# Lab: Conditional statements

Class and homework assignments to the ["Basics of Programming" course@ SoftUni](https://softuni.bg/courses/programming-basics) .

Test your decisions in the **Judge** system: [https://judge. softuni. bg/Contests/2389](https://judge.softuni.bg/Contests/2389)

## 1. Check for excellent rating

Write **a console program that** reades a rating **(integer)** entered by the userand prints "Excellent! **"** if the rating is **5** orhigher.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |
| 6 | Excellent! | 4 | *(no output)* | 5 | Excellent! | 3 | *(no output)* |

### Guidelines:

1. Create a **new** class in the existing IntelliJ project. Right click on the **src"** 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 square brackets) and typing:

3. Go to the body of the main(String[] args) (between the curly brackets). Create a Scanner object to read from the console and read one **real number** - the rating:

4. Check the valuation value. If it is greater than or equal to 5.50, print the output as required:

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

## 2. Find the larger number

Write a program that reads two **integers** entered by the userand prints **the-larger of the two** .

### Sample input and output

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |
| 5  3 | 5 | 3  5 | 5 | 10  10 | 10 | -5  5 | 5 |

### Guidelines:

1. Read 2 integers from the console:

2. Compare whether the first number num 1 is greater than the second num 2.Print bythelarger number.

## 3. Even or odd

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

### Sample input and output

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |
| 2 | even | 3 | odd | 25 | odd | 1024 | even |

### Guidelines:

1. First add a **new Java** **class** to the existing project

2. Create a Scanner object and read an integer from the console:

3. Check that the number is even by performing a division of 2 with a residue and check if there is a balance left. Print the output as required – the text "even":

4. Otherwise print "odd":

## 4. Number from 100 to 200

Write a program that **reads an integer**entered by the userand checks that it is **below 100**, **between 100 and 200** or more **than 200**. Print messages accordingly, as in the examplesbelow:

### Sample input and output

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |
| 95 | Less than 100 | 120 | Between 100 and 200 | 210 | Greater than 200 |

## 5. Guess the password

Write a program that **reads a password** (one line of random text)entered by the userand checks that the entry **matches** the phrase "s3cr3t! P@ssw0rd". In case of a match, display **"Welcome".** In case of mismatch to display " Wrong**password !**".

### Sample input and output

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |
| Qwerty | Wrong password! | s3cr3t! P@ssw0rd | Welcome | s3cr3t!p@ss | Wrong password! |

## 6. Figures

Write a program inwhich the user enters the type and **dimensions of a geometric** shape and calculates its face. The figures are of four types :**square** , **rectangle,circle** and **triangle.** On the first row of the entrance read the type of figure (square, rectangle, circle or triangle). If the figure is **a square**, one number is read on the next row - the length of its side. If the figure is **a rectangle**, the next two rows read two numbers - the lengths of its sides. If the figure is **a circle,** the next row read one number - the radius of the circle. If the figure is **a triangle,** the next two rows read two numbers - the length of its side and the length of the height to it. Round the result to **3 digits after** the **decimal point** .

### Sample input and output

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |  | **Login** | **Issue** |
| square  5 | 25.000 | rectangle  7  2.5 | 17.500 | circle  6 | 113.097 | triangle  4.5  20 | 45.000 |

# Sample exam task

## 7. Toy Store

Petya has a toy store. It receives a large order that it must execute. With the money he's going to earn, he wants to go on a trip. Write a program that calculates the profit from the order.

**Toy prices:**

         **Puzzle - 2.60 BGN**

         **Talking doll - 3 BGN**

         **Teddy bear - 4.10 BGN**

         **Mignon - 8.20 BGN**

         **Truck - BGN 2**

If the toys ordered are 50 or more, the store makes a discount of **25% of** the total price. From the money earned, Petya must **give 10% for** the store&apos;s rent.

### Login

6 lines are read **from the console**:

**1. Price of the excursion - real number in the interval [1.00 ... 10000.00]**

**2. Number of puzzles - integer in the interval [0... 1000]**

**3. Number of talking dolls - integer in the interval [0 ... 1000]**

**4. Number of teddy bears - integer in the interval [0 ... 1000]**

**5. Number of mignons - integer in the interval [0 ... 1000]**

**6. Number of trucks - integer in the interval [0 ... 1000]**

### Issue

The console prints:

* If **the money is sufficient,** print:
  + **" Yes! {remaining money} lv left ."**
* If **the money IS NOT enough, print:**
  + **"Not enough money! {the shortage of money**} lv**needed."**

**The result must be formatted to two decimal places**.

### Sample input and output

|  |  |  |
| --- | --- | --- |
| **Login** | **Issue** | **Explanations** |
| 40.8  20  25  30  50  10 | Yes! 418.20 lv left. | **Amount**: 20 \* 2.60 + 25 \* 3 + 30 \* 4.10 + 50 \* 8.20 + 10 \* 2 = **680** lv.  **Number of toys**: 20 + 25 + 30 + 50 + 10 = **135**  **135 > 50 => 25% discount;** 25% off 680 = **170 BGN discount**  **Total price**: 680 – 170 = **510** BGN  **Rent**: 10% from 510 BGN = **51** BGN  **Profit**: 510 – 51 = **459** BGN  **459 > 40.8** =>459 –40.8 = **418.20** BGN **remain** |
| **Login** | **Issue** | **Explanations** |
| 320  8  2  5  5  1 | Not enough money! 238.73 lv needed. | **Amount**: **90.3** лв.  **Number of toys**: **21**  **21 < 50 => no discount**  **Rent**: 10% from 90.3 in BGN **= 9.03**  **Profit**: 90.3 – 9.03 = **81.27** BGN  **81.27 < 320** =>320 – 81.27 = **238.73** BGN **do not reach** |