System Requirements Specification Index

For

Create a Pandas Series from a list and perform indexing operations

(Topic: Pandas Data Structures)

Version 1.0

Player Score Analysis Console

Project Abstract

The Player Score Analysis Console is a Python-based application designed to manage and analyze player scores in a gaming system. This system utilizes Pandas to efficiently handle player data and analyze scores. The PlayerScoreAnalysis class allows for various functionalities such as retrieving, updating, and displaying player scores. The system will also allow for storing the updated scores in a CSV file for persistent storage and future reference. This console application is essential for maintaining accurate player score records and for generating reports on player performance, helping gaming platforms or competition organizers keep track of player rankings and achievements.

Business Requirements:

1. **The system should be able to load player score data and allow for various score-related operations.**
2. **The system should allow retrieving, updating, and querying player scores.**
3. **The system should display or save the updated score data as needed.**
4. **The system should maintain a robust way to handle missing data or invalid player IDs.**

Constraints

Input Requirements:

- **Player Score Data:**
  - **Must be stored as a DataFrame.**
  - **Each entry should contain a `player_id` (integer) and `score` (float).**
- **Player ID:**
  - **Must be a unique identifier for each player.**
  - **Must be an integer.**
  - **Example: `101`**

- **Player Score:**
  - **The score must be a floating-point number.**
  - **Example:** `75.0`

Operations:

- **Getting a Player's Score:**
  - **Use `get_score_for_player(player_id)` method to fetch the score of a player by their ID.**
- **Updating a Player's Score:**
  - **Use `update_score_for_player(player_id, new_score)` method to update a player's score.**
- **Threshold Analysis:**
  - **The system can query for players whose score is above a certain threshold using `get_players_above_threshold(threshold)`.**
- **Multiple Player Scores:**
  - **Use `get_scores_for_multiple_players(player_ids)` to retrieve scores for a specific list of players.**

Conversion Constraints:

- **Score Update:**
  - **Use `update_score_for_player` to modify the score for an existing player.**
  - **The score should be updated directly in the Pandas series.**
- **Save to CSV:**
  - **Use `save_updated_score_series(filename)` to store the updated scores to a CSV file for persistence.**

Output Constraints

1. **Display Format:**
   - **The score data should be displayed or saved in a tabular format.**
   - **Each player's score must be displayed with their corresponding player ID.**
2. **File Format:**
   - **The updated score series must be saved in CSV format.**
   - **The file should contain player scores in the following structure:**

Template Code Structure:

1. **Score Retrieval and Update Functions:**
   - `get_score_for_player(player_id)`
   - `update_score_for_player(player_id, new_score)`
   - `get_players_above_threshold(threshold)`
   - `get_scores_for_multiple_players(player_ids)`
2. **Data Saving Function:**
   - `save_updated_score_series(filename)`
3. **Display Function:**
   - `display_score_series()`
4. **Input Section:**
   - **Initialize the `PlayerScoreAnalysis` class with score data.**
   - **Retrieve scores for a specific player using `get_score_for_player`.**
   - **Update scores using `update_score_for_player`.**

5. **Output Section:**

    - **Save the updated score series to a CSV file.**
    - **Display the entire score series or query for players above a certain threshold.**

<u>Execution Steps to Follow:</u>

- All actions like build, compile, running application, running test cases will be through Command Terminal.
- To open the command terminal the test takers, need to go to Application menu (Three horizontal lines at left top) -> Terminal -> New Terminal
- This editor Auto Saves the code
- If you want to exit(logout) and continue the coding later anytime (using Save & Exit option on Assessment Landing Page) then you need to use **CTRL+Shift+B** -command compulsorily on code IDE. This will push or save the updated contents in the internal git/repository. Else the code will not be available in the next login.
- These are time bound assessments the timer would stop if you logout and while logging in back using the same credentials the timer would resume from the same time it was stopped from the previous logout.
- To setup environment:

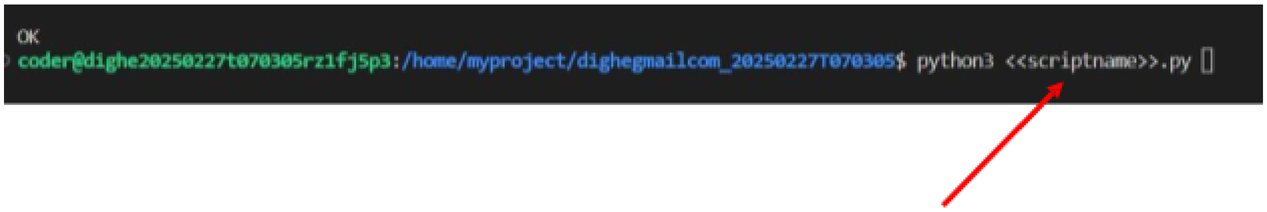
  You can run the application without importing any packages
- To launch application:
  python3 mainclass.py
- To run Test cases:

  python3 -m unittest

- Before Final Submission also, you need to use **CTRL+Shift+B** - command compulsorily on code IDE, before final submission as well. This will push or save the updated contents in the internal git/repository, and will be used to evaluate the code quality.

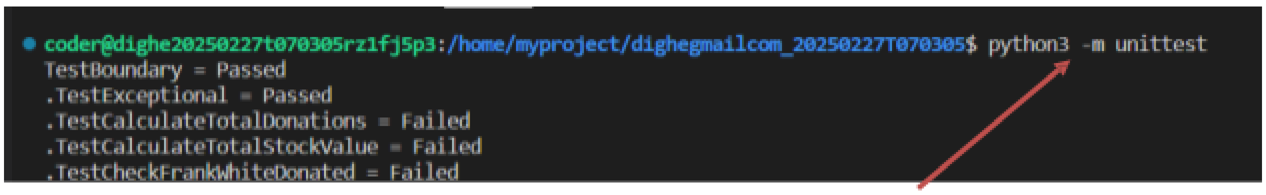
<u>Screen shot to run the program</u>

To run the application



```
OK
coder@dighe20250227t070305rz1fj5p3:/home/myproject/dighegmailcom_20250227T070305$ python3 <<scriptname>>.py
```

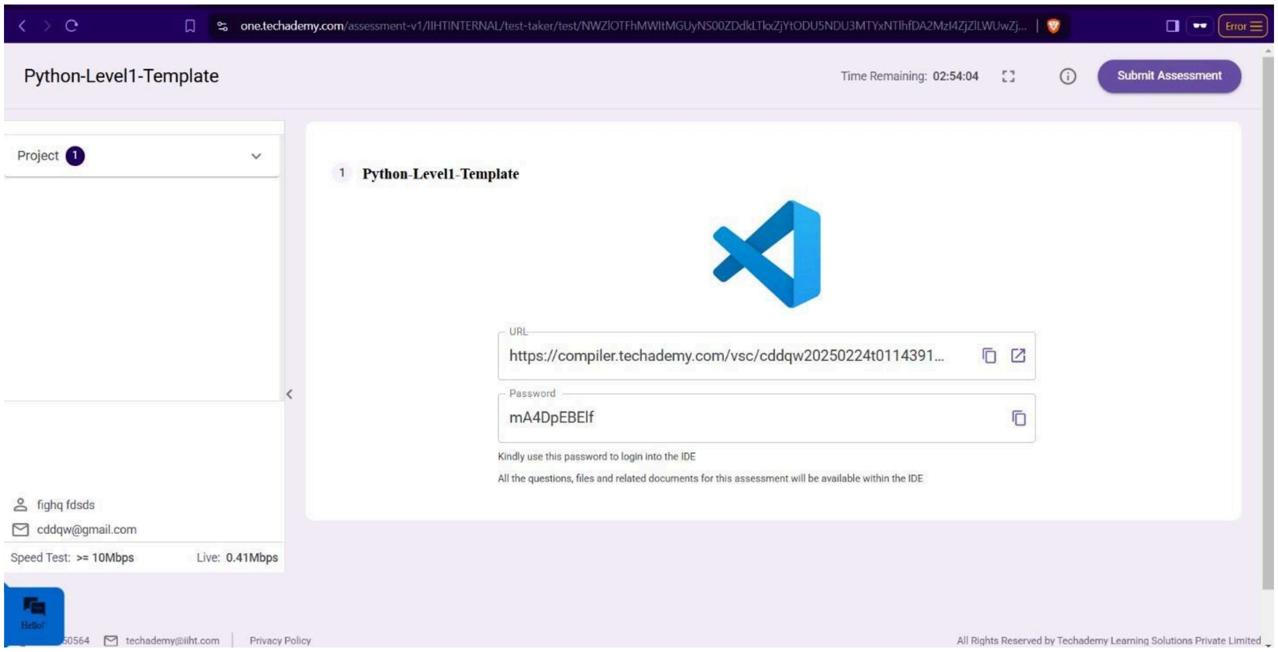
python3 mainclass.py



```
coder@dighe20250227t070305rz1fj5p3:/home/myproject/dighegmailcom_20250227T070305$ python3 -m unittest
  TestBoundary = Passed
  .TestExceptional = Passed
  .TestCalculateTotalDonations = Failed
  .TestCalculateTotalStockValue = Failed
  .TestCheckFrankWhiteDonated = Failed
```

To run the testcase

python3 -m unittest


one.techademy.com/assessment-v1/IIHTINTERNAL/test-taker/test/NWZlOTFhMWItMGUyNS00ZDdkLTkxZjYtODU5NDU3MTYxNTlhfDA2MzI4ZjZlLWUwZj...

Python-Level1-Template

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Project 1

1 **Python-Level1-Template**

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All the questions, files and related documents for this assessment will be available within the IDE

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- **Once you are done with development and ready with submission, you may navigate to the previous tab and submit the workspace. It is mandatory to click on “Submit Assessment” after you are done with code.**