Software Engineering Group Project
Summary Document

College: School of Software

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1 Project Overview

1.1 Project Name

- Enjoy life with poetry

1.2 Project Background

The "Poetry for Life" project aims to combine traditional Chinese poetry with modern technology through the game of flying flowers, providing an interesting and interactive learning platform. The project combines natural language processing technology and ancient poetry big data to provide users with an intelligent and interesting flying flower experience, stimulating users' interest in poetry and culture.

1.3 Project objectives

1. Provide an intelligent dialogue platform based on a large model, combined with poetry culture, to enhance users' cultural experience and interactive fun.
2. It realizes functions such as registration and login, large model dialogue, question recommendation, web link recommendation, etc.
3. Through gamification, it helps users better understand the content of poetry and improve their literary literacy.

1.4 Project Development Cycle

1. Cycle 1: September 21, 2024 - October 22, 2024
2. Cycle 2: October 23, 2024 - November 12, 2024
3. Cycle 3: November 13, 2024 - December 17, 2024

2 Team division of labor

Li Mao

1. Team leader, project leader, formulate project plans, and be responsible for overall project management and promotion. Hold project meetings regularly, track project progress, and solve problems in the project.
2. Participate in the construction of the front-end framework, and adjust and optimize the front-end code in the later stage
3. Complete the construction of the project backend framework, and realize large model API connection calls, chat dialogues, link recommendations and other functions.
4. Write test cases, test projects, track and fix bugs found during testing, and ensure project quality meets expectations.
5. Responsible for the preparation of project documents, including project summary documents and development progress record documents.

Zhang Ruotian

1. Project front-end design and implementation (complete the main interface and registration and login interface page layout, history storage display, recommended questions and recommended connection functions)
2. Backend prompt design (optimization of two versions of AI models, flying flower order and poetry question and answer)
3. API interface design, implementation of front-end and back-end data interaction, and API call of Zhipu big model
4. Implement storage and management of historical record json files
5. Server port deployment.
6. Project theme logo design and project poster production.

Miao Lin

1. Backend code writing and debugging , database code writing and connection,
2. Code testing, final code integration,
3. User deployment manual document writing

Hu Jinyang

1. Participated in the development of some robot interactions on the backend of the web page, the Feihualing game, and the modification of prompt words.
2. The functional integrity and security of the web pages were tested and the reliability of the database was determined.
3. Complete the writing of database design documents and test documents.

Gao Wenkang

1. Project front-end and back-end connection
2. Document writing, including requirements analysis documents, outline design documents, and detailed design documents
3. Project testing and tuning

3 Project Development Cycle Review

Cycle 1

1. Time: September 21, 2024 - October 22, 2024

2. Target:

- Determine the project direction and technical route.
- Build front-end and back-end frameworks to implement core functions.
- Complete the registration and login functions and the backend content of the large model dialogue.

3. Job Description:

- Project direction and demand analysis
- Front-end and back-end framework construction:
- Core function implementation: realize user registration, login, and password encryption storage.
- Access the large language model API to implement intelligent conversation functions and preliminarily realize the generation and return of conversation content.

4. Results:

- The basic framework of the project has been completed.
- The registration and login functions and the large model dialogue function have been implemented.
- It laid the foundation for subsequent development.

5. Plans for the next development cycle:

- Improve and beautify the front-end interface.
- Optimize the backend performance of large models.
- Added model switching and question recommendation functions.

Cycle two

1. Time: October 23, 2024 - November 12, 2024

2. Target:

- Improve the front-end interface design and enhance user experience.

- Optimize the backend performance of large models and add new features.
- Implement web link recommendation function.

3. Work content:
- Improved front-end interface:
- Optimize page layout and improve visual effects.
- Large model backend performance optimization:
- Optimize API call logic and reduce response time.
- Add a caching mechanism to improve conversation response speed.

4. Results:
- The front-end interface is more beautiful and the user experience is significantly improved.
- The backend performance of large models is optimized and the response speed is improved.
- Newly added functions include model switching, question recommendation, and web link recommendation.

5. Plans for the next development cycle:
- Improve development documentation.
- Complete project integration testing and optimize user experience.

Cycle Three

1. Time: November 13, 2024 - December 17, 2024

2. Target:
- Improve documentation at each stage of the project to ensure project traceability.
- Complete project integration testing and optimize user experience.
- Resolve legacy issues and ensure stable project operation.

3. Job Description:
- Write project requirement documents, design documents, and test documents.
- Organize code comments to ensure code readability.
- Project integration testing: Comprehensive testing of the front-end and back-end to ensure normal functions.
- Fix bugs found during testing.
- Optimize the interaction logic of the dialogue interface.

4. Results:
- The project documentation is complete, ensuring the maintainability of the project.
- Completed project integration testing and fixed all known bugs.

- The user experience is significantly improved and the project runs stably.

4 Project results

4.1 Function realization

1. Registration and login function: realizes user registration, login, and password encrypted storage.
2. Large model dialogue function: access the large language model API to realize intelligent dialogue function.
3. Model switching function: supports users to switch between different large models.
4. Question recommendation function: Recommend related questions based on user historical conversation records.
5. Web link recommendation function: Recommend relevant web links based on the conversation content.

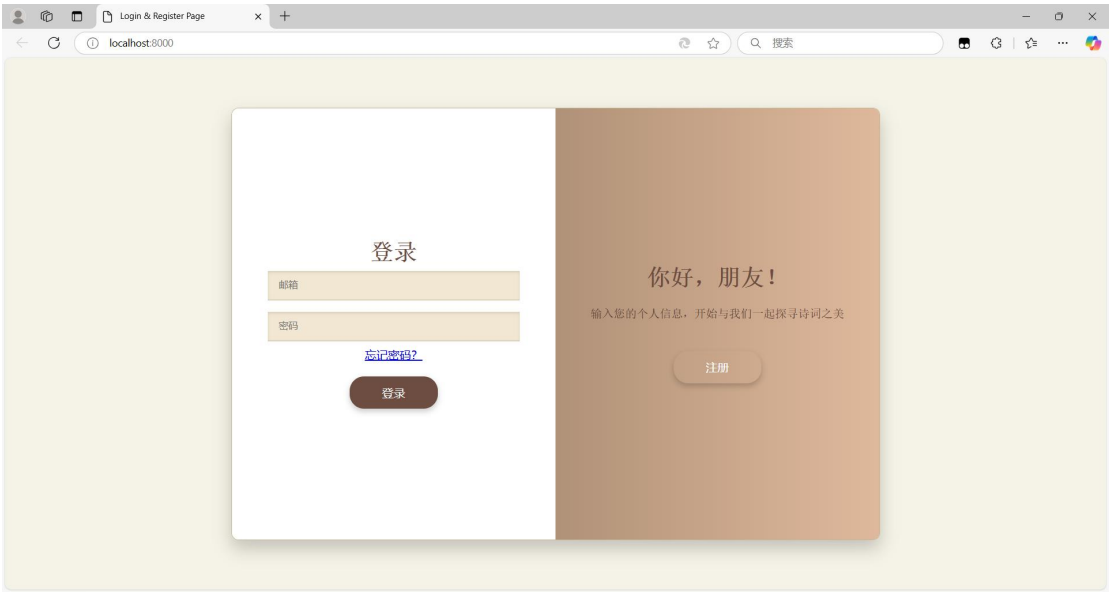
4.2 Deliverables

1. Project code: front-end and back-end code, as well as an .exe executable file
2. Project documents: requirement analysis document, outline design document, detailed design document, database design document, test document, project progress record document, project summary document .
3. Test Report
4. User Manual: Provides a user deployment manual to help users use the system smoothly.

4.3 Project Highlights

1. Intelligent dialogue function: The intelligent dialogue function is realized through the large model API, which improves the user's cultural experience.
2. Model switching function: supports users to switch between different large models, improving the flexibility of the system.
3. Web link recommendation function: Recommend relevant web links based on the conversation content, which enhances the user's learning experience.
4. User experience optimization: Through interface design and performance optimization, the user's operating experience has been significantly improved.

4.4 Project effects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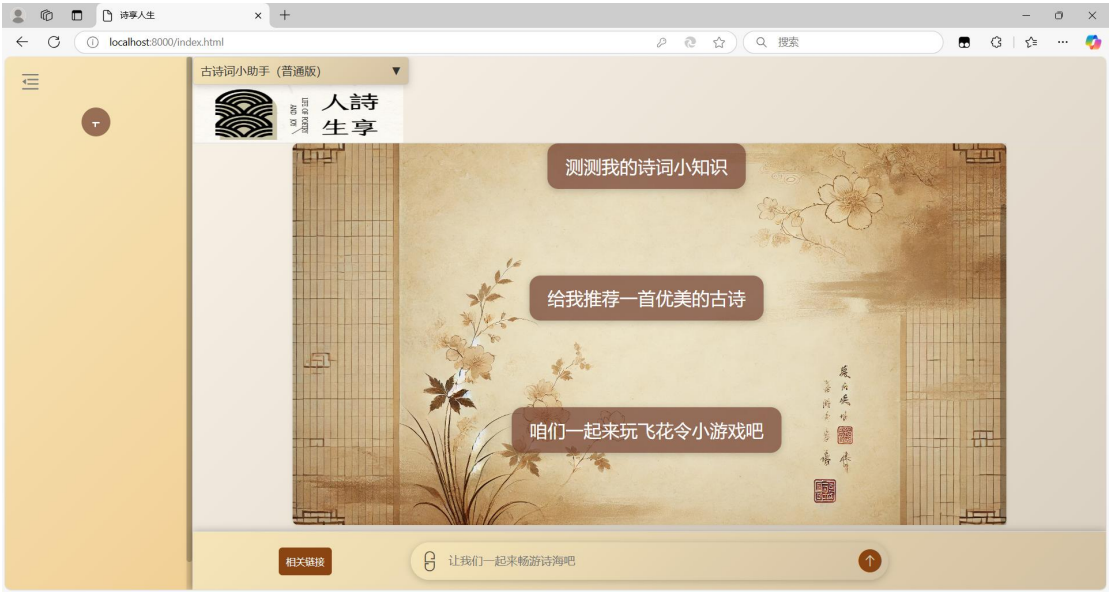
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咱们一起来玩飞花令小游戏吧
相关链接
让我们一起来畅游诗海吧

5 Project experience and summary

5.1 Successful experience

1. Develop in stages to reduce risks:
   - The project adopts a phased development approach, dividing the entire development process into three cycles, each cycle has clear goals and tasks. This approach effectively reduces project risks, ensures each stage is completed on time, and lays a solid foundation for subsequent development.
   - Experience: Phased development can help the team gradually achieve goals and avoid taking on too many tasks at once, thereby reducing the risk of project failure.
2. Efficient teamwork and smooth communication:
   - The clear division of labor and smooth communication among team members ensure the smooth progress of the project. Through regular project meetings and instant messaging tools, team members can share progress and solve problems in a timely manner.
   - Experience: Good team collaboration and communication mechanisms are the key to project success and can effectively improve team work efficiency.
3. Reasonable technology selection and smooth framework construction:
   - The project selected the appropriate front-end and back-end frameworks and database (MySQL) to ensure the scalability and maintainability of the project. The reasonable choice of framework provides a good foundation for subsequent function development and performance optimization.
   - Experience: Making reasonable technology selection at the beginning of the project can save a lot of time and energy for subsequent development.
4. Complete documentation to ensure maintainability:
   - At each stage of the project, we pay attention to the writing and organization of documents, including requirement documents, design documents, test documents, etc. These documents not only help team members understand project requirements and technical details, but also provide important references for subsequent maintenance and expansion.
   - Experience: Timely preparation and updating of documents is an important guarantee for project maintainability, and can help the team quickly locate problems and make improvements in the later stages of the project.

5.2 Lessons from Failure

1. The large model API has a slow response speed, which affects the user experience:
   - During the project development process, the large model API had a slow response speed, which caused users to wait for a long time when communicating with the system. Although this problem was partially alleviated through caching mechanisms and performance optimization, it still affected the user experience.
   - Summary : When choosing a large model API, you need to fully consider its response speed and performance to avoid affecting user experience due to API performance issues.
2. The accuracy of the web link recommendation function is insufficient:
   - Although the web link recommendation function has been implemented, the accuracy of its recommendation results is low and cannot fully meet the needs of users. This is mainly due to the lack of data support for the recommendation algorithm, which leads to low relevance of the recommendation results.
   - Summary : The recommendation system needs more data support and algorithm optimization to improve the accuracy of recommendation results and user satisfaction.
3. Time estimates in project management are not accurate enough:
   - At the beginning of the project, the time estimates for some tasks were not accurate enough, which led to delays in the development progress at some stages. Although the tasks were eventually completed by adjusting the plan and working overtime, this also exposed the problem of time estimation in project management.
   - Summary : When making project plans, you need to estimate task times more carefully and reserve a certain amount of buffer time for possible delays.