Flow Control

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

```
int num = 0;
if (num > 0)
   System.out.println("Positive Number");
else if (num < 0)
   System.out.println("Negative Number");
else
   System.out.println("Zero");
```

Output:
Zero

Challenge 2: Implement nested if to find the largest among 3 numbers

```
int a = 10, b = 20, c = 15;
if (a >= b) {
   if (a >= c)
      System.out.println("Largest: " + a);
   else
      System.out.println("Largest: " + c);
} else {
   if (b >= c)
      System.out.println("Largest: " + b);
   else
      System.out.println("Largest: " + c);
}
```

Output:
Largest: 20

Challenge 3: Validate login with username and password

```
Scanner sc = new Scanner(System.in);
System.out.print("Enter username: ");
```

```
String user = sc.next();
System.out.print("Enter password: ");
String pass = sc.next();

if (user.equals("admin") && pass.equals("1234"))
   System.out.println("Login Successful");
else
   System.out.println("Invalid Credentials");
```

Output:
Enter username: admin
Enter password: 1234
Login Successful

Challenge 4: Categorize age groups using if-else ladder

```
int age = 45;
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 Citizen");
```

Output:
Adult

Challenge 5: Determine student grade using percentage

```
int percentage = 82;
if (percentage >= 90)
   System.out.println("Grade: A");
else if (percentage >= 80)
   System.out.println("Grade: B");
else if (percentage >= 70)
```

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

Output:
Grade: B