1.Abstract class

```
abstract class Shape {
    abstract void draw();  // Abstract method
}


class Circle extends Shape {
    void draw() {
        System.out.println("Drawing a Circle");
    }
}


class Square extends Shape {
    void draw() {
        System.out.println("Drawing a Square");
    }
}


public class Main {
    public static void main(String[] args) {

        Shape s1 = new Circle();
```

```
        Shape s2 = new Square();

        s1.draw();  // Calls Circle's method
        s2.draw();  // Calls Square's method
    }
}
```

Output:

Drawing a Circle

Drawing a Square

2.Expection handling

```
public class Main {
    public static void main(String[] args) {
        try {
            int a = 10 / 0;   // ❌ Error (divide by zero)
            System.out.println(a);
        } catch (Exception e) {
            System.out.println("Error: " + e);
        }
        System.out.println("Program continues...");
    }
}
```

Output:

Error: java.lang.ArithmeticException: / by zero

Program continues…

3. legacy class

```
import java.util.Stack;
import java.util.Vector;

public class Main {
    public static void main(String[] args) {
        // Legacy class: Vector
        Vector<String> vector = new Vector<>();
        vector.add("Car");
        vector.add("Bike");
        vector.add("Bus");
        System.out.println("Vector: " + vector);

        // Legacy class: Stack
        Stack<String> stack = new Stack<>();
        stack.push("Apple");
        stack.push("Banana");
        stack.push("Mango");
        System.out.println("Stack: " + stack);
```

```
        // Stack operations
        System.out.println("Popped: " + stack.pop());
        System.out.println("Top element: " + stack.peek());
        System.out.println("Final Stack: " + stack);
    }
}
```

Output:

Vector: [Car, Bike, Bus]

Stack: [Apple, Banana, Mango]

Popped: Mango

Top element: Banana

Final Stack: [Apple, Banana]

4.Utility Classes

```
import java.util.*;      // for Date and Calendar
import java.util.Scanner; // for Scanner

public class Main {
    public static void main(String[] args) {
        // 1. Scanner class (for input)
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter your name: ");
        String name = sc.nextLine();
        System.out.println("Hello, " + name);
```

```
        // 2. Date class (current date and time)
        Date date = new Date();
        System.out.println("Current Date and Time: " + date);

        // 3. Calendar class
        Calendar cal = Calendar.getInstance();
        System.out.println("Year: " + cal.get(Calendar.YEAR));
        System.out.println("Month: " + (cal.get(Calendar.MONTH) + 1)); // +1 because month starts from 0
        System.out.println("Day: " + cal.get(Calendar.DAY_OF_MONTH));
    }
}
```

Output:

```
Enter your name: Vignesh
Hello, Vignesh
Current Date and Time: Wed Sep 10 12:45:32 IST 2025
Year: 2025
Month: 9
Day: 10
```