**Exercise: Intro and Basic Syntax**

Problems for exercises and homework for the ["C# Fundamentals" course @ HYPERLINK "https://softuni.bg/trainings/2363/csharp-fundamentals-may-2019"SoftUni](https://softuni.bg/trainings/2363/csharp-fundamentals-may-2019)  
You can check your solutions in [Judge](https://judge.softuni.bg/Contests/1204)

* **Ages**

Write a program that determines whether based on the given age a person is: baby, child, teenager, adult, elder. The bounders are:

* **0-2 – baby;**
* **3-13 – child;**
* **14-19 – teenager;**
* **20-65 – adult;**
* **>=66 – elder;**
* All the values are **inclusive**.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 20 | adult |
| 1 | baby |
| 100 | elder |

* **Divison**

You will be given an integer and you have to print on the console whether that number is divisible by the following numbers: 2, 3, 6, 7, 10. You should **always take the bigger division**. If the number is divisible by both **2** and **3** it is also divisible by **6** and you should print only the division by 6. If a number is divisible by **2** it is sometimes also divisible by **10** and you should print the division by 10. If the number is not divisible by any of the given numbers print “**Not divisible”.** Otherwise print “**The number is divisible by {number}**”.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 30 | The number is divisible by 10 |
| 15 | The number is divisible by 3 |
| 12 | The number is divisible by 6 |
| 1643 | Not divisible |

* **Vacation**

You are given a group of people, type of the group, on which day of the week they are going to stay. Based on that information calculate how much they have to pay and print that price on the console. Use the table below. In each cell is the price for a **single person**. The output should look like that: “**Total price: {price}**”. The price should be formatted to the second decimal point.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Friday** | **Saturday** | **Sunday** |
| **Students** | 8.45 | 9.80 | 10.46 |
| **Business** | 10.90 | 15.60 | 16 |
| **Regular** | 15 | 20 | 22.50 |

There are also discounts based on some conditions:

* **Students –** if the group is bigger than or equal to 30 people you should reduce the **total** price by 15%
* **Business –** if the group is bigger than or equal to 100 people **10** of them can stay **for free.**
* **Regular –** if the group is bigger than or equal to 10 and less than or equal to 20 reduce the **total** price by 5%

**You should reduce the prices in that EXACT order**

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 30  Students  Sunday | Total price: 266.73 |
| 40  Regular  Saturday | Total price: 800.00 |

* **Print and Sum**

Write a program to display numbers from given start to given end and their sum. All the numbers will be integers. On the first line you will receive the start, on the second the end.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  10 | 5 6 7 8 9 10  Sum: 45 |
| 0  26 | 0 1 2 … 26  Sum: 351 |
| 50  60 | 50 51 52 53 54 55 56 57 58 59 60  Sum: 605 |

* **Login**

You will be given a string representing a username. The password will be that username reversed. Until you receive the correct password print on the console “**Incorrect password. Try again.**”. When you receive the correct password print “**User {username} logged in.**” However on the fourth try if the password is still not correct print “**User {username} blocked!**” and end the program.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| Acer  login  go  let me in  recA | Incorrect password. Try again.  Incorrect password. Try again.  Incorrect password. Try again.  User Acer logged in. |
| momo  omom | User momo logged in. |
| sunny  rainy  cloudy  sunny  not sunny | Incorrect password. Try again.  Incorrect password. Try again.  Incorrect password. Try again.  User sunny blocked! |

* **Strong Number**

Write a program to check if a given number is a strong number or not. A number is strong if the sum of the Factorial of each digit is equal to the number. For example 145 is a strong number, because **1! + 4! + 5! = 145.** Print "**yes**" if the number is strong and “**no**” if the number is not strong.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2 | yes |
| 3451 | no |
| 40585 | yes |

* **Vending Machine**

You task is to calculate the total price of a purchase from a vending machine. Until you receive “**Start**” you will be given different coins that are being inserted in the machine. You have to sum them in order to have the total money inserted. There is a problem though. Your vending machine only works with **0.1**, **0.2**, **0.5, 1, and 2** coins. If someone tries to insert some other coins you have to display “**Cannot accept {money}**” and **not** add it to the total money. On the next few lines until you receive “**End**” you will be given products to purchase. Your machine has however only “**Nuts**”, “**Water**”, “**Crisps**”, “**Soda**”, “**Coke**”. The prices are: **2.0**, **0.7**, **1.5**, **0.8**, **1.0** respectively. If the person tries to purchase a not existing product print “**Invalid product**”. Be careful that the person may try to purchase a product they don’t have the money for. In that case print “**Sorry, not enough money**”. If the person purchases a product successfully print “**Purchased {product name}**”. After the “**End**” command print the money that are left formatted to the second decimal point in the format “**Change: {money left}**”.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1  1  0.5  0.6  Start  Coke  Soda  Crisps  End | Cannot accept 0.6  Purchased coke  Purchased soda  Sorry, not enough money  Change: 0.70 |

* **Triangle of Numbers**

Write a program, which receives a number – **n**, and prints a triangle from **1 to n** as in the examples.

**Constraints**

* **n** will be in the interval [**1...20]**.

**Examples**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 3 | 1  2 2  3 3 3 | 5 | 1  2 2  3 3 3  4 4 4 4  5 5 5 5 5 | 6 | 1  2 2  3 3 3  4 4 4 4  5 5 5 5 5  6 6 6 6 6 6 |