CPSC 583
Project Proposal

- **Project Title:** Movie Recommendation System

- **Group Members:**
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- **Description of problem:**

  Selecting a film that fits one's tastes amidst the vast entertainment options can be difficult. Searching through an extensive library of films can be tough for users, making it challenging to find movies that suit their preferences. An intelligent and customized movie recommendation system is required due to the inefficiencies in the movie-choosing process.

- **Solution Approach:**
  - **Data Preprocessing:** Acquiring a comprehensive movie dataset containing information such as user ratings, actors, directors, and other relevant attributes.
  - **Cleaning and Formatting:** Preprocessing the dataset to handle the missing values, eliminate duplicates, and ensure consistency. Convert the dataset into a format suitable for analysis and fact creation.
  - **Knowledge Base and Facts:** The preprocessed data in the CSV file will be used to create the knowledge base and facts using the Python library PySwip.
  - Defining Rules: Utilizing Prolog's logical reasoning capabilities to determine rules based on user preference, movie attributes, and ratings.
  - **Accepting Inputs from Users:** After creating rules, the user input will be received, and specific recommendations for the movie will be given using rules and knowledge base. The knowledge base will be filtered based on the content and requirements of the user.
  - **Integration of Prolog and Python:** 'PySwip' is a Python interface for SWI-Prolog, a prolog implementation. SWI-Prolog is an open-source Prolog interpreter and development environment that provides a comprehensive set of tools and libraries for working with the Prolog language. It allows Python developers to integrate Prolog logic and functionalities into Python programs seamlessly.

- **Programming language:**
  - **Python:** Python is a high-level programming language known for its readability and simplicity. In the proposed project, Python is likely used for data processing, mapping data from datasets to prolog facts, and algorithm development.

- **Prolog:** It is a logical programming language used for symbolic reasoning and manipulation. It is used for knowledge representation, rule-based reasoning, and pattern matching.

- **Any Software Libraries:**
  - **PySwip:** It is a Python interface for SWI-Prolog, a widely used Prolog interpreter and development environment, and this serves as a bridge between Python and Prolog, allowing seamless integration of Prolog logic into Python programs.

- **Datasets:**

  We plan to create our dataset based on our interests. For further scope, we might use an external dataset available online.