# Exercise: Conditional Statements

Tasks for exercising from the free course ["C - Essentials" @ SoftUni](https://softuni.bg/trainings/2940/c-essentials-march-2020).

Test your solutions in the judge system here: <https://judge.softuni.bg/Contests/Practice/Index/2278>

## Excellent Result

### Write a Program That Reads a Single Real Number Representing Grade and Print "Excellent!" If the Value is Not Less Than 5.50.

### Examples:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 6 | Excellent! | 5 | *none* | 5.50 | Excellent! | 5.49 | *none* |

## Greater Number

Read two integer numbers and print **the greater** one.

### Examples:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 5  3 | 5 | 3  5 | 5 | 10  10 | 10 | -5  5 | 5 |

## 3. Even or Odd

Read an integerand print if the number **is even or odd**.

### Examples:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 2 | even | 3 | odd | 25 | odd | 1024 | even |

## 4. Number 1…9 to Text

Read an integerif the number is in the **range [1-9]** print its name otherwise print "**number too big**".

### Examples:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 5 | five | 1 | one | 9 | nine | 10 | number too big |

## 5. 3 Equal Numbers

Read three numbers and print if they are equal **(yes / no)**

### Examples:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 1  1  1 | yes | 5  5  5 | yes | 1  2  3 | no | 11  8  5 | no | 13  14  99 | no |

**\*Hint**: Try to find information about **&& operator**.

## 6. Number 100...200

Read an integer and check if that number is less than **100** between **100 and 200** or greater than **200**. Use the examples blow to find out what the output must be:

### Examples:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 95 | Less than 100 | 120 | Between 100 and 200 | 210 | Greater than 200 |

## 7. Password Guess

Read text from the console and check if the input is equal to "s3cr3t!P@ssw0rd"If it is print "**Welcome**", otherwise print "**Wrong password!**"

### Examples:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| qwerty | Wrong password! | s3cr3t!P@ssw0rd | Welcome | s3cr3t!p@ss | Wrong password! |

## 8. Area of Figures

Read the type of geometric shape and according to that type read the parameters required to calculate the area of the shape. There will be only four types of shapes: **square**, **rectangle**, **circle** and **triangle**. The result should be formatted up to three digits after the decimal point.

### Examples:

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

## 9. Day of Week

Read an integer that represents a day of the week. If that number is invalid day print "Error".

### Examples:

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1 | Monday |
| 2 | Tuesday |
| 3 | Wednesday |
| 4 | Thursday |
| 5 | Friday |
| 6 | Saturday |
| 7 | Sunday |
| -1 | Error |

## 10. Animal Type

Read an animal type and print the animal class.

* **dog -> mammal**
* **crocodile, tortoise, snake -> reptile**
* **others -> unknown**

### Examples:

|  |  |
| --- | --- |
| **Input** | **Output** |
| dog | mammal |
| snake | reptile |
| cat | unknown |

# Example of Examination Problem

## 11. \* Toy Shop

Petq owns toy shop. She gets huge order. With the profit she wants to go on a vacation. Develop a program that calculates the profit.

**Toy prices are as follows:**

* **Puzzle - 2.60 lv.**
* **Doll – 3.00 lv.**
* **Teddy bear - 4.10 lv.**
* **Minion - 8.20 lv.**
* **Truck – 2.00 lv.**

If the order consist of 50 or more toys the shop sells them with **25%** **discount**. **10% of the profit are spend for rent**. Check if the profit is enough for the planed vacation.

### Input

Read six lines:

1. **Vacation price – real number [1.00 … 10000.00]**
2. **Puzzles count - integer [0… 1000]**
3. **Dolls count - integer [0 … 1000]**
4. **Teddy bears count - integer [0 … 1000]**
5. **Minions count - integer [0 … 1000]**
6. **Trucks count - integer [0 … 1000]**

### Output

Two possible outputs **only** **single message should be displayed**:

* If the profit is enough for the vacation:
  + **"Yes! {money\_left} lv left."**
* If the profit is **not** enough for the vacation:
  + **"Not enough money! {insufficient\_funds} lv needed."**

**The output for real numbers should be formatted to the second digit after the decimal point**.

### Examples:

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Hints** |
| 40.8  20  25  30  50  10 | Yes! 418.20 lv left. | **Sum**: 20 \* 2.60 + 25 \* 3 + 30 \* 4.10 + 50 \* 8.20 + 10 \* 2 = **680** lv.  **Toys count**: 20 + 25 + 30 + 50 + 10 = **135**  **135 > 50 => 25% discount**; 25% \* 680 = **170 lv.**  **Payment**: 680 – 170 = **510** lv.  **Rent**: 10% от 510 lv. = **51** lv.  **Profit**: 510 – 51 = **459** lv.  **459 > 40.8** =>459 – 40.8= **418.20** lv. **remaining** |
| **Input** | **Output** | **Hints** |
| 320  8  2  5  5  1 | Not enough money! 238.73 lv needed. |  |

## 12. \* Scholarship

There are two types of scholarships given to student the first is the social and the other is for excellence. The requirement for social scholarship is – income per family member less than **the minimum wage and grades above 4.5**. The amount of this scholarship is – **35% of the minimum wage**. The requirement for excellence scholarship – **grades not less than 5.5**. Excellence scholarship amount **the student's grades multiplied by 25**.

Write a program that by given income grade and minimum wage prints information if the student can receive a scholarship and the amount of that scholarship. **If the student can get both types of scholarship he gets the one with higher amount, if the both amount are equal the student gets the one for excellence.**

### Input

Read from the console three lines:

1. **Income** – **real number [0.00..6000.00]**
2. Average grades- **real number [2.00...6.00]**
3. Minimum wage - **real number [0.00..1000.00]**

### Output

* If the student can't receive scholarship:

**"You cannot get a scholarship!"**

* If the student can get social scholarship:  
  **"You get a Social scholarship {amount} BGN"**
* If the student can get excellence scholarship:

**"You get a scholarship for excellent results {amount} BGN"**

**The result should be rounded to the previous integer number.**

### Examples:

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Hints** |
| 480.00  4.60  450.00 | You cannot get a scholarship! | The student could not get social scholarship since the income is greater than the minimum wage.  Grade 4.60 < 5.50 → the student could not get the excellence scholarship too. |
| 300.00  5.65  420.00 | You get a Social scholarship 147 BGN | 300 lv. < 420 lv. and 5.65 >4.50 → the social scholarship is equal to 35% \* 420 lv. = 147 lv.  Grades 5.65 > 5.50 → the excellence scholarship 5.65 \* 25 = 141.25 lv.  147 lv. > 141.25 lv. → the student will get the social scholarship. |