MIDTERM

EXAM 2

FACULTY	DEPARTMENT
COMPUTER AND INFORMATICS	ARTIFICIAL INTELLIGENCE AND DATA ENGINEERING
COURSE	**INSTRUCTOR**
YZV104E – INTRO. TO PROG. FOR DATA SCI. (PYTHON)	A. CÜNEYD TANTUĞ
DATE	**HOURS**
02.05.2024	13:00 – 15:15

Exam Rules

1. This is a computer-based exam. You are requested to develop programs satisfying the question requirements.
2. You can only access Ninova website content during the exam.
3. Using external sources from any other device (such as cellular phones or tablets) with internet connectivity is strictly prohibited. Such an attempt will be treated as a cheating incident and disciplinary actions will be taken.
4. An official offline Python documentation in HTML format will be available during the exam. You should download the zipped documentation file from the Course Files section on Ninova.
5. You have to submit your solutions by using Ninova. Four assignments named "**Midterm 2**", "**Midterm 2 Question 1**", "**Midterm 2 Question 2**", and "**Midterm 2 Question 3**" will be activated at the beginning of the exam. **These assignments will be deactivated when the exam time is up, so you will NOT be able to submit your results anymore**.
6. To avoid possible timing problems during submission, please upload your solutions to Ninova homework when it is 10 minutes before the deadline of the exam (even though it is not your final version).
7. Your submissions will be evaluated in two phases. In the first phase, your programs will be automatically tested and scored by a script with a private set of test cases. In the second phase, a human review will be conducted to avoid any falsifying attempts that aim to trick the script.
8. Codes that cannot be executed **will not be graded**. The evaluation will be conducted with the same environment you use in the laboratory computer, so do not change the default environment while working. No further changes (even very minor) are allowed after midterm time is up. Your score will be proportional to the number of positive test cases divided by the number of all test cases. Bonus points (if there exists any) will be added to your basic score.
9. As a general programming principle, do not start coding immediately. Take a moment to understand and grasp the problem, think about possible solution steps (which is the algorithm), and then start your algorithm implementation.

2) [X points] You have a list of transaction strings, where each string contains two IBANs separated by a colon (:). The first IBAN is the sender's, and the second is the receiver's. Your task is to extract and organize this information into a structured format and sort it based on specific criteria.

- **Example Input:**
  “TR72-6372-7372-0828-1728-1782-11:US18-7272-9710-8619-1826-6384-82”

- **Requirements:**

  1. Extract Data: Iterate over the transaction strings to separate the sender and receiver IBANs.

  2. Filter by TR IBANs: Only include the transactions where at least one of the IBANs (sender or receiver) starts with "TR".

  3. Data Structure: Create a list of dictionaries, where each dictionary has two keys: sender and receiver.

  4. Sorting: Sort the list of dictionaries by the sender IBAN.

  5. Print: Print the list of dictionaries onto the console.

WARNING

Utilize **ONLY** lambda, filter, map, and sort functions in Python. You are **NOT allowed** to use structures like if, else, for, while, etc.

WARNING

Please use the template *iban_extracter.py* provided with the exam package and modify this file to construct your solution. Note that you should NOT change the lines below `if __name__ == "__main__":` line in the template.