

Brief and Summary of the Software Project

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Brief of project

The project aims to design and construct a new system for organizers in various fields, enabling them to create flexible templates for judging and grading. The system also includes modules for users, typically teachers, to assign marks to tasks and provide feedback to students regarding their homework or exams.

The entire project is divided into three interconnected and sequential parts: one for organizers, one for markers, and one for students who receive the results. To facilitate the workflow, two data formats, `.toMark` and `.Mark`, are predefined for communication between each pair of parts.

The first part, designed for organizers, is implemented by Yu Li using C++ with Qt. The second part, tailored for markers, is completed by Xiangyu Kang in Python. The final part, developed for students, is carried out by Yinghao Zhou, also in Python. Each part features an intuitive user interface along with robust back-end logic.

Details of implementing

Part for organizers

The first part of the project focuses on developing a customizable feedback system, with its primary component, `EDIT.exe`, serving as a tool for creating structured grading templates. This tool streamlines feedback by providing educators with a flexible and user-friendly interface.

In `EDIT.exe`, emphasis is placed on creating an intuitive interface that simplifies the process of building grading templates. Developed using the Qt framework with C++, the tool ensures reliability and cross-platform compatibility. The interface includes buttons for adding components such as titles, grading fields, and comment sections, dynamically generating items in the database. These items are displayed in a table along with their attributes, providing real-time feedback to the user. To maintain clarity, each component includes attributes like `TYPE`, `NOTE`, and `TEXT`, which define its purpose and content. A `DELETE` function allows editors to remove unwanted components. The finalized template is exported as a `.toMark` file, adhering to a standardized format that ensures compatibility.

The `.toMark` file serves as a structured template for grading, bridging the workflow between `EDIT.exe` and subsequent processes. Each line defines a component with three attributes:

- TYPE: Specifies the type of component
- NOTE: Provides context or guidance for markers.
- TEXT: Displays content visible to users.

Example of EDIT.exe

The screenshot shows a software window titled "MainWindow" with a subtitle "Marking system for organizers". The window is divided into two main sections. The left section contains a table with three columns: "TYPE", "NOTE", and "TYPE". The right section contains a vertical stack of controls: a "Create New Item" button, a "Type of Item" dropdown menu currently set to "TITLE", a text area labeled "Notes and hints for marker", another text area labeled "Text for markers and students", a "Delete Last Item" button, and a "Create Marking Template" button.

TYPE	NOTE	TYPE
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Create New Item

Type of Item: TITLE

Notes and hints for marker

Text for markers and students

Delete Last Item

Create Marking Template

Creating items

MainWindow

Marking system for organizers

	TYPE	NOTE	TYPE
1	TITLE	Homework ...	Grades
2	TITLE	Section 1	Grades for ...
3	TITLE	clarity	clarity for Secti...
4	INTRODUCTION	Evaluate clarity	The clarity of ...
5	GRADE	Grades clarity	Your score of ...
6	COMMENT	Comment clarity	Marker's ...
7	COMMENT	Comment clarit...	Advice on how ...

Create New Item

Type of Item TITLE

Notes and hints for markor

creativity

Text for markers and students

creativity for Section 1

Delete Last Item

Create Marking Template

Result in output.toMark

```

1 TYPE: TITLE, NOTE: "Homework Grading", TEXT: "Grades"
2 TYPE: TITLE, NOTE: "Section 1", TEXT: "Grades for Section 1"
3 TYPE: TITLE, NOTE: "clarity", TEXT: "clarity for Section 1"
4 TYPE: INTRODUCTION, NOTE: "Evaluate clarity", TEXT: "The clarity of homework"
5 TYPE: GRADE, NOTE: "Grades clarity", TEXT: "Your score of clarity"
6 TYPE: COMMENT, NOTE: "Comment clarity", TEXT: "Marker's comment on clarity"
7 TYPE: COMMENT, NOTE: "Comment clarity improve", TEXT: "Advice on how to improve clarity"
8 TYPE: TITLE, NOTE: "creativity", TEXT: "creativity for Section 1"
9

```

Part for markers

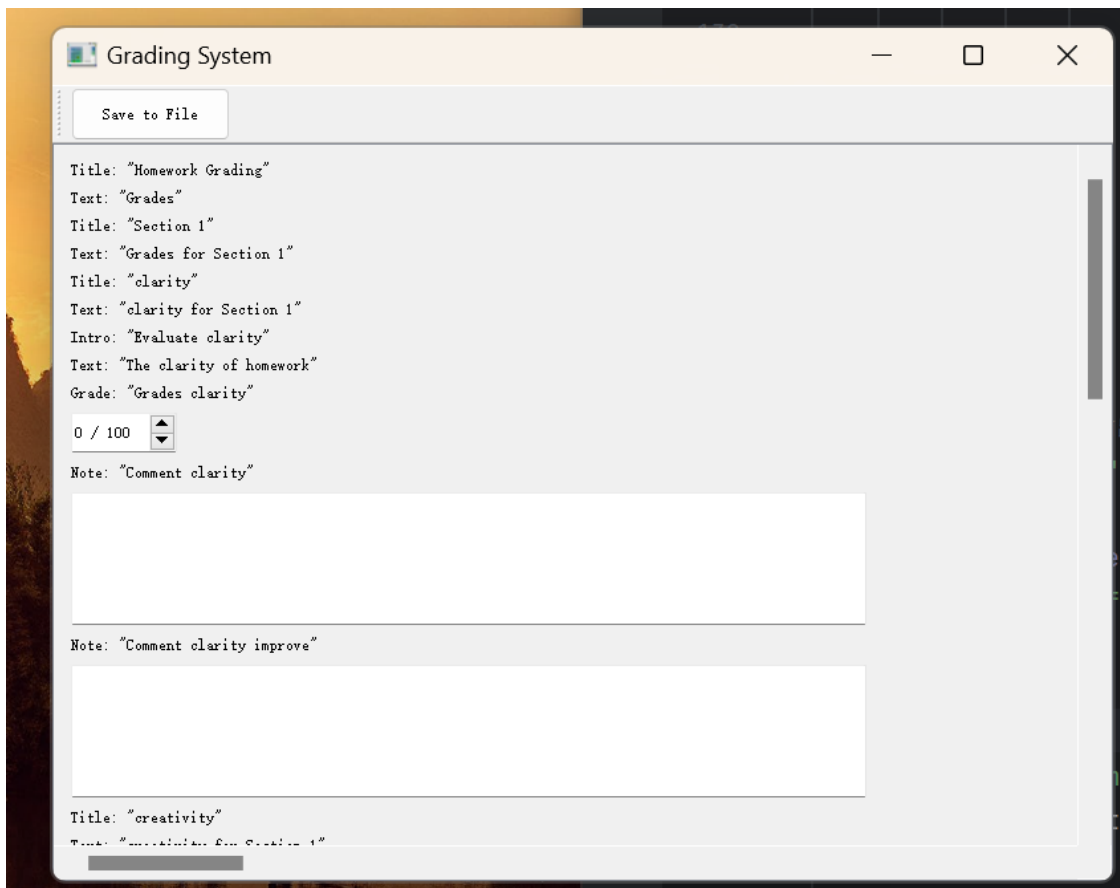
In the project's middle section, our team ensured that the data generated in the first section was correctly formatted and prepared for use in the third section. We managed various data inputs, including "title," "intro," "grade," and "comment," using methods like `handle_title`, `handle_intro`, `handle_grade`, and `handle_comment` within the `GradingApp` class. These methods leveraged PyQt5 widgets, such as `QLabel`, `QSpinBox`, and `QTextEdit`, to efficiently display and capture user input.

For example, when handling the "grade" input, a `QSpinBox` was used to allow users to select a score. Initially, the maximum value was set too high, leading to invalid entries. After discussions with the first-section team, the range was adjusted to ensure valid grades could be selected.

Similarly, the "comment" section's narrow text box made it difficult for users to input detailed feedback. Resizing the QTextEdit resolved this issue, enhancing usability and readability.

Once the inputs were correctly formatted and adjusted, the team ensured that all data was accurately saved using the `save_to_file` method. For instance, grades were stored as `TYPE: GRADE, NOTE: <note>, VALUE: <value>`, while comments were saved as `TYPE: COMMENT, NOTE: <note>, COMMENT: <comment>`. This structured output facilitated seamless use in the third section, ensuring a smooth transition of information throughout the project.

Instance of Grading System



Part for students feedbacks

The student module is designed to display the content of files generated by the teacher grading module. After careful planning, we adopted the `.txt` file format for files produced by the teacher module due to its lightweight, widely supported, and easy-to-parse nature. To ensure smooth integration between the teacher and student modules, we defined the structure and content of the `.txt` files. These files include elements such as `TYPE: GRADE`, `TYPE: COMMENT`, and other formatted data. The student module reads, parses, and clearly displays this information to students.

Instance of Student Feedback



In summary, this project addresses key challenges in grading and feedback processes by leveraging modern technologies to create practical and efficient solutions. This tool empowers educators to create standardized and structured templates, while the student module ensures that feedback is accessible and easy to understand. By enhancing clarity and efficiency, this system not only improves the teaching and learning experience but also sets a foundation for scalable and adaptable grading solutions in diverse educational settings.

Mutual View

Yu Li To Xiangyu Kang :

Xiangyu Kang is a highly rational and dependable collaborator. His EDR for the project are detailed and well-organized, making our planning and implementation much smoother. His ability to anticipate challenges and provide clear solutions has been a great help to the team.

Kang is also an excellent team player. His strong sense of cooperation and clear communication skills are key to resolving disagreements and keeping the team aligned. He handles conflicts calmly and ensures everyone's opinions are considered before making decisions.

In addition to his teamwork, Kang's programming skills stand out. He completes his tasks efficiently and delivers high-quality results, whether it's debugging or developing new features. His technical expertise and reliability make him an essential part of the team.

Overall, I feel lucky to have such a dependable and capable friend like Xiangyu Kang.

Yu Li To Yinghao Zhou:

Yinghao Zhou is a creative and proactive team member who consistently brings new ideas and energy to our projects. He takes the initiative to explore different methods for implementing tasks and focuses on ensuring the practicality of our programs. For example, he has suggested several ways to streamline our workflows, making them more user-friendly and efficient. His ability to think outside the box has been a great asset to the team.

In addition to his technical contributions, Zhou is easygoing and approachable. He actively listens to others' suggestions and encourages open discussions, which helps maintain a positive and harmonious team environment. His willingness to support teammates and his collaborative nature make him someone everyone enjoys working with.

In conclusion, I am very pleased to collaborate with Yinghao Zhou. His creativity, problem solving skills, and approachable personality greatly enhance the team's overall performance.

Yinghao Zhou To Yu Li

Yu Li is a highly careful, reliable, and responsible team member. In the project, he shows us his excellent logic thinking and problem-solving abilities, efficiently handling complex tasks and providing clear direction for the team. His deep commitment to the project allows him to identify potential issues early and give a reasonable solution.

Yu Li is particularly outstanding. He not only can give us some good ideas but also can be a good listener. He can listen other members' idea and give us his opinion this helps the team quickly reach consensus. He is also a good programmer who consistently delivers high-quality code and excellent project outcomes.

Yu Li still needs to improve. He can be more proactive in proposing solutions. He can use his experience and knowledge to help the team create new solutions and help the team innovate.

Overall, Yu Li is an invaluable member of the team, and with these small improvements, his contributions could become even more impactful.

Yinghao Zhou To Xiangyu Kang:

Kang is a very reliable team member, he has shown excellent organisational skills and strong execution on projects. In our program, he is always quick to catch the core of a problem drive the project forward with clear logic and have a good plan. His EDR also helped us to build a good foundation for our program. Additionally, his professional skills in programming are truly impressive. His code is not only efficient but also highly readable. What's even more valuable is his communication and coordination skills within the team, helping as quickly as possible to solve all our different opinions. Overall, working with Kang gave me a great impression, and I'd love to work with him again.

Although Kang has performed exceptionally well, there are still areas where he can improve. For example, he could enhance the level of detail in his documentation to help all the team members better understand his processes and decisions. All in all, working with Kang is a good cooperation experience.

xiangyu kang to yinghao zhou :

Yinghao Zhou recently took on the task of visualizing teacher evaluations and scoring criteria. His efforts provided students with a clear perspective, allowing them to better understand the feedback from their teachers. Although there is still room for improvement in data processing and visualization, Zhou demonstrated his enthusiasm for technology and attempted to use various tools to present the information.

At the beginning of the project, Zhou faced some challenges, particularly in how to effectively present the teacher's scoring and evaluation information. He actively sought advice from classmates and teachers, gradually improving his approach and striving to find better ways to organize and display the feedback content. While his work still needs refinement in certain details, his demonstrated learning ability and adaptability are commendable.

Zhou's team spirit is also noteworthy; he is eager to share his ideas and willing to accept feedback. Overall, Yinghao Zhou performed well in this task. Although there are many areas for him to learn, his effort and progress are evident.

xiangyu kang to yu li :

Yu Li demonstrated a certain level of creativity and practicality in the UI design task for generating scoring criteria for different subjects for teachers. His design aims to simplify the scoring process for teachers, making it more efficient. In terms of coding, Li has shown solid skills, effectively translating design concepts into functional interfaces. Additionally, his excellent organizational abilities in the project have made the team's workflow smoother, ensuring efficient coordination at every stage.

However, there is still room for improvement in user experience, as some features of the interface may not be intuitive for users. During the implementation of the project, Li also encountered some technical difficulties, such as in interface layout and functionality. Nevertheless, he actively sought guidance and worked hard to overcome these challenges. While there are areas that need further optimization, his efforts and attention to detail are commendable.

Moreover, Li has been open in communicating with team members and is willing to accept suggestions. His teamwork skills have helped him grow continuously throughout the project. Overall, Yu Li has shown great potential in this task, especially in coding and organizational abilities. Although there are still many areas to learn, his effort and positive attitude are impressive.