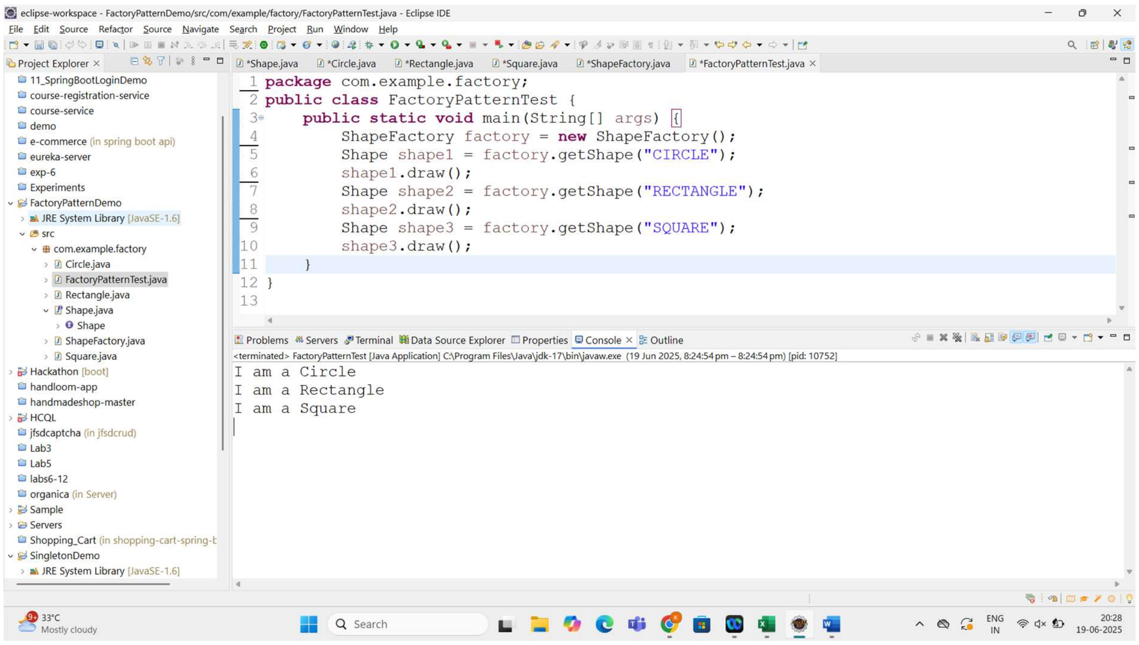
Exercise 2: Implementing the Factory Method Pattern

```
package com.example.factory;
public interface Shape {
    void draw();
}
package com.example.factory;
public class Circle implements Shape {
    @Override
    public void draw() {
        System.out.println("I am a Circle");
    }
}
package com.example.factory;
public class Rectangle implements Shape {
    @Override
    public void draw() {
        System.out.println("I am a Rectangle");
    }
}
package com.example.factory;
public class Square implements Shape {
    @Override
    public void draw() {
        System.out.println("I am a Square");
    }
}
package com.example.factory;
public class ShapeFactory {
    public Shape getShape(String shapeType) {
        if (shapeType == null) return null;
        if (shapeType.equalsIgnoreCase("CIRCLE")) {
            return new Circle();
        } else if (shapeType.equalsIgnoreCase("RECTANGLE")) {
            return new Rectangle();
        } else if (shapeType.equalsIgnoreCase("SQUARE")) {
            return new Square();
        }
        return null;
    }
}

package com.example.factory;
public class FactoryPatternTest {
    public static void main(String[] args) {
        ShapeFactory factory = new ShapeFactory();
        Shape shape1 = factory.getShape("CIRCLE");
        shape1.draw();
        Shape shape2 = factory.getShape("RECTANGLE");
        shape2.draw();
        Shape shape3 = factory.getShape("SQUARE");
        shape3.draw();
    }
}
```

OUTPUT:



```java
package com.example.factory;
public class FactoryPatternTest {
    public static void main(String[] args) {
        ShapeFactory factory = new ShapeFactory();
        Shape shape1 = factory.getShape("CIRCLE");
        shape1.draw();
        Shape shape2 = factory.getShape("RECTANGLE");
        shape2.draw();
        Shape shape3 = factory.getShape("SQUARE");
        shape3.draw();
    }
}
```

<terminated> FactoryPatternTest [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (19 Jun 2025, 8:24:54 pm – 8:24:54 pm) [pid: 10752]

```
I am a Circle
I am a Rectangle
I am a Square
```