# Lab: Comprehensions

Problems for in-class lab for the [Python Advanced Course @SoftUni](https://softuni.bg/courses/python-advanced).

Submit your solutions in the SoftUni judge system at <https://judge.softuni.bg/Contests/1836>.

## ASCII Values

Write program that receives a **list of characters** separated by **", "** and creates a dictionary with each **character** as a **key** and its **ASCII** value as a **value**. Try solving that problem using **comprehensions**.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| a, b, c, a | {'a': 97, 'b': 98, 'c': 99} |
| d, c, m, h | {'d': 100, 'c': 99, 'm': 109, 'h': 104} |

## No Vowels

Using a comprehension write a program that receives a **text** and **removes** all the **vowels** from it, **case insensitive**. Print the new text **string after removing the vowels**. The vowels that should be considered are **'**a**', 'o', 'u', '**e**'** and **'**i**'**.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Python | Pythn |
| ILovePython | LvPythn |

## Even Matrix

Write a program that receives a **matrix of numbers** and prints a **new one** only with the numbers that are **even**. Use nested comprehension for that problem.

On the first line, you will receive **the rows of the matrix**. On the next **rows**, you will get elements for each column separated with a **", "**.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  1, 2, 3  4, 5, 6 | [[2], [4, 6]] |
| 4  10, 33, 24, 5, 1  67, 34, 11, 110, 3  4, 12, 33, 63, 21  557, 45, 23, 55, 67 | [[10, 24], [34, 110], [4, 12], []] |

## Flattening Matrix

Write a program that receives a **matrix** and prints the **flattened** version of it (a list with all the values). For example, the flattened list of the matrix: **[[1, 2], [3, 4]]** will be **[1, 2, 3, 4]**.

On the first line, you will receive the matrix sizes in format **"{rows}, {columns}".** On the next **rows**, you will get elements for each column separated with a **", "**.

Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  1, 2, 3  4, 5, 6 | [1, 2, 3, 4, 5, 6] |
| 3  10, 2, 21, 4  5, 20, 41, 9  6, 2, 4, 99 | [10, 2, 21, 4, 5, 20, 41, 9, 6, 2, 4, 99] |

## Filter Numbers

You will be given two lines of input - a **start integer** and an **end integer**. Print all the numbers in the given **range** (**inclusive**) that are **divisible** by **any** of the numbers from **2 to 10**. Use comprehensions for this problem.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1  20 | [2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20] |
| 45  50 | [45, 46, 48, 49, 50] |