AI Assignment 1

PYTHON AND PANDAS

By

Team IOIT

AI Assignment 1 – Python and Pandas

AI 2024 Online Summer Internship

Make Your Place in Top 20% AI Engineers of the World

Aim

The main aim of this assignment is to understand the basics of Python Programming Language and Pandas Library, so that you should become familiar with the basic techniques needed to read, understand and pre-process different types of data for building Machine Learning Models

Learning Outcomes

After reading, understanding, analyzing and doing this Assignment, a participant should be able to:

- Understand main concepts related to Python Programming Language and Pandas Library to read, understand and pre-process different types of data for building various useful Machine Learning Models

Tasks

Note that this Assignment is planned, designed, and developed using a Half-Cooked Approach i.e., some work is done by the instructor and the remaining will be done by you. Since the Assignment is to read, understand and pre-process different types of data using Python and Pandas. Following the Half-Cooked Approach, you are provided with an initial tutorial on Python and Pandas (from Instructor). Your job is to carry out the Tasks given below and answer the associated questions.

Your main job is to improve the Overall Quality of the Initial Tutorial by performing the following Tasks.

Important Note: You MUST do this Assignment using Jupyter Notebook.

Task 1

For each Concept in the Initial Tutorial(for e.g., Variables, String, List, Tuple, Dictionary etc.) write down

- **Definition**
- **Purpose**
- **Importance**
- **Applications**
- **Strengths**
- **Weaknesses**
- **Suitable to Use**
- **Given and Task**
- **Input and Output**
- **At least 3 – 5 Examples (Not Given in the Initial Tutorial)**
- **At least 1 Example to Solve Real-world Problems**

Note: You can add Concepts in your Assignment Solution that are not mentioned in the Initial Tutorial

Task 2

- **Improve the Initial Tutorial, so that it reflects the phenomenon of Completeness and Correctness**
- **Improve the Initial Tutorial to make it self-explanatory**

Task 3

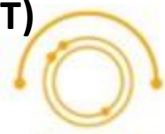**Improve Formatting of the Initial Tutorial to Improve the Look and Feel of the Tutorial**

Supporting Material

- Download and Install Python and Pycharm
  - Link: https://www.youtube.com/watch?v=6a2cSXgooDo
- Download and Install Anaconda
  - Link: https://www.youtube.com/watch?v=_otz2IhSbPU
- Understanding Jupyter Notebook
  - Link: https://www.youtube.com/watch?v=H9Iu49E6Mxs

Guidelines for Assignment Submission

Deadline: **14-Jul-2024 (23:59 PST)**

How to Submit?
Upload your Tutorial (Assignment Solution) on Microsoft Teams. Upload the following files:
1. Jupyter Notebook File
2. Jupyter Notebook in HTML Format
3. Dataset(s) (if used in the Assignment)