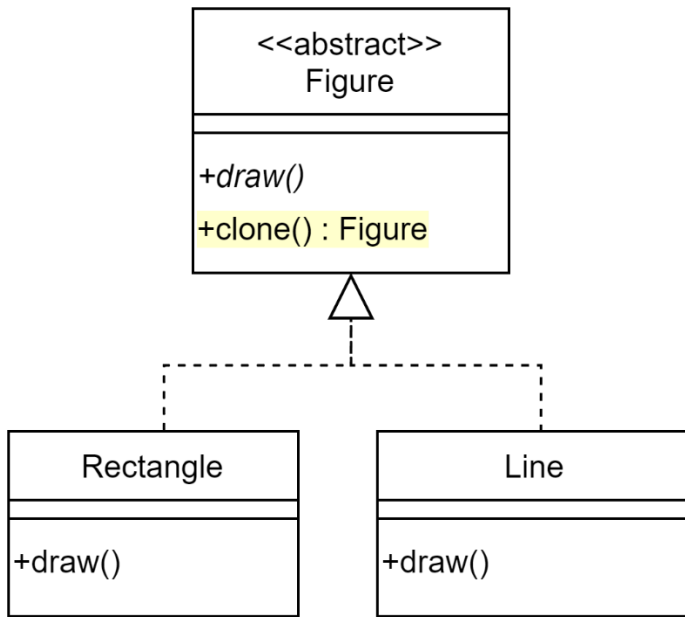# 1) 개요

2) Figure.java

```
1   package prototype.f1;
2
3   public abstract class Figure implements Cloneable {
4
5       public abstract void draw();
6
7       @Override
8       public Figure clone() throws CloneNotSupportedException {
9           return (Figure)super.clone();
10      }
11  }
```

3) Rectangle.java

```
1   package prototype.f1;
2
3   public class Rectangle extends Figure {
4       String label;
5
6       public Rectangle(String label) {
7           this.label = label;
8       }
9
10      @Override
11      public void draw() {
12          System.out.printf("Rectangle(%s)\n", label);
13      }
14  }
```

4) Line.java

```
1   package prototype.f1;
2
3   public class Line extends Figure {
4       String label;
5
6       public Line(String label) {
7           this.label = label;
8       }
9
10      @Override
11      public void draw() {
12          System.out.printf("Line(%s)\n", label);
13      }
14  }
```

5) Example1.java

```java
package prototype.f1;

import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

public class Example1 {

    static List<Figure> figures = new ArrayList<Figure>();

    static void drawFigures() {
        System.out.println();
        for (int i = 0; i < figures.size(); ++i) {
            System.out.printf("%d: ", i);
            figures.get(i).draw();
        }
        System.out.println();
    }

    static void execute(String cmd) {
        try {
            String[] a = cmd.split(" +");
            switch (a[0].toLowerCase()) {
            case "rectangle": figures.add(new Rectangle(a[1])); break;
            case "line": figures.add(new Line(a[1])); break;
            case "remove":
                int index = Integer.valueOf(a[1]);
                figures.remove(index);
                break;
            case "duplicate":
                Figure figure = figures.get(Integer.valueOf(a[1]));
                figures.add(figure.clone());
                break;
            case "quit": System.exit(0); break;
            }
        } catch (Exception e) {
        }
    }

    static void prompt() {
        System.out.printf("  사각형 : rectangle 레이블\n");
        System.out.printf("  선     : line 레이블\n");
        System.out.printf("  삭제    : remove 도형번호\n");
        System.out.printf("  복제    : duplicate 도형번호\n");
        System.out.printf("  종료    : quit\n");
        System.out.printf("  ? ");
    }

    public static void main(String[] args) {
        try (Scanner scanner = new Scanner(System.in)) {
            while (true) {
                prompt();
                String cmd = scanner.nextLine();
                execute(cmd);
                drawFigures();
            }
        }
    }
}
```