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 13th December 2019 (2pm).

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.
- Flask: https://www.makeuseof.com/tag/python-javascript-communicate-json/

System requirements:

1. Incorporate a dataset of books ratings. The dataset should maintain two tables. One table comprises data of user ID, book ID, and book rating. Another table comprises data of book ID, book title and book genres. **[15 marks]**
2. Maintain user profile to store user preference of books. **[15 marks]**
3. Apply user profile to provide book recommendation based on a suitable recommendation algorithm. **[50 marks]**
4. Provide a suitable interface for a user to interact with the system, supporting user profile creation and/or update and receiving book recommendations. **[20 marks]**

Deliverables:

Develop a system to offer books 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. 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. 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.

Student ID: _____

Total mark: _____

Level of Achievement	Dataset [15 marks]	User Profiling [15 marks]	Recommendation Algorithm [50 marks]	Interface [20 marks]
81-100%	Comprehensive dataset with extra features provided, e.g., dynamic update capability	Advanced userprofiling with dynamic update capability	Excellent implementation in terms of features and functions supported. Robust and generative results produced	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 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 user interactions or control supported
1-39%	Inadequate dataset constructed	Incorrect user profiling was implemented	Implementation did not generate adequate recommendation results	Interface did not function properly
0%	No / irrelevant submission	No / irrelevant submission	No / irrelevant submission	No / irrelevant submission
Marks Obtained	**/15**	**/15**	**/50**	**/20**