Intro to Python

Course overview, Introduction

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Contacts

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Timetable

Seminars	Location	Duration
Mondays 02:40-5:40 pm	Online	Modules 4th
Link	Check your timetable.	

Repository with course material

https://github.com/Majid-Sohrabi/2025_Python_P-D

Course content

Introduction into Python (Syntax)

- Intro to Anaconda, Jupyter Notebook, and other similar environments
- Data types: integers and strings. Input and output. Strings formatting
- Data types: floating-point numbers and boolean. Logical operators. Conditionals
- Different types of loops
- Data types: lists and tuples. For loop
- Methods I (Strings)
- Methods II (Lists)
- Data types: sets and dictionaries
- Nested Structures
- Functions
- Working with files in Python

Overview

Compulsory course for year 1

Population and Development

Duration: 4th module

Assessment elements:

- Quiz Assignments (40% weight) – In class
- Final exam (60% weight) - End of 4th module

Format:

- Online (Seminars)

Grade Formula

Grade Component	Percentage	Evaluation Criteria
Quiz	40%	There will be several in class quiz assignments, each quiz consists of several tasks. The final quiz mark is a 10-point scale.
Final Exam	60%	The final exam will take place in the last seminar of the course. It lasts for 80 minutes, and the grade is a 10-point scale,

The formula

$$\text{Final grade} = 0.4 \cdot \text{Quiz} + 0.6 \cdot \text{Final exam}$$

$$0 \leq \text{Final Exam} \leq 10$$

$$0 \leq \text{Quiz} \leq 10$$

Arithmetic rounding. E.g. 3.5 is rounded to 4, 3.49 is rounded to 3.

Quiz

Small set of tasks (on LMS)

Solve tasks to earn points

Deadline: Each quiz has specific deadline

$$\text{Quiz grade} = 10 \cdot \min\left(1, \frac{\sum \text{points}}{\text{total}}\right)$$

Plagiarism matters!!!

In case of AI detected, student needs defense.

Final Exam

Consists of several programming tasks

- Format: on LMS
- Duration: 80 minutes
- The exam time will be announced
- There is no retake option for the final exam (in case of low mark)

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Thank you!

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Exercise

1) Find the maximum element in the following sequence:

- A = [7, 4, 9, 2, 8, 88, 83, 12]

Exercise

2) Find the minimum element in the following sequence:

- A = [7, 4, 9, 2, 8, 88, 83, 12]

Exercise

3) Sort the elements in the following sequence in ascending format:

- A = [7, 4, 9, 2, 8, 88, 83, 12]

Exercise

4) Sort the elements in the following sequence in descending format:

- A = [7, 4, 9, 2, 8, 88, 83, 12]

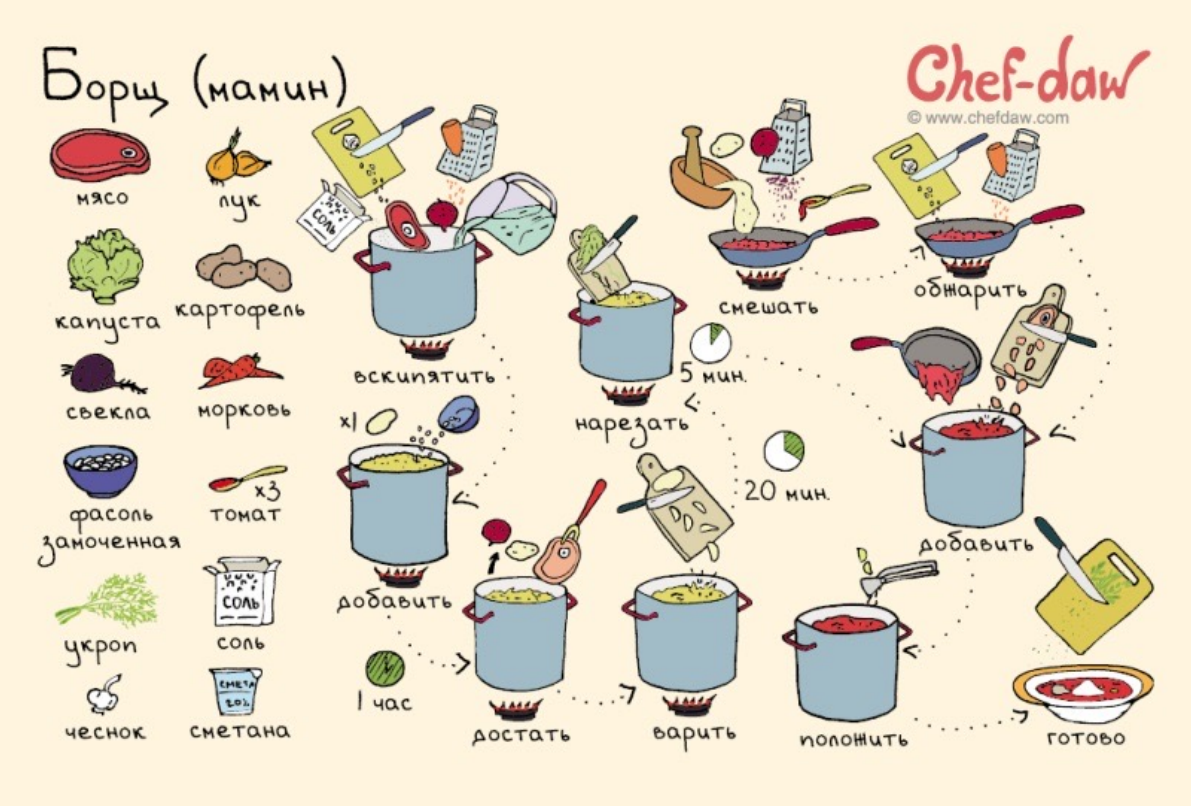
Exercise

5) Calculate the average of elements for the following sequence:

- A = [7, 4, 9, 2, 8, 88, 83, 12]

What does programming look like?

Why do we need languages?



How do programs look for the PC?

1. Leave only three first letters in each word
2. In those three-letter words change all ‘a’ letters to ‘@’ symbol
3. Change all ‘o’ letters ‘o’ to ‘0’
4. Join all the pieces with a dash sign

How do programs look for the PC?

1 **Leave only three first letters in each word**

ima men opt man

2 In those three-letter words change all ‘a’ letters to ‘@’ symbol

3 Change all ‘o’ letters ‘o’ to ‘0’

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What we will be doing?

1

Think how we would approach a problem

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1

Think how we would approach a problem

2

Write step-by-step solution for a human

What we will be doing?

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3. Translate our solution to a language that computer can understand

What we will be doing?

1. Think how we would approach a problem
2. Write step-by-step solution for a human
3. Translate our solution to a language that computer can understand
4. Check that our code works properly