COMP3381 – SSA3 Web Technology
Summative Assignment

This coursework gives you an opportunity to experience the development of a personalized web application. There are a lot of aspects for providing personalized contents to web users, including item recommendation, internationalization, website construction, etc. Under each aspect, a variety of techniques could be incorporated. You are expected to implement a good selection of aspects as above with python, demonstrating your competence in developing application with personalization features. The deadline for submission is the 14th December 2018 (2pm). This assessment contributes 8.5% of the overall COMP3381 module marks.

References:
- Lecture notes
- Generating recommendations with Pandas:
  https://stackabuse.com/creating-a-simple-recommender-system-in-python-using-pandas/
- Matrix factorization with Pandas
  https://beckernick.github.io/matrix-factorization-recommender/
- Wes McKinney, Python for Data Analysis, O'Reilly, 2018.
- Movie rating dataset (MovieLens): https://grouplens.org/datasets/movielens/latest/
- Flask: https://www.makeuseof.com/tag/python-javascript-communicate-json/

System requirements:

1. Incorporate a dataset of movie ratings. The dataset should maintain two tables. One table comprises data of user ID, movie ID, and movie rating. Another table comprises data of movie ID, movie title and movie genres. [15 marks]

2. Maintain user profile to store user preference of movies. [15 marks]

3. Apply user profile to provide movie recommendation based on a suitable recommendation algorithm. [40 marks]

4. Provide personalized messages. [10 marks]

5. Provide a suitable interface for a user to interact with the system, supporting user profile creation and/or update and receiving movie recommendations. [20 marks]

Deliverables:

Develop a system to offer movie recommendation according to the system requirements. You are expected to use the Pandas Python Library for implementation. For the dataset, you can either build your own one or make use of a public dataset, such as MovieLens, as suggested. For user interface, basic textual user interface with Python is sufficient. If you attempt to gain more marks, you can implement a web-based system using Flask to support advanced user interaction. The mark scheme is shown in page 2.

For submission, you should pack all python scripts and required files into a single .zip file for uploading to DUO. You should also include a readme file in the submission, showing essential instructions to run your system and providing a 200-word description to highlight the system features you have provided.

Mark Sheet

Student ID: _____

Total mark: _____

Level of Achievement	Dataset [15 marks]	User Profiling [15 marks]	Recommendation Algorithm [40 marks]	Personalized Messages [10 marks]	Interface [20 marks]
81-100%	Comprehensive dataset with extra features provided, e.g., dynamic update capability	Advanced user profiling with dynamic update capability	Excellent implementation in terms of features and functions supported. Robust and generative results produced	Excellent implementation with a wider scope of personalization and i18n features included	Extensive implementation, producing a web-based system to support advanced user interactions (e.g. with Ajax and JSON communication)
60-80%	Comprehensive dataset incorporated	Comprehensive user profiling supported	Good quality and fully functioning system implemented with robust recommendation results generated	Good quality and comprehensive messages provided. Also provided i18n capability	Good quality and comprehensive user interface provided
40-59%	Limited dataset incorporated	Simple user profiling included	Satisfactory implementation with limited features but generated proper recommendation results	Satisfactory implementation with limited messages offered	Satisfactory implementation with limited user interactions or control supported
1-39%	Inadequate dataset constructed	Incorrect user profiling was implemented	Implementation did not generate adequate recommendation results	Implementation did not generate proper personalized messages	Interface did not function properly
0%	No / irrelevant submission	No / irrelevant submission	No / irrelevant submission	No / irrelevant submission	No / irrelevant submission
Marks Obtained	/15	/15	/40	/10	/20

Other comments: _____