# 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** 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': 2, 'b': 1, 'c': 1} |
| dog, cat, mouse, cat, dog, dog, horse, rabbit, dog, dog, mouse | {'dog': 5, 'cat': 2, 'mouse': 2, 'horse': 1, 'rabbit': 1} |

## No Vowels

Using a comprehension write a program that receives a **text** and **removes** all the **vowels** in it. Print what has remained of the text. Vowels are **'**a**', '**o**', '**u**', '**e**', '**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.

### 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]**.

### 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 a **start** and an **end**. 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] |
| 35  50 | [45, 46, 48, 49, 50] |