

Slip 5

10 Marks:

```
java
Copy code
import java.util.Scanner;

public class MyNumber {
    private int x;

    public MyNumber() {
        x = 0;
    }

    public MyNumber(int x) {
        this.x = x;
    }

    public boolean isNegative() {
        return x < 0;
    }

    public boolean isPositive() {
        return x > 0;
    }

    public boolean isEven() {
        return x % 2 == 0;
    }

    public boolean isOdd() {
        return x % 2 != 0;
    }

    public boolean isZero() {
        return x == 0;
    }

    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number:");
        int x = sc.nextInt();
        MyNumber m = new MyNumber(x);

        if (m.isOdd()) System.out.println("Odd");
        if (m.isEven()) System.out.println("Even");
        if (m.isPositive()) System.out.println("Positive");
        if (m.isNegative()) System.out.println("Negative");
        if (m.isZero()) System.out.println("Zero");
    }
}
```

20 Marks:

```

java
Copy code
import java.awt.*;
import java.awt.event.*;

class InvalidPasswordException extends Exception {
    InvalidPasswordException() {
        super("Username and Password are not the same");
    }
}

public class PasswordDemo extends Frame implements ActionListener {
    private TextField nameField, passField, msgField;
    private int attempts = 0;
    private static final int MAX_ATTEMPTS = 3;

    PasswordDemo() {
        setLayout(new FlowLayout());
        add(new Label("Username:"));
        nameField = new TextField(20);
        add(nameField);
        add(new Label("Password:"));
        passField = new TextField(20);
        passField.setEchoChar('*');
        add(passField);
        Button loginButton = new Button("Login");
        Button clearButton = new Button("Clear");
        loginButton.addActionListener(this);
        clearButton.addActionListener(this);
        add(loginButton);
        add(clearButton);
        msgField = new TextField(10);
        msgField.setEditable(false);
        add(msgField);
        setTitle("Login");
        setSize(290, 200);
        setResizable(false);
        setVisible(true);
    }

    public void actionPerformed(ActionEvent e) {
        String command = e.getActionCommand();
        if (attempts >= MAX_ATTEMPTS) {
            System.out.println("You have used all attempts");
            System.exit(0);
        }
        if ("Clear".equals(command)) {
            nameField.setText("");
            passField.setText("");
        } else if ("Login".equals(command)) {
            try {
                if (nameField.getText().equals(passField.getText())) {
                    msgField.setText("Valid");
                } else {
                    throw new InvalidPasswordException();
                }
            } catch (InvalidPasswordException ex) {

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        msgField.setText("Error");
        System.out.println(ex.getMessage());
    }
    attempts++;
}

public static void main(String[] args) {
    new PasswordDemo();
}
}
```