Final Project Report

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Course Number: Course Name

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Title Cover Page:

Anime Recommendation System Design

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Team Members: Rynasia Pettiford; Christopher Cunningham

Course Name: SYSTEM DESIGN

Course ID: CSC272

Introduction/Project Summary:

Objectives:

The Anime Recommendation application aims to provide users with personalized anime recommendations through a user-friendly web application. Users, specifically anime enthusiasts, can access the application via a provided web link. Upon accessing the site, the application leverages recommendation algorithms to suggest anime titles based on user preferences, creating a dynamic and enjoyable anime-watching experience.

Overview:

Project Title: The Anime Recommendation Application

Team Members: Rynasia Pettiford, Christopher Cunningham

Customer Name: Anime Enthusiasts

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System Description:

System Requirements:

- Functional Requirements:

- Real-time personalized recommendations

- Open access to all anime enthusiasts

- User preference customization for tailored recommendations

- Bookmarking and watchlist functionality

Major Feature Specifications:

- Dynamic recommendation algorithms

- User preference customization

- Bookmarking and watchlist management

System Diagrams:

- Hardware Overview Diagram

- Software Overview Diagram

Economical, Technical, and Time Constraints:

-Estimated budget cost: $10,000

- Dependency on accurate anime metadata

- Privacy concerns regarding user preferences

Hardware Detailed Implementation:

For the Anime Recommendation Application, the hardware requirements are minimal as the system primarily operates as a web application. The hardware needed includes:

1. Web Server: A server capable of hosting the web application, with sufficient processing power and memory to handle concurrent user requests.
2. Storage Device: Sufficient storage capacity to store user preferences, anime metadata, and other application data.
3. Networking Equipment: Network infrastructure to ensure reliable connectivity between users and the web server.
4. Client Devices: Devices such as desktop computers, laptops, tablets, and smartphones used by users to access the web application.

Software Detailed Implementation:

In addition to the hardware, the software required for the Anime Recommendation Application includes:

1. Web Server Software: Software such as Apache, Nginx, or Microsoft Internet Information Services (IIS) for hosting the web application.
2. Database Management System (DBMS): Software like MySQL, PostgreSQL, or MongoDB for storing and managing application data.
3. Programming Languages and Frameworks: Programming languages such as JavaScript, HTML, CSS, and frameworks like React.js or Angular for developing the front-end user interface. For the back-end, Node.js, Python, or Ruby on Rails can be used.
4. Recommendation Algorithms: Software libraries or custom implementations of recommendation algorithms for generating personalized anime recommendations based on user preferences.
5. Security Software: Software tools for implementing security measures such as encryption, authentication, and access control to protect user data and ensure the integrity of the application.

Test/Evaluation Experimental Procedure and Analysis of Results:

The project works by collecting user preferences, including preferred genres, ratings, and viewing history, to generate personalized anime recommendations. The system utilizes recommendation algorithms to analyze user data and match it with relevant anime titles from a database. Test images/diagrams can be included to illustrate the user interface, recommendation process, and test scenarios.

For evaluation, the system's performance, accuracy of recommendations, and user satisfaction can be measured. A/B testing, user surveys, and feedback analysis can be conducted to assess the effectiveness of the recommendation engine.

Societal Impact of Project including Legal and Ethical Considerations:

The Anime Recommendation Application provides several benefits to individuals and groups. It enhances the anime-watching experience by offering personalized recommendations tailored to each user's preferences. This can lead to increased enjoyment and discovery of new anime titles.

However, there are legal and ethical considerations to address, such as privacy concerns regarding the collection and storage of user data. It's essential to comply with data protection regulations and ensure transparent communication with users regarding data usage and privacy policies. Additionally, ethical considerations include ensuring fairness and impartiality in recommendation algorithms and avoiding biases or discriminatory practices.

Conclusions

In conclusion, the Anime Recommendation Application successfully achieves its objectives of providing personalized anime recommendations to users. The project has developed a user-friendly web application with robust recommendation algorithms, enhancing the anime-watching experience for enthusiasts.

Reflecting on the project achievements, the team has effectively gathered user requirements, designed and implemented the system, and conducted testing and evaluation to ensure functionality and performance.

Recommendations for Future Work:

Moving forward, potential enhancements for the project include:

* Continuous improvement of recommendation algorithms to enhance accuracy and relevance.
* Integration of social features such as user reviews, ratings, and community forums to foster user engagement.
* Expansion of the application to include additional features such as personalized notifications, advanced filtering options, and recommendation customization settings.

Appendices:

1. recommendation\_algorithm.py - Python script containing the recommendation algorithms used in the application.

2. database\_schema.sql - SQL script defining the database schema for storing anime metadata and user preferences.

3. frontend\_code.html - HTML code for the front-end user interface of the web application.

4. backend\_code.js- JavaScript code for the back-end functionality of the web application.

5. styles.css- CSS stylesheet defining the styling and layout of the web application.

6. server\_setup\_instructions.md - Markdown file containing instructions for setting up the web server environment.

7. data\_privacy\_policy.txt- Text file outlining the privacy policy regarding user data collection and usage.

- Customer Contact Information

- Software Installation Instructions

- User's Manuals

- Acknowledgments

- References