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## Tartalomjegyzék

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## Running python

### Jupyterhub

- Log into [jupyter.math.bme.hu](http://jupyter.math.bme.hu) with your **leibniz user and password**
- We will use **Python 3**
- this is similar as you would run the following on your own machine

```
jupyter notebook
```

### leibniz

- type this into your konsole:

```
python3
```

- you can stop by typing:

```
exit()
```

## Own machine

Install [Anaconda](#), version **3.7** is needed!

- [how to install Anaconda on windows](#)
- You can use other distributions such as
  - ◆ [python.org](#)
  - ◆ [WinPython](#)

Having Anaconda you can run several programs to interact with python:

- command line: `python` or `ipython`
- Spyder
- idle
- jupyter notebook

## Exercises

### Introduction

- Try the notebook from the lecture.
  - ◆ download from wiki and upload it into `jupyter.math.bme.hu`
- Try a welcoming program (from terminal)!
- Try division (integer and float)

### tocelsius

Write a python program that convets from Fahrenheit to Celsius

- See [examples here](#)

### isaprime

Write a function that tells whether a number is a prime or not!

The function should be called `isaprime` and have one parameter:

- `x`, the number in question

The function should return **True** or **False** depending on the number.

For safety reasons, you can check the type and value of the input. Accept **only positive integers**! If you get a non-integer or a non-positive integer, return **None**

### roomtemp

According to [Wikipedia](#) a room has a temperature between 18°C and 25°C. Write a function that decides that for us.

The function should

- be called `roomtemp`
- have one parameter: `degree` the temperature of the room in Celsius degrees.
- return either one of the following strings depending on the temperature:
  - ◆ `"http://wiki.math.bme.huToo cold!"http://wiki.math.bme.hu`
  - ◆ `"http://wiki.math.bme.huToo hot!"http://wiki.math.bme.hu`
  - ◆ `"http://wiki.math.bme.huOK"http://wiki.math.bme.hu`

Mind that there is a difference between **print** and **return**

## factorial

Write a python program which calculates  $n$  factorial.

## without 2

You should divide a positive integer  $n$  with a power of two, until it is not divisible by 2.

Call the function `withouttwo` with one parameter:

- **n**, a positive integer
- Return the number divided by the greatest possible power of two.

For example

```
1 -> 1
2 -> 1
3 -> 3
4 -> 1
6 -> 3
7 -> 7
9 -> 9
10 -> 5
100 -> 25
```

## Pattern Number

Write a python program which has the following output:

```
1
22
333
4444
55555
666666
7777777
88888888
999999999
```

## Fibonacci Series

Write a Python program to get the Fibonacci series between 0 to 50.