

Exercise 1 - An Introduction to Python

IKT112 Concepts of Machine Learning

Purpose

The purpose of this exercise is for you to familiarize yourself with your chosen Python editor, and the Python programming language.

Before Starting

In this course, we will use Python as the programming language. There are different Python editors (software to execute Python code). Here are three alternatives that you can use:

- UiA's Jupyterhub (Recommended):
<https://fe.uia.no/>
- PyCharm (you need to apply for a licence first, use your @uia.no email address):
<https://www.jetbrains.com/pycharm/>
- Spyder:
<https://docs.spyder-ide.org/current/installation.html>
- Google Colab:
<https://colab.google/>

If you prefer another IDE or tool for programming Python you can use that one.

Get More Familiar With the Python Language

You can find beginners tutorials on this page:

<https://wiki.python.org/moin/BeginnersGuide/Programmers>.

Tasks:

1. "Hello, World!" Program:
 - Task: Write a Python program that prints "Hello, World!" to the screen.
2. Basic Arithmetic Calculator:
 - Task: Create a Python program that takes two numbers as input and allows the user to choose to add, subtract, multiply, or divide them.
3. Building a Shopping List:
 - Task: Write a program that allows the user to add items to a shopping list. The user can add as many items as they want and then print the entire list.

4. Temperature Converter (Celsius to Fahrenheit and vice versa):

- Task: Create a Python program that converts temperatures from Celsius to Fahrenheit and from Fahrenheit to Celsius. The user should be able to input the temperature and choose which conversion they want.

5. Basic String Manipulator:

- Task: Write a program where the user inputs a string, and the program outputs the same string in uppercase, lowercase, and checks whether the string is a palindrome or not.