INSTRUCTION FOR RUNNING CODE

This project contains below python file:

- **Home.py:** This file contains the code to provide the interaction with the user through the console.
- **Fetch_reco_records.py :** This file contains the code for recommending items. i.e. fetching the last three state items and extract the similar items of the top rewarded items through the item-item similarity. And then perform the rank computations to find the top ranked items.
- **Book_details.py :** This file contains the code through which we provide the book details to the student and user can perform the different actions on the book. i.e. like, dislike, rate, etc
- **Url_fetch.py :** This file contains the code for fetching the url of images of the book to display in the book details.
- **Similarity_matrix.py :** This file contains the code for computing correlation based similarity between two books.
- **Sim_books_store.py :** This file contains the code for storing correlation based similarity between two items.
- **Random_reco.py :** This file contains the code for providing the recommendation randomly.
- **Change_rating.py :** This file contains the code for changing the rating of teh book given by specific user in the predicted rating data.
- **Book_tfidf_similarity.py :** This file contains the code for computing tf-idf (title content based similarity) based similarity between two book.
- **SVD_surprise_collaborative.py :** This file contains the code for computing the predicted rating through SVD.

This python files refer to below data files:

- **Ratings_book.csv:** This file contains actual rating given by each user to each book.
- **User_item_rating.pkl:** This file contains actual and predicted rating given by each user to each book.
- **Book_tfidf_similarity.csv :** This file contains tf-idf similarity value between each book.
- **Book1_reduced_data.csv:** This file contains data of each book.
- **Book_similarity.csv :** This file contains correlation based similarity value between each book.
- **Book_global_rating :** This file contains global rating for each book.
- **State_tables** corresponding to each user, which will contains the book id, book table and the reward computed for that book from previous states.

To run the program one shall follow below instructions:

- Set the path of the files in each code file by setting the variable names to the values where they are located. i.e. one shall change the value of USER_ITEM_RATING_PKL, USER_STATE_TABLE_CSV, ITEM_ITEM_SIMILARITY_CSV, BOOK_DATA_CSV, CONTENT_BASED_SIMILARITY_CSV, etc

- Run the **Home.py** file (to interact with the system)

- It will ask for two options
    - New user
    - Existing User

- If you select the **new_user** option then **Random_reco.py** will be called and randomly generated recommendation will be provided else i.e. in case of **existing user**, **Fetch_reco_records.py** will be called and recommend the items based on the previous state data and exploration rate. (to get the recommendation)

- If from displayed list user select any book then the **Book_details.py** will be called and user will be provided the options to rate like and dislike the items (to perform the actions on recommended books)

- Based on the action reward in the state table will be changed.

- If user selects the refresh or exit option then based on the reward of the books of the previous state history and exploration rate, items will be recommended to the user. (to get the effect of the action that is done by user)

Note:

- One can run the SVD_surprise_collaborative.py, Book_tfidf_similarity.py, Sim_books_store.py, Similarity_matrix.py files as the users and book and the rating given by user on books are changed in the systems.

- As in this project one need pandas, surprise, numpy, csv, image, display, markdown, pickle, random, sklearn, urllib to be installed.