

Beginner Python - 初级 Python

About this course 关于本课

This course is for young people (age 10 to 17) who wants to learn how to program using Python. No prerequisite is required. The course covers basic concepts of a computer system and fundamental concepts of Python programming language. The main goal of this course is to help students gain confidence in programming through reading, writing, running, and debugging small and simple programs written in Python version 3. Attention: This course consists of two semesters: Fall and Spring semester. As a result, fall semester and spring semester cover different contents.

Words from Lecturer:

My name is Max Li (李海飞). I have taught college students for many years (17 to be exact). I also have industrial experiences for 6 years before coming to US for graduate studies. In addition, I have been a researcher at IBM Thomas J. Watson Research Center for 2 years. I got a doctoral degree from the University of Florida (2001), a master's degree from the University of Florida (1998) and a bachelor's degree from Xi'an Jiaotong University (1990). All my degrees are in computer science and engineering.

VERY important requirement:

A windows 10 laptop with wireless access is required for the course. Please bring the laptop to the classroom every time because every student needs to use his/her own computer for working with the code.

Fall semester

basic computer concepts.

Practice:

Start Windows 10, open PowerShell, basic commands such as cd, mkdir, etc.

Install PyCharm Community Edition

Write the first python program, "Hello world"

Python Basic I:

1. Print command.
2. Variables.
3. Comments

Python Basic II:

1. IPO methodology: Input, Process, Output
2. Data types

Conditional Statements

1. Boolean expressions
2. if statements

Iterative Statements

1. For loop
2. While loop

Important Data Structures

1. list
2. dictionary
3. List of dictionaries
4. database-like operations on a list of dictionaries

File operations

1. Read text files
2. Write text files

Functions

1. Basic syntax of functions
2. Examples for math operations
3. Examples for String operations
4. Recursive functions

Class project: Fancy multiplication table (Letter-based, decimal to hexadecimal conversion, emoji).

Spring Semester:

Object and class

Exception handling

Python date and time

math module

os module

requests module for web programming

Python PILLOW model for image processing

(https://www.tutorialspoint.com/python_pillow/python_pillow_quick_guide.htm)

CSV file processing

Class project: Family Data Management using CSV file.