Lab: Conditional Statements

Problems for lab exercise for the "**Programming Basics**" course [@ SoftUni Global](#).

Submit your code in the Judge system: https://judge.softuni.org/Contests/2389/Conditional-Statements-Lab

1. Excellent Result

Write a **console program** that **reads a rating** (integer) entered by the user and prints "**Excellent**!" if the score is 5 or higher.

Input	Output
6	Excellent!

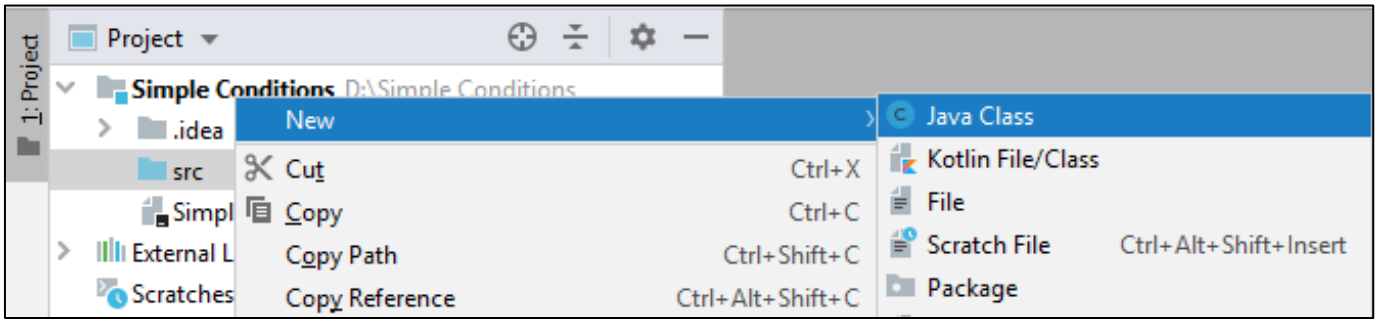
Input	Output
4	*(no output)*

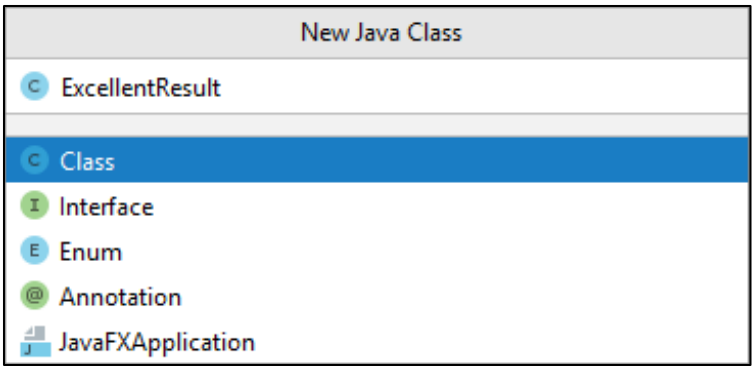
Input	Output
5	Excellent!

Input	Output
3	*(no output)*

Hints and Guidelines:

1. Create a **new class** in the existing IntelliJ project. Right-click on the "**src**" **folder**. Select [New] → [Java Class]:





You already have a project with one class in it. It remains to write the code to solve the task.

2. Create a **main** method by going to the "**ExcellentResult**" class (between curly brackets) and type:

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

    }
}
```

3. Go to the body of the **main (String [] args)** method (between the curly braces). Create a **Scanner** object to read from the console and read a **floating-point** number - the grade:

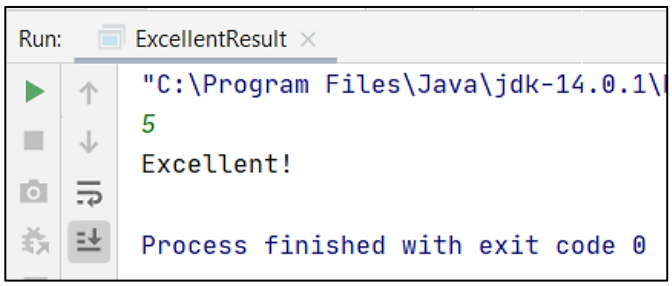
```java
public class ExcellentResult {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int grade = Integer.parseInt(scanner.nextLine());
    }
}
```

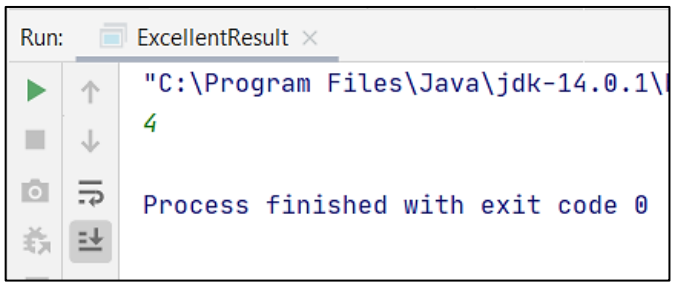
4. Check the value of the assessment. If it is greater than or equal to 5, print the conditional output:

```java
public class ExcellentResult {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int grade = Integer.parseInt(scanner.nextLine());

        if (grade >= 5) {
            System.out.println("Excellent!");
        }
    }
}
```

5. **Start** the program with **[Ctrl + Shift + F10]** and **test it** with different input values:





2. Greater Number

Write a program that reads **two integers** entered by the user and **prints the larger of the two**.

Sample Input and Output

Input	Output
5 3	5

Input	Output
3 5	5

Input	Output
10 10	10

Input	Output
-5 5	5

Hints and Guidelines

1. Read two **integers** from the console:

```java
public class GreaterNumber {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        int num1 = Integer.parseInt(scan.nextLine());
        int num2 = Integer.parseInt(scan.nextLine());
    }
}
```

2. Compare whether the first number **num1** is greater than the second **num2**. Print the larger number.

```java
if (num1 > num2) {
    System.out.println(num1);
} else {
    System.out.println(num2);
}
```

3. Even or Odd

Write a program that reads an integer entered by the user and prints whether it is even or odd.

Sample Input and Output

Input	Output
2	even

Input	Output
3	odd

Input	Output
25	odd

Input	Output
1024	even

Hints and Guidelines

1. First, add a **new Java class** to the existing project.
2. Create a **Scanner** object and read an integer from the console:

```java
public class OddOrEven {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        int number = Integer.parseInt(scan.nextLine());
    }
}
```

3. Check that the number is even by dividing it by 2, and check what is the remainder of the division. Print the output depending on the condition:

```java
public class OddOrEven {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        int number = Integer.parseInt(scan.nextLine());

        if (number % 2 == 0) {
            System.out.println("even");
        } else {
            System.out.println("odd");
        }
    }
}
```

4. Password Guess

Write a program that reads a password (**string**) entered by the user and checks if the entered password matches the phrase "**s3cr3t!P@ssw0rd**". In case of coincidence, display "**Welcome**". In case of discrepancy, display "**Wrong password!**".

Sample Input and Output

Input	Output
qwerty	Wrong password!

Input	Output
s3cr3t!P@ssw0rd	Welcome

Input	Output
s3cr3t!p@ss	Wrong password!

5. Number 100...200

Write a program that reads an **integer** entered by the user and checks if it is **below 100**, **between 100** and 200 or **above 200**. If the number is:

- below 100 print: **"Less than 100"**
- between 100 and 200 print: **"Between 100 and 200"**
- above 200 print: **"Greater than 200"**

Sample Input and Output

Input	Output
95	Less than 100

Input	Output
120	Between 100 and 200

Input	Output
210	Greater than 200

6. Speed Info

Write a program that reads the speed (**floating-point number**) entered by the user and **prints speed information**.

- At speed up to **10** (inclusive) print **"slow"**
- At speed between **10** and **50** (inclusive) print **"average"**
- At speed between **50** and **150** (inclusive) print **"fast"**
- At speed between **150** and **1000** (inclusive) print **"ultra fast"**
- At a higher speed print **"extremely fast"**

Sample Input and Output

Input	Output
8	slow

Input	Output
49.5	average

Input	Output
126	fast

Input	Output
160	ultra fast

Input	Output
3500	extremely fast

7. Area of Figures

Write a program in which the user enters the type and **dimensions of a geometric figure** and **calculates its area**. The figures are of four types: **square**, **square**, **rectangle**, **circle**, and **triangle**. The first line of the input reads the type of figure (**string** with the following options: **square**, **rectangle**, **circle**, or **triangle**).

- If the figure is a **square**: on the next line read a **floating-point number** - the length of its side
- If the figure is a **rectangle**: on the next two lines read two **floating-point numbers** - the lengths of its sides
- If the figure is a **circle**: on the next line read a **floating-point number** - the radius of the circle
- If the figure is a **triangle**: on the next two lines read two **floating-point numbers** - the length of its side and the length of the height to it

Round the result up to **3 digits** after the decimal point.

Sample Input and Output

Input	Output
square 5	25.000

Input	Output
rectangle 7 2.5	17.500

Input	Output
circle 6	113.097

Input	Output
triangle 4.5 20	45.000