In the Name of GOD

Scientific association of computer engineering

Python course scenarios

Teachers:
Yashar Zavary Rezaie
Mohsen Galibaf

Relevant professor:
Dr. Azadeh Mansoury

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In this course, an introductory Python program will be taught through **project-based learning**. The project selected for this course involves implementing an **online store platform.** Students will also be required to complete a practical exercise by building a **library management system.**
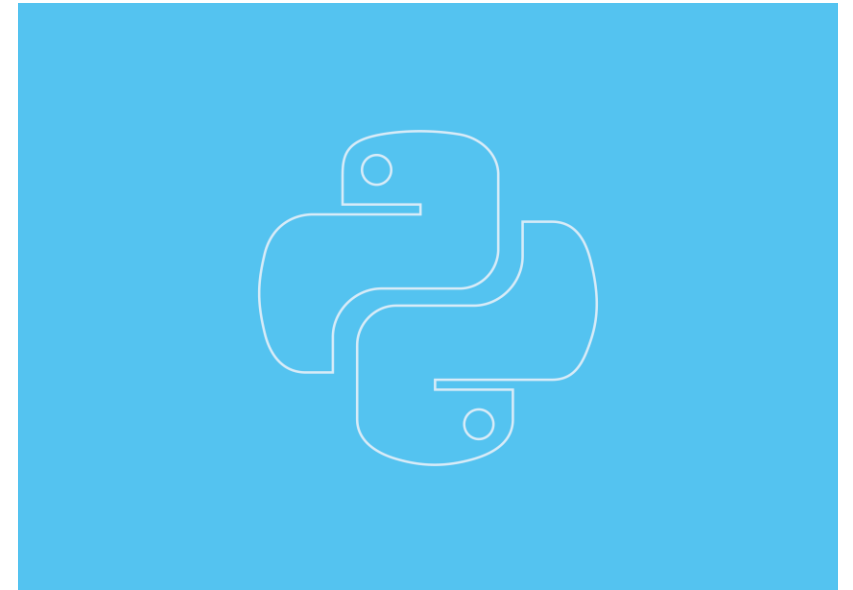
In addition to the project sessions, there will be **supplementary sessions** dedicated to a deeper exploration of the topics covered, with more examples to aid understanding.

The course content will cover the <u>fundamental aspects of Python (up to the topic of functions), file handling, and the Tkinter library.</u> This is a beginner-level course, and individuals with no prior programming experience are welcome to join.

*The course will consist of 8 sessions (5 project and lecture sessions + 3 exercise and in-depth review sessions).

An introductory video, including the necessary software setup and programming tools, will be made available for students to view <u>before the class</u>.

A short **online session will be held prior to the start of the course to <u>introduce the instructors and discuss the project.</u>

Class Num.	Screenplay(part of project & description)
Project class No.1	**Sign Up:** input,print,if(elif&else),in "string", variables, work with variables • input name, family name, age, Password and email • print the details and get OK from use • check age to be valid(under 0 and under 18 and >18) • Check email validation with "in "string"" • Store the details and work with them to learn variables
Project class No.2	**Sign Up:** lists, if, for loop • Store details of users in one **list** • Check for duplicate email in email list with **for** **Log In:** while • Store details of users in one list(name and password) • Input name and password • Check that we have that name and password in the list or not • 3-time validation check with **while**
Exercise Class No.1	• work with variable(operators and etc.) • Little more about lists(indexing and etc.) • Work with for and while • Count with for (for _ in **range()**)

Class Num.	Screenplay(part of project & description)
Project class No.3	**Menu:** if, while(**True**) • Make one section for selection of sign up and log in • Infinite while loop for Menu **Add Product**: dict, lists • Input details of one product(name, price, exp date) • Store it in the dictionary • Store dicts in one list named Products **Structure Of Project**: functions • Write inline make project busy...so we use functions and consts for better design
Exercise Class No.2	• work with dictionary • Talk about tuple and sets • Work with functions.
Project class No.4	**Store User Detail in Dict**: work with dicts **Store Details in file**: open, read, write • Read file and store details of User, Product in the dict and use them in functions • Write new details after validation in the files. **Buy Product**: file, dict, if, for • User log in and see product list, select the product and pay them • User can store details of the products in the file and buy another day.

Class Num.	Screenplay(part of project & description)
Exercise Class No.3	• Work with files • Review for, while loop • Review data structures • Talk about libraries and work with some simple ones(Random, Math)
Project class No.5	**Project GUI**: Tkinter, library • Give simple GUI to project with Tkinter library