



In Partial Fulfillment of the Requirements for the Subject
CS152 (Human Computer Interaction)
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Part 3.1: System Prototype

Project Description:

Project Grace is an ambitious undertaking that proposes a revolutionary digital solution called "Grace Records: Canonical Record Sorter." This innovative system is specifically designed to transform how parish offices within the Archdiocese of Davao manage baptismal and confirmation records. The project is driven by the recognition of the ongoing difficulties faced by these institutions in handling physical records. These challenges often lead to delays, misplacement of documents, and frustration for both parishioners and staff. Project Grace leverages the power of modern technology to streamline and enhance record-keeping processes. It aims to ensure efficiency, accuracy, and transparency in administering these sacred sacraments. The development of this system signifies a significant step forward in embracing digital transformation within the church, aligning with the broader goals of fostering innovation and promoting sustainable practices.

Requirements summary:

MINIMUM REQUIREMENTS	Processor (CPU)	Intel Pentium or AMD A-Series (Dual Core)
	OS	Windows 10
MAXIMUM REQUIREMENTS	RAM	4GB RAM
	Processor Cores	Intel Core i5 or Ryzen 5 (Quad Core)
	OS	Windows 11 or up

Table 1. System Requirements

To ensure a smooth user experience, Grace Records sets minimum and recommended system requirements. The software can run on a basic system with an Intel Pentium or AMD A-Series dual-core processor and a Windows 10 operating system.

However, for optimal performance, a quad-core Intel Core i5 or Ryzen 5 processor running Windows 11 or later is recommended. This approach caters to users with varying computer capabilities, ensuring accessibility while offering a smoother experience for those with more powerful machines.

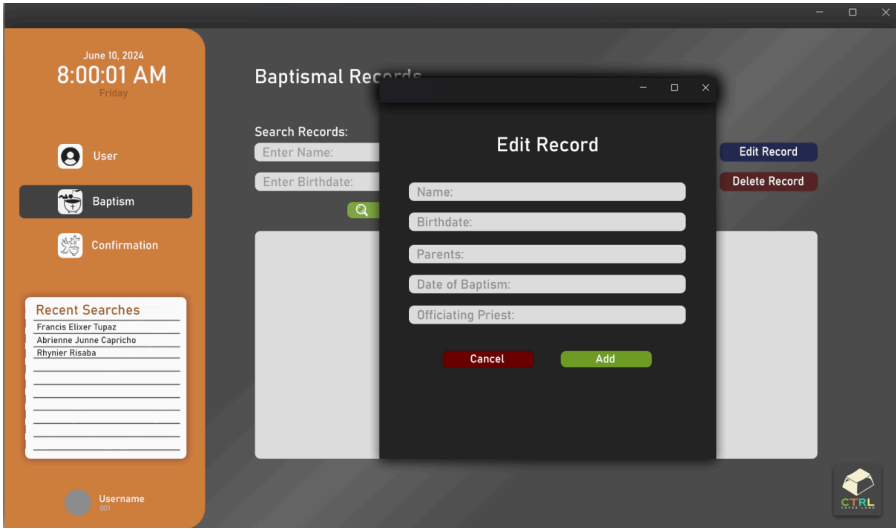
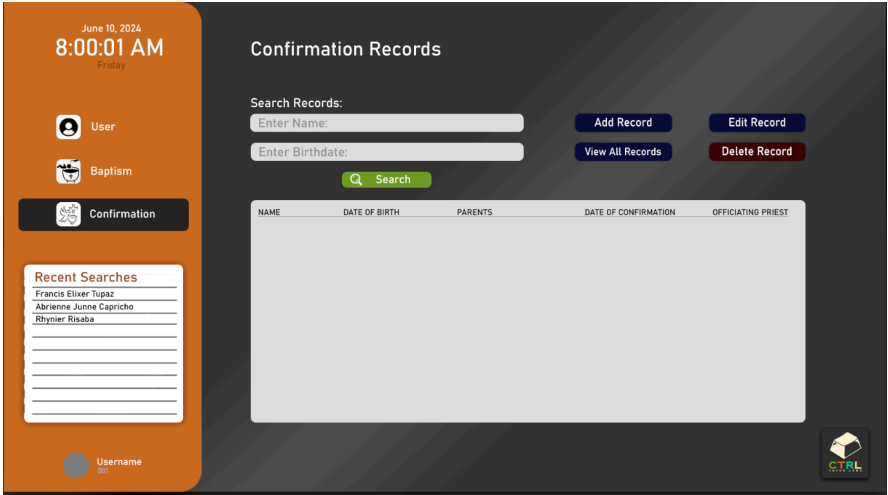
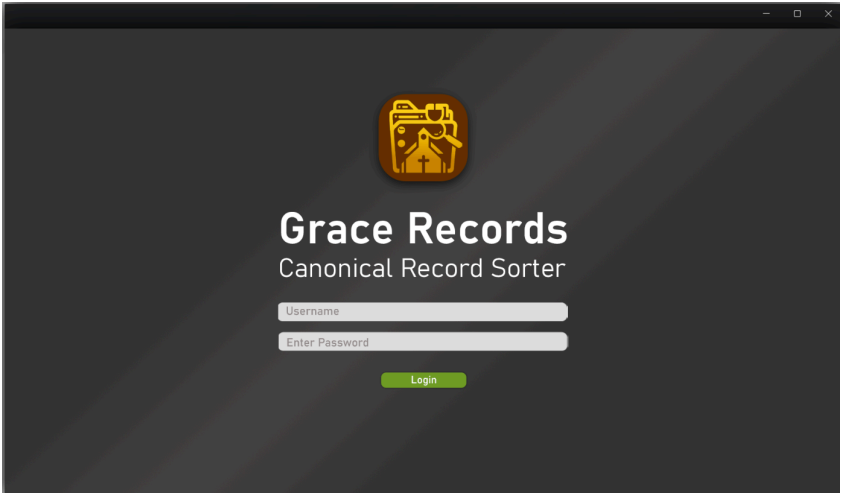
Prototype Description:

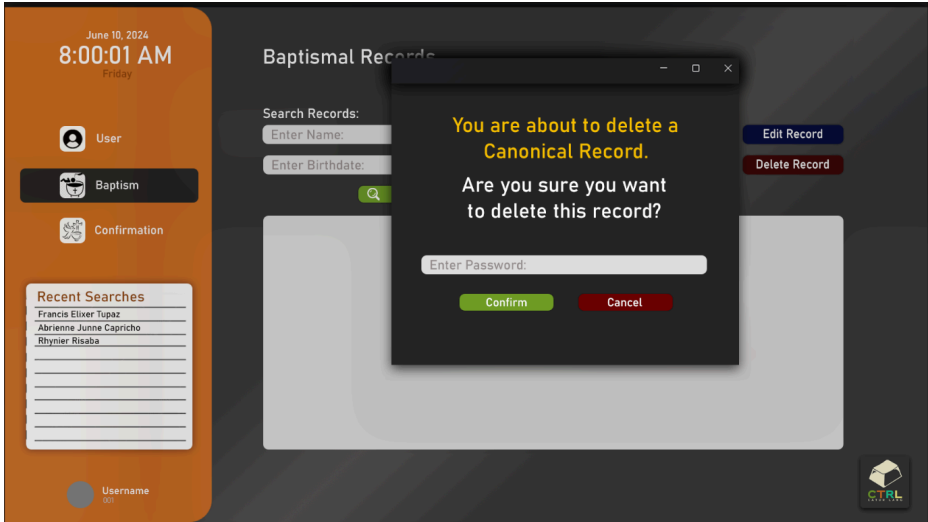
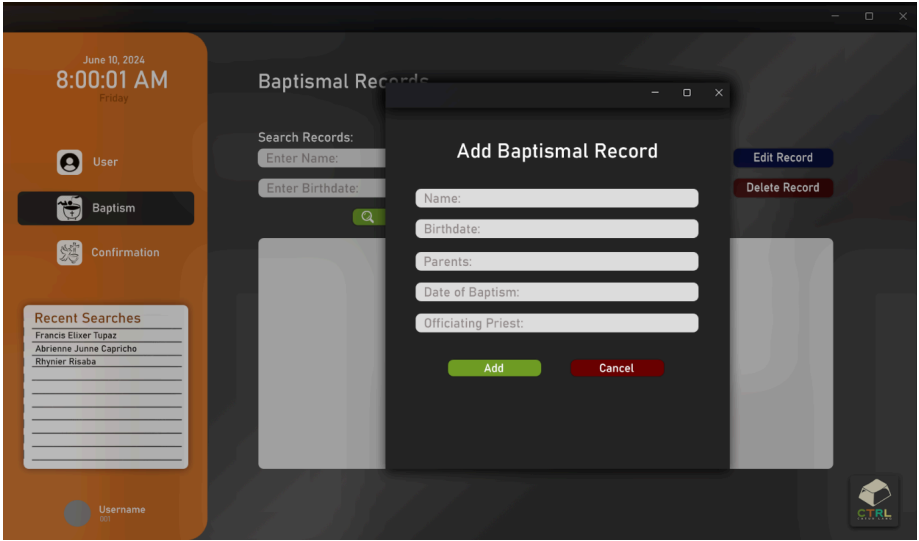
The prototype was created with the use of photoshop. Adobe Photoshop is a powerful software program used for raster image editing. In simpler terms, it allows you to edit and manipulate photos and digital images. It's a popular choice for photographers, graphic designers, and web designers. This platform is also very conducive to collaboration among teams.

User Scenario:

Father Michael, the parish priest, used to dread the time-consuming ordeal of searching for baptismal and confirmation records. Dusty file cabinets held years of paperwork, often leading to misplaced documents and frustrated parishioners waiting for important records. Then, Grace Records arrived. The change was immediate. With a few clicks, Father Michael could access any record digitally. No more shuffling through endless files – Grace Records' intuitive search function made finding specific entries a breeze. This newfound efficiency translated to happier parishioners. Baptismal certificates for school enrollment or confirmation documents needed for marriage preparation were readily available, eliminating delays and anxieties. The secure digital storage provided by Grace Records also offered peace of mind, knowing these crucial documents were safe from loss or damage. Beyond streamlined record retrieval, Grace Records offered unexpected benefits. Father Michael discovered features for generating reports on parish demographics and tracking upcoming confirmation anniversaries. This newfound data allowed him to tailor outreach programs and better serve his community. With Grace Records, Father Michael was no longer a slave to paperwork. He was empowered to focus on his core mission: serving his parishioners.

Mock-up/Prototype:





Prototype Flow

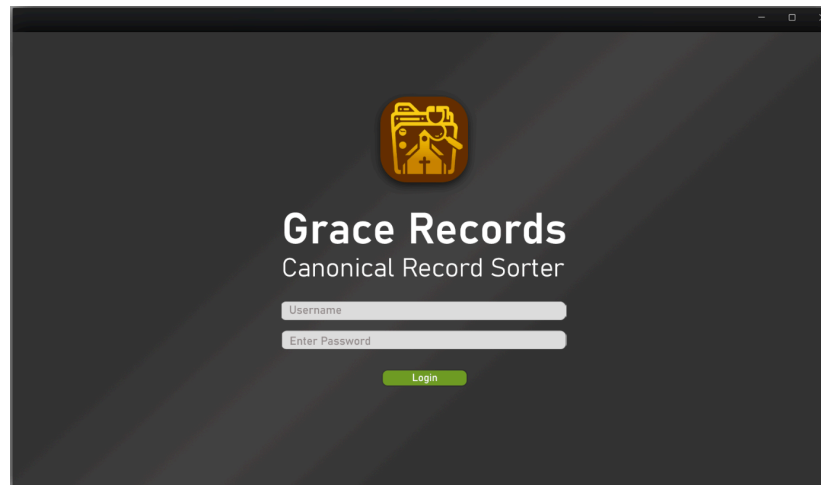


Figure 2. Entering and Exiting Application

Figure 2 will demonstrate how users can enter and the program through logging in their credentials first.

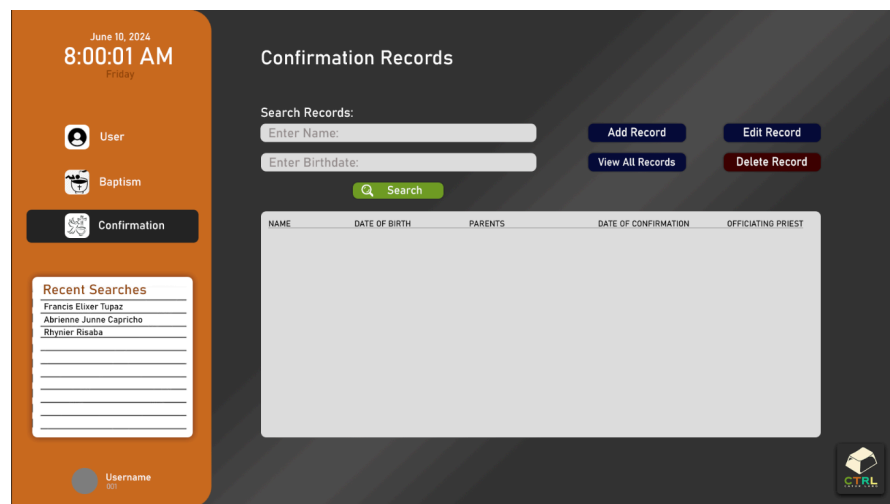


Figure 3. Main page prompt New Users

Figure 3 is where the main page is shown and the user is prompted to do the following actions, add, edit, delete & view all records.

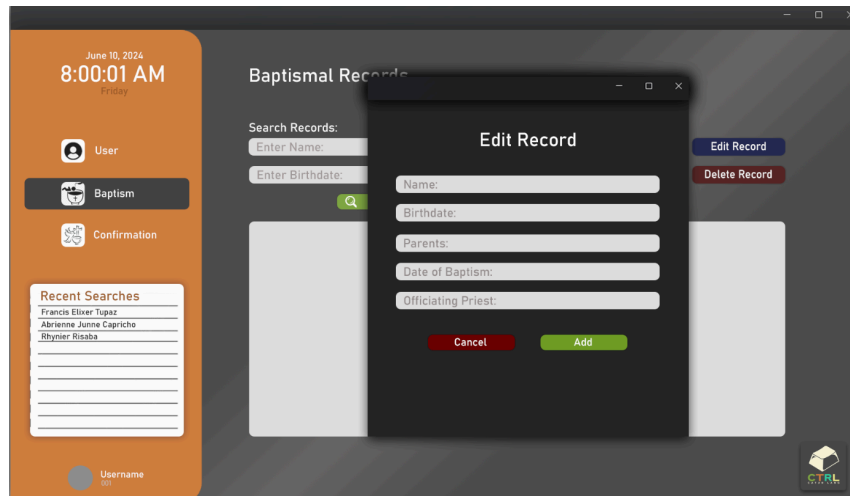


Figure 4. Editing a record

Figure 4 will show how a user can edit an existing record through typing the name, birthdate, parents, date of baptism & the officiating priest.

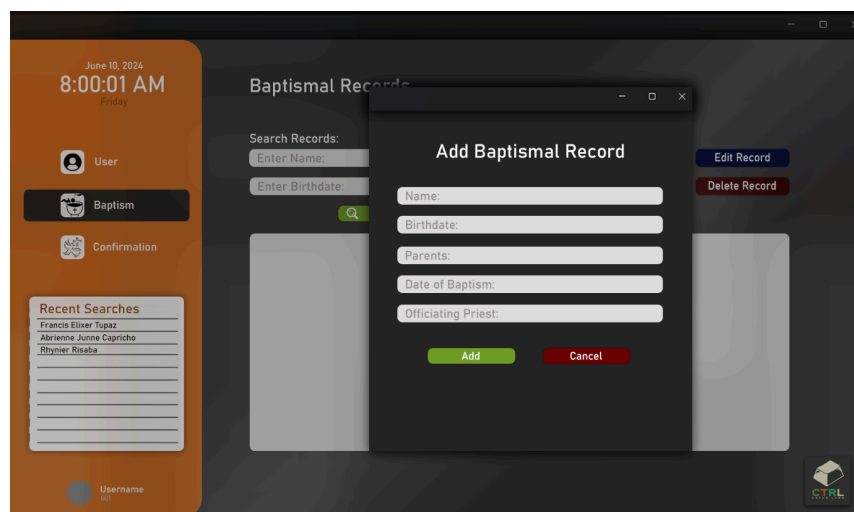


Figure 5. Adding a baptismal record

Figure 5 shows how the user can add his baptismal record into the system by typing down his name, birthdate, parents, date of baptism & officiating priest.

Rationale

The team opted for Adobe Photoshop to create the Grace Records prototype due to its familiarity and design capabilities. While Photoshop isn't primarily for interactive prototypes, it allowed the team to effectively showcase the visual design and layout of the system. This approach facilitated collaboration among team members and enabled the creation of a polished presentation for user feedback. However, a potential limitation is that Photoshop prototypes aren't interactive, preventing users from simulating real-world interactions with the system. Additionally, unlike collaborative tools, user feedback might require separate sessions or file sharing for integration.

Changes to the Requirements:

The Grace Records prototype remained faithful to the initial design concept. However, the team meticulously refined the layout to provide a more comprehensive and detailed representation of the system's functionalities. This enhanced clarity will be valuable in future testing and development phases.

Initial Evaluation Plan:

The Grace Records team prioritizes user-friendliness. To gather in-depth feedback, they'll conduct a dual evaluation: in-person surveys and a Google Forms version. This offers wider participation and flexibility. The evaluation itself will be divided into three sections: Usability, Heuristics, and User Feedback. This comprehensive approach aims to understand user needs, identify areas for improvement, and gather direct feedback for a user-friendly and efficient parish record management system.

Usability Specification

The Grace Records prototype prioritizes user experience through four key metrics:

Effectiveness: This measures the prototype's ability to help users successfully complete intended tasks.

Efficiency: This assesses how easily and quickly users can navigate and perform actions within the system.

Utility: This evaluates whether the prototype offers a comprehensive set of functionalities to address all necessary record management tasks.

Learnability: This focuses on how intuitive and user-friendly the system is, ensuring users can quickly grasp its functionalities with minimal training.

By prioritizing these measures, the Grace Records team aims to create a system that is not only effective but also efficient, versatile, and easy to learn for parish office users.

Memorization: The outcome of this part will show how easily the user will remember in using the system's function.

Population

Usability testing for the Grace Records prototype will involve a group of college students. These participants will be tasked with simulating record management workflows within the system, such as adding, searching for, and editing baptismal and confirmation records. A successful test run will demonstrate the prototype's ability to effectively handle these core functionalities.

Prototype Tasks

The Grace Records prototype evaluation will be divided into three core tasks:

Main Menu Navigation: Participants will enter and navigate the system's main menu, demonstrating their ability to find and access key functionalities.

User Registration: Participants will be tasked with registering for an account within the system, testing the registration process for clarity and ease of use.

Record Management: Participants will simulate core record management tasks, such as adding, searching for, and editing baptismal or confirmation records. This will assess the system's effectiveness in handling these crucial workflows.

Roles

The team will gather at least 10 participants when conducting this evaluation. The team will split the number of participants and will have similar roles in this evaluation.

Developer/UI Designer Member	Task(s)
John Rhynier Risaba	responsible for facilitating the testing session, guiding participants through the tasks, and observing their interactions with the prototype. Additionally, they will be tasked with collecting verbal feedback and insights from participants throughout the evaluation.
Abrienne Junne Capricho	will serve as the Data Recorder. They will meticulously track the time spent by participants on each assigned task within the Grace Records prototype. This data will be crucial in analyzing the system's efficiency and user flow.

Francis Elixer Tupaz	will act as the Notetaker. They will document participants' experiences while using the prototype. This includes capturing any verbal or non-verbal cues that may indicate areas of confusion or frustration, as well as noting any positive aspects of the user experience.
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Table 1. Tasks of Members

Main Menu Navigation	Within 1 minute	Highly Acceptable	Successful
	Over 1 minute	Not Acceptable	Unsuccessful
User Registration	Within 2 minutes	Highly Acceptable	Successful
	Over 3 minutes	Not Acceptable	Unsuccessful
Record Management	Within 4 minutes	Highly Acceptable	Successful
	Over 5 minutes	Not Acceptable	Unsuccessful

Table 2. Time Interpretation

These benchmarks serve as a guide to assess the efficiency and user-friendliness of the Grace Records prototype. Ideally, users should be able to complete core tasks within the designated timeframes. Significant deviations from these benchmarks may indicate potential usability issues that require further investigation.

Heuristic Evaluation

The Grace Records prototype was evaluated using Jakob Nielsen's 10 usability heuristics. Here's a summary of the findings:

Positive Aspects:

Visibility of System Status: The prototype will keep users informed about updates and actions in progress through clear notifications or progress bars.

Match Between System and the Real World: The system will use church-specific terminology familiar to users, enhancing understanding and reducing confusion.

User Control and Freedom: Users will have the flexibility to browse locations and prices without booking a ride, and the ability to edit personal information or switch accounts, promoting a sense of control.

Consistency and Standards: Consistent button placement and design throughout the application will ensure a seamless user experience.

Error Prevention: Error messages will be displayed promptly to alert users of any mistakes during data entry or actions.

Recognition over Recall: The interface will clearly present objects, actions, and options, eliminating the need for users to memorize complex steps.

Flexibility and Efficiency of Use: The system will be designed to be user-friendly for both experienced and novice users, catering to a range of comfort levels.

Aesthetic and Minimalist Design: The interface will prioritize clear information presentation, avoiding clutter and unnecessary elements to minimize distractions.

Areas for Improvement:

Help Users Recognize, Diagnose, and Recover from Errors: Error messages should be clear and actionable, providing specific solutions or recovery options for users to address issues effectively.

Help and Documentation: While the prototype may not require extensive documentation initially, including on-demand help features (e.g., context-sensitive help, FAQs) within the system would empower users for independent navigation and troubleshooting.

Overall:

The Grace Records prototype demonstrates a strong foundation in user-friendliness. Addressing the need for more informative error messages and potentially integrating on-demand help resources would further enhance the user experience and empower users to navigate the system confidently.

Participant Survey and Feedback

DATA GATHERING METHOD	DESCRIPTION
Survey (Quantitative)	The Grace Records prototype evaluation will involve a user survey to collect data on their experience. This survey will utilize a 5-point Likert scale, allowing participants to rate their agreement with various statements about the prototype's usability, design, and overall effectiveness.
Feedback/Comments (Qualitative)	The Grace Records prototype evaluation survey won't just ask multiple-choice questions. It will also include an open-ended feedback section where participants can share their specific thoughts, concerns, and suggestions for improvement regarding the prototype. This allows them to go beyond predefined options and provide valuable insights into their user experience.

Table 3. Data Gathering Methods

The table above shows the different gathering methods that the team will be using. These include the survey (quantitative) and feedback/comments (qualitative).

Questions	Method of Answer
Section 1	
Participant Number	
On a scale of 1 to 5 how would you rate your experience with the GRACE RECORD prototype?	5-Point Scale
On a scale of 1 to 5 how would you rate the design and colors of the prototype?	
On a scale of 1 to 5 how would you rate the simplicity of the tasks?	
Questions	Method of Answer
Section 2	
Viewing records	5-Point Scale
Deleting records	
Editing records	
Adding records	
Question	Method of Answer
Section 3	
Feedback/Comments	Short Answer

Table 4. Survey Questionnaire

The table above lists the questions that will be included in the prototype's survey. The survey will be handled to the participants using a link and can still be viewed through this link: <https://forms.gle/9hWm1N61GoQw6P6m6>

Task	Time to accomplish	Interpretation	Classification
Scale	Range value	Interpretation	Classification
5	4.50-5.00	Highly Acceptable	Successful
4	3.50-4.49	Acceptable	
3	2.50-3.49	Moderately acceptable	Neutral
2	1.50-2.49	Fairly Acceptable	Unsuccessful
1	1.00-1.49	Not Acceptable	

Table 5. 5-Point Likert Scale Survey Interpretation

In this table, it shows the interpretation of the survey questions that will be given to the participants, and it will be used to interpret whether the design is successful, neutral, or unsuccessful.

Part 3.2: System Evaluation

Project Description:

Project Grace is an ambitious undertaking that proposes a revolutionary digital solution called "Grace Records: Canonical Record Sorter." This innovative system is specifically designed to transform how parish offices within the Archdiocese of Davao manage baptismal and confirmation records. The project is driven by the recognition of the ongoing difficulties faced by these institutions in handling physical records. These challenges often lead to delays, misplacement of documents, and frustration for both parishioners and staff. Project Grace leverages the power of modern technology to streamline and enhance record-keeping processes. It aims to ensure efficiency, accuracy, and transparency in administering these sacred sacraments. The development of this system signifies a significant step forward in embracing digital transformation within the church, aligning with the broader goals of fostering innovation and promoting sustainable practices.

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	OS	Windows 11 or up
	RAM	8GB
OTHER REQUIREMENTS	Permissions	notification, and storage

Table 1. System Requirements

Overview

The team will conduct a face-to-face survey and at the same time conduct it through google forms. This evaluation will be divided into three parts: Usability Specifications, Heuristics, Evaluation, and Participant Survey and Feedback.

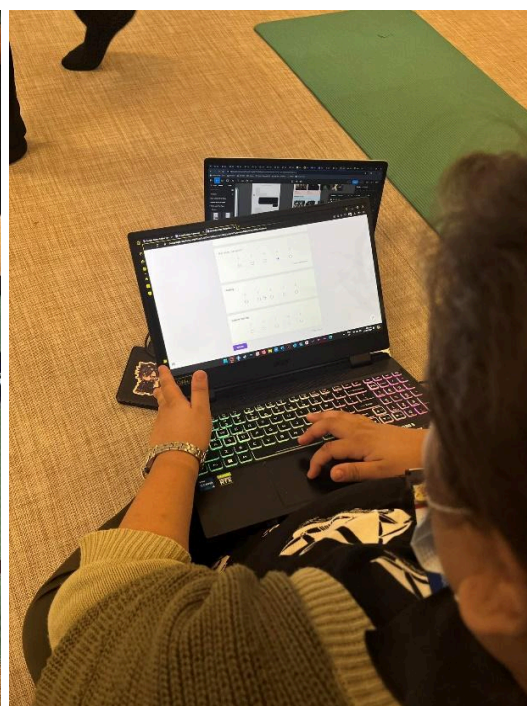
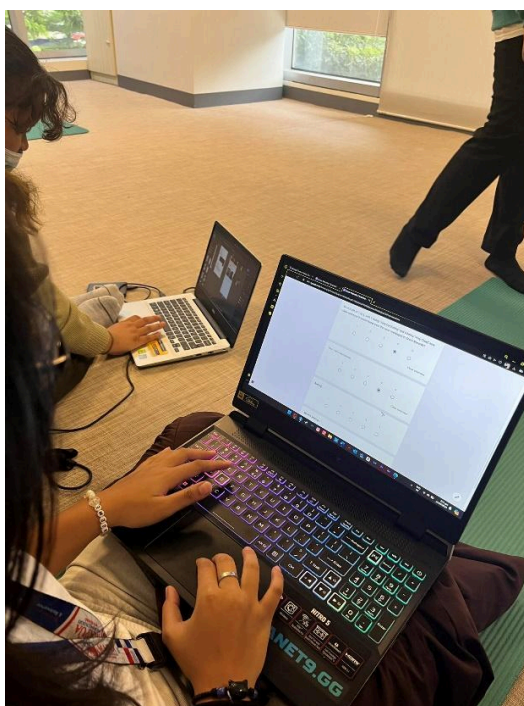
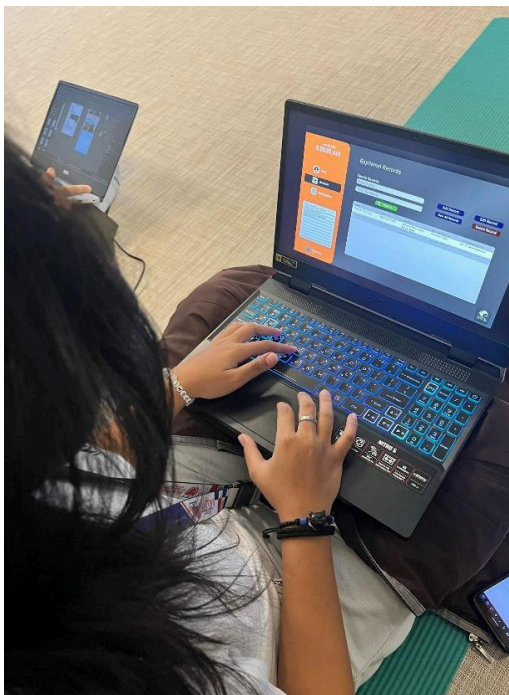
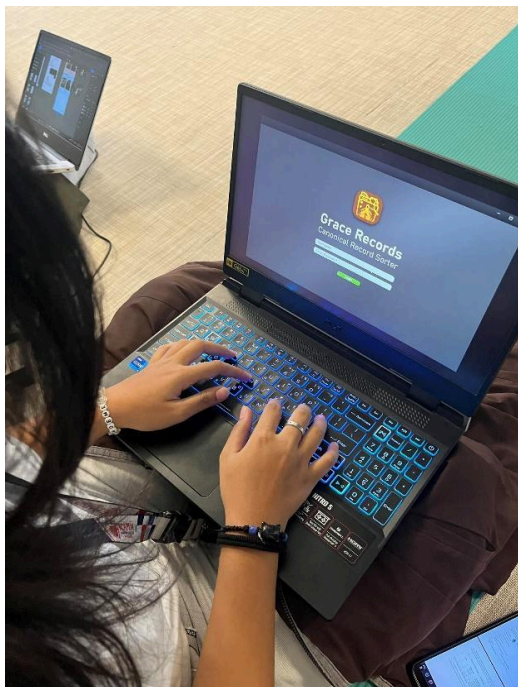
Technique	Description
Usability Specifications	Grace Records prioritizes user-friendly design. We define clear tasks (adding, editing records) for parish staff and ensure a user-friendly interface with familiar language and error handling. Following usability principles, we focus on clear organization and accessibility to empower parish offices.
	Grace Records undergoes a Nielsen Heuristic evaluation to identify usability

Heuristics Evaluation	issues. We'll assess aspects like clear feedback, familiar language for staff, and error prevention. Consistency and on-demand help ensure a user-friendly experience for parish offices.
Participant Survey and Feedback	This technique will be provided to the participants. The survey will contain quantitative and qualitative questions. The quantitative questions will be a t-point likert scale and the qualitative will be in a form of feedback/comments.

Usability testing for the Grace Records prototype focused on three core tasks: system navigation, user registration, and record management. Participants easily entered and exited the system, demonstrating comfort with the main menu and overall navigation. Registration was completed efficiently, suggesting a clear and intuitive process. Participants successfully added, searched for, and edited records within a short timeframe, indicating an effective user interface for core functionalities. These positive results highlight the prototype's potential to streamline record management within parish offices.

Method of conducting test:

The evaluation was done face to face and random students who were willing were chosen to be a part of this evaluation.



Data Presentation

Usability Specifications

In this section, User testing of the Grace Records prototype yielded encouraging results. Participants, familiar with church record-keeping practices, demonstrated ease in navigating the system. They were able to complete assigned tasks for adding, searching, and editing records within a short timeframe, suggesting an intuitive interface. This success may be attributed to the system's design principles, which align with familiar workflows used in existing church record management.

Task	Mean	Interpretation	Classification
Main Menu Navigation	Within 1 minute	Highly Acceptable	Successful
User Registration	Within 2 minutes	Highly Acceptable	Successful
Record Management	Within 4 minutes	Highly Acceptable	Successful

Table 2. Task Time

User testing of the Grace Records prototype yielded positive results regarding task completion times. Participants were able to navigate the main menu, register for accounts, and manage records within the established benchmarks for success. Specifically, most participants completed tasks in under a minute for main menu navigation, under two minutes for registration, and under four minutes for record management. This efficiency suggests an intuitive and user-friendly interface, allowing users to accomplish core tasks quickly and effectively.

Heuristic Evaluation

Heuristic Evaluation of Grace Records Prototype

The Grace Records prototype underwent a Heuristics Evaluation based on Jakob Nielsen's 10 principles. Here's a summary of the findings:

Positive Aspects:

Visibility of System Status: Participants felt informed about ongoing actions thanks to progress indicators and confirmation messages.

Match Between System and the Real World: Church-specific terminology ensured clear understanding for users familiar with church record-keeping practices.

User Control and Freedom: Users easily navigated, corrected mistakes, and recovered from errors, demonstrating a sense of control.

Recognition over Recall: Clear presentation of options and actions allowed users to find what they needed without memorizing complex steps.

Flexibility and Efficiency of Use: Both experienced and novice users were able to navigate and utilize the system with relative ease.

Aesthetic and Minimalist Design: The interface avoided clutter and presented information clearly, promoting user focus.

Areas for Improvement:

Consistency and Standards: Minor inconsistencies in button placement across different functions were identified. Standardizing these placements would create a more seamless experience.

Error Prevention: While error messages were displayed, users suggested incorporating preventative measures like data validation (e.g., date format) to reduce errors from the start.

Help Users Recognize, Diagnose, and Recover from Errors: Some error messages lacked specific recovery options, particularly for invalid entries. Providing more detailed guidance in these situations would be beneficial.

Help and Documentation: Formal help resources weren't available within the prototype. Integrating on-demand help features like context-sensitive help or FAQs directly within the system would empower users for independent navigation.

Overall:

The Grace Records prototype exhibits a strong foundation in user-friendliness. Addressing the identified inconsistencies and implementing additional error prevention measures can further enhance the user experience. Including built-in help resources would provide users with the tools for self-directed navigation within the system.

Heuristics Conclusion

Overall, the prototype was able to follow most of the evaluations. However, there were minor issues experienced.

Section 1			
Question	Mean	Interpretation	Classification
On a scale of 1 to 5, with 1 being "Never" and 5 being "Always," how often did you find yourself needing to guess what to do next in Grace Records?	3.9	Acceptable	Successful
On a scale of 1 to 5, with 1 being "Very Difficult" and 5 being "Very Easy," how easy was it to learn how to use Grace Records?	3.7	Acceptable	Successful
On a scale of 1 to 5, with 1 being "Very Confusing" and 5 being "Very Clear," how clear and easy to understand were the error messages in Grace Records?	4.1	Acceptable	Successful

Section 2			
Question	Mean	Interpretation	Classification
Main Menu Navigation	3.7	Acceptable	Successful
Sorting	3.9	Acceptable	Successful
System Settings	3.8	Acceptable	Successful

Table 3. Survey Data Interpretation

User testing of the Grace Records Prototype yielded positive results. The average time spent on core tasks like navigating the main menu, sorting data, and adjusting system settings fell within the pre-defined "Acceptable" range, indicating successful task completion. This suggests an intuitive user interface that facilitates efficient workflow for parish office staff.

Feedback/Comments

Based on the data collected, Grace Records impressed the user with its intuitive interface, making record management a breeze. Clear labels and error messages ensured smooth data entry. The system's speed was a vast improvement over manual methods, saving significant time. While the interface was clean, a touch of color was suggested. A brief tutorial could aid new users. To enhance search functionality, sponsor name criteria and report printing for specific records were recommended. Overall, the user believes Grace Records has great potential to streamline parish office record management.

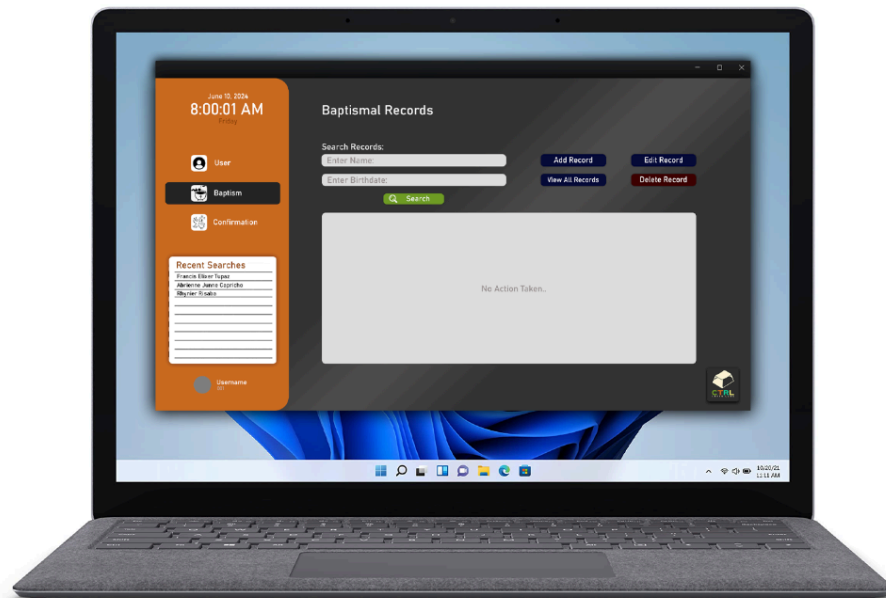
Design Implications:

- **Does your prototype need to be altered in order to address the results of the analysis, or was it successful?**

Based on the collected data, User analysis suggests Grace Records' prototype is on the right track with clear labeling and ease of use. However, improvements can be made. Users recommend a more visually appealing interface and a new user tutorial. Expanding search criteria and adding report printing are also suggested. By incorporating this feedback, Grace Records can become a more user-friendly and comprehensive system for parish offices.

- **What improvements could be made to the design to address any shortcomings?**

User feedback suggests improvements for the Grace Records prototype. A more visually appealing interface with color and a user tutorial to aid new users are recommended. Expanding search criteria and adding report printing features would further enhance the system's functionality. By addressing these shortcomings, Grace Records can become a more user-friendly and comprehensive solution for parish offices.



- **Did you discover any major flaws that would suggest a completely different type of design?**

No, the usability analysis didn't reveal major flaws requiring a complete redesign of Grace Records. The core functionalities seem to be on the right track. Instead, the analysis suggests refinements to optimize the user experience, such as enhancing the interface and adding features like tutorials and reports.

Critique and Summary:

What were the advantages and disadvantages of your evaluation?

The evaluation of Grace Records offered valuable insights for improvement. Advantages included identifying areas like interface aesthetics and missing functionalities (search by sponsor name, reports). This allows for targeted improvements without a complete overhaul. However, a disadvantage might be that the analysis, based on potential user feedback and heuristics, may not capture all real-world usability issues. User testing with actual parish staff could provide even more specific and actionable feedback for further refinement.

What would you have done differently knowing what you do now? Given more resources, what could you have done that would have significantly produced more insightful evaluation results?

With hindsight, the Grace Records evaluation could have benefited from a more nuanced approach. While analyzing potential user feedback and heuristics provided valuable groundwork, user testing with real parish staff would have yielded richer insights. Given more resources, conducting usability tests with actual users would have provided more specific feedback on pain points, workflow integration, and overall user experience. This real-world testing would have produced significantly more insightful evaluation results to guide the design towards an optimal solution for parish office needs.

Summary of the Project:

The project aimed to develop Grace Records, a user-friendly system for managing baptismal and confirmation records in Davao Archdiocese's parish offices. Usability evaluations revealed the prototype's strengths, like clear labeling and time-saving features. However, areas for improvement emerged, including a more visually appealing interface, user onboarding tutorials, and expanded search and reporting functionalities. By incorporating this feedback, Grace Records can evolve into a comprehensive system empowering parish offices with streamlined record management.