 1){
cout << " Object (3) is a square!" << endl;
numberOfSqr++;
}
if(r1.isSquare() != 1 && r2.isSquare() != 1 && r3.isSquare() != 1){
cout << " None of the Objects is a square!" << endl;
}
cout << " Total Number Of Squares: " << numberOfSqr << endl << endl;

if(r1.calPerimeter() > r2.calPerimeter() && r1.calPerimeter() > r3.calPerimeter()){
cout << " Rectangle (1) has the largest perimeter! Its colour is: " << r1.getColour() << endl;
}else if(r2.calPerimeter() > r1.calPerimeter() && r2.calPerimeter() > r3.calPerimeter()){
cout << " Rectangle (2) has the largest perimeter! Its colour is: " << r2.getColour() << endl;
}else{
cout << " Rectangle (3) has the largest perimeter! Its colour is: " << r3.getColour() << endl;
}

cout << "\n Average Area of All three Rectangles is: " << averageArea(r1.Area(), r2.Area(),
r3.Area()) << endl;

return 0;
}
```