Introduction to Programming with Python

Course Description

This course provides students with a foundational understanding of the Python programming language. Following an introductory exposition on the importance of Python for data science-related programming tasks, students will be acquainted with fundamental programming concepts such as variables, data types, and statements. Building on this basis, the important notion of a function is explained and errors, exception handling, and logging are explicated. The course concludes with an overview of the most widely used library packages for data science.

Contents

1. Introduction
   1. Why Python?
   2. Obtaining and Installing Python
   3. The Python Interpreter, IPython, and Jupyter
2. Variables and Data Types
   1. Variables and Value Assignment
   2. Numbers
   3. Strings
   4. Collections
   5. Files
3. Statements
   1. Assignment, Expressions, and Print
   2. Conditional Statements
   3. Loops
   4. Iterators and Comprehensions
4. Functions
   1. Function Declaration
   2. Scope
   3. Arguments
5. Errors and Exceptions
   1. Errors
   2. Exception Handling
   3. Logs
6. Modules and Packages
   1. Usage
7. Namespaces
8. Documentation
9. Popular Data Science Packages