Part 8: Flow Control - Java Challenges & Code

1. Use if-else to determine if a number is positive, negative, or zero

```
import java.util.Scanner;

public class NumberSign {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int number = sc.nextInt();

        if (number > 0)
            System.out.println("Positive");
        else if (number < 0)
            System.out.println("Negative");
        else
            System.out.println("Zero");
    }
}
```

2. Implement nested if to find the largest among 3 numbers

```
import java.util.Scanner;

public class LargestOfThree {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter three numbers: ");
        int a = sc.nextInt();
        int b = sc.nextInt();
        int c = sc.nextInt();

        if (a > b) {
            if (a > c)
                System.out.println("Largest is: " + a);
            else
                System.out.println("Largest is: " + c);
        } else {
            if (b > c)
                System.out.println("Largest is: " + b);
            else
                System.out.println("Largest is: " + c);
        }
    }
}
```

3. Validate login with username and password

```
import java.util.Scanner;

public class LoginValidation {
```

```
    public static void main(String[] args) {
        final String USERNAME = "admin";
        final String PASSWORD = "1234";

        Scanner sc = new Scanner(System.in);
        System.out.print("Username: ");
        String user = sc.nextLine();
        System.out.print("Password: ");
        String pass = sc.nextLine();

        if (user.equals(USERNAME) && pass.equals(PASSWORD)) {
            System.out.println("Login successful");
        } else {
            System.out.println("Invalid username or password");
        }
    }
}
```

4. Categorize age groups using if-else ladder

```
import java.util.Scanner;

public class AgeGroup {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter age: ");
        int age = sc.nextInt();

        if (age < 13)
            System.out.println("Child");
        else if (age < 20)
            System.out.println("Teenager");
        else if (age < 60)
            System.out.println("Adult");
        else
            System.out.println("Senior");
    }
}
```

5. Determine student grade using percentage

```
import java.util.Scanner;

public class StudentGrade {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter percentage: ");
        double percent = sc.nextDouble();

        if (percent >= 90)
            System.out.println("Grade: A");
        else if (percent >= 80)
            System.out.println("Grade: B");
        else if (percent >= 70)
```

```
            System.out.println("Grade: C");
        else if (percent >= 60)
            System.out.println("Grade: D");
        else
            System.out.println("Grade: F");
    }
}
```