I3305
Graphical Interface and Application
Lab 3 : Structural Patterns

Exercise 1:

We can calculate the area of a rectangle easily. If we see the Calculator class and its getArea() method, we'll know that we need to supply a rectangle as an input in the getArea() method to get the area of the rectangle.

```
class Rect
{
	public double l;
	public double w;
}
class Triangle
{
	public double b;//base
	public double h;//height
	public Triangle(int b, int h)
	{
		this.b = b;
		this.h = h;
	}
}


/*Calculator can calculate the area of a rectangle. To calculate the area we need a class Calculator*/

Class Calculator{
	Rect rectangle;
	public double getArea(Rect r)
	{
		rectangle=r;
		return rectangle.l * rectangle.w;
	}
}
```

Now suppose we want to calculate the area of a triangle, but we need to get the area of the triangle through the getArea() method of Calculator. How can we do that?

Exercise 2:

Suppose you are going to build/construct robots. How can we do that using Façade Pattern?

```
public class RobotBody
{
	public void CreateBody()
	{
		System.out.println("Body Creation done");
	}
}


public class RobotColor
{
	private String color;
	public void SetColor(String color)
	{
		this.color = color;
		System.out.println("Color is set to : "+ this.color);
	}
}


public class RobotMetal
{
	private String metal;
	public void SetMetal(String metal)
	{
		this.metal=metal;
		System.out.println("Metal is set to : "+this.metal);
	}
}
```