Assignment 12

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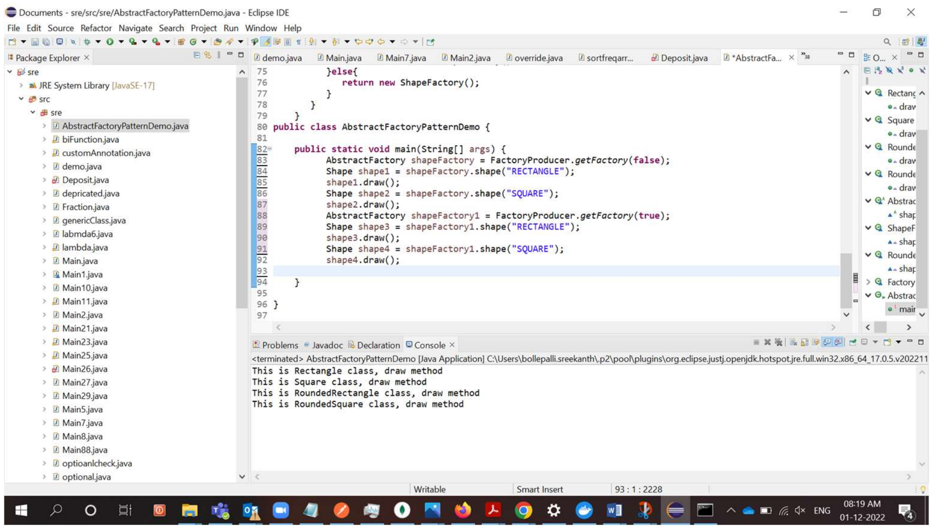
1A.

```
package sre;
 interface Shape{
 	void draw();
 }
 class Rectangle implements Shape{

	@Override
	public void draw() {
		System.out.println("This is Rectangle class, draw method");

	}

 }
 class Square implements Shape{

	@Override
	public void draw() {
		System.out.println("This is Square class, draw method");

	}

 }
 class RoundedRectangle implements Shape{

		@Override
		public void draw() {
			System.out.println("This is RoundedRectangle class, draw 
method");

		}

	 }
 class RoundedSquare implements Shape{

		@Override
		public void draw() {
			System.out.println("This is RoundedSquare class, draw 
method");

		}

	 }
 abstract class AbstractFactory{
 	abstract Shape shape(String type) ;

 }
 class ShapeFactory extends AbstractFactory{
```

```
	@Override
	Shape shape(String type) {
		if(type.equalsIgnoreCase("RECTANGLE")){
		    return new Rectangle();
		 }else if(type.equalsIgnoreCase("SQUARE")){
		    return new Square();
		 }
		 return null;
	}

 }
 class RoundedShapeFactory extends AbstractFactory{

	@Override
	Shape shape(String type) {
		if(type.equalsIgnoreCase("RECTANGLE")){
		    return new RoundedRectangle();
		 }else if(type.equalsIgnoreCase("SQUARE")){
		    return new RoundedSquare();
		 }
		 return null;
	}

 }
 class FactoryProducer {
	   public static AbstractFactory getFactory(boolean rounded){
		if(rounded){
		   return new RoundedShapeFactory();
		}else{
		   return new ShapeFactory();
		}
	   }
	}
public class AbstractFactoryPatternDemo {

	public static void main(String[] args) {
		AbstractFactory shapeFactory = FactoryProducer.getFactory(false);
		Shape shape1 = shapeFactory.shape("RECTANGLE");
		shape1.draw();
		Shape shape2 = shapeFactory.shape("SQUARE");
		shape2.draw();
		AbstractFactory shapeFactory1 = FactoryProducer.getFactory(true);
		Shape shape3 = shapeFactory1.shape("RECTANGLE");
		shape3.draw();
		Shape shape4 = shapeFactory1.shape("SQUARE");
		shape4.draw();

	}

}
```

Output:

```
This is Rectangle class, draw method
This is Square class, draw method
This is RoundedRectangle class, draw method
This is RoundedSquare class, draw method
```



```java
            }else{
                return new ShapeFactory();
            }
        }
    }
public class AbstractFactoryPatternDemo {

    public static void main(String[] args) {
        AbstractFactory shapeFactory = FactoryProducer.getFactory(false);
        Shape shape1 = shapeFactory.shape("RECTANGLE");
        shape1.draw();
        Shape shape2 = shapeFactory.shape("SQUARE");
        shape2.draw();
        AbstractFactory shapeFactory1 = FactoryProducer.getFactory(true);
        Shape shape3 = shapeFactory1.shape("RECTANGLE");
        shape3.draw();
        Shape shape4 = shapeFactory1.shape("SQUARE");
        shape4.draw();

    }

}
```

```
<terminated> AbstractFactoryPatternDemo [Java Application] C:\Users\bollepalli.sreekanth\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.5.v202211
This is Rectangle class, draw method
This is Square class, draw method
This is RoundedRectangle class, draw method
This is RoundedSquare class, draw method
```