Project Title & Subtitle:

Elevating Student Success: Forging Pathways to Achievement with Technology
Re-enforcing Education Through Accelerated Learning and Efficient Teaching
for Bataraza Central School

This project revolves around the development of an educational technology application, aimed at enhancing the learning experience for students and streamlining teaching processes for educators. The primary objective is to create an application that facilitates faster and more effective learning while enabling teachers to teach efficiently.

Client/Company/Project type:

This application is heavily centered on a school in Palawan which is Bataraza Central School. This can also be applied to other elementary schools. The project's effectiveness is relative to the education level of the students, from Kindergarten to Grade 2.

Project date

This project will be estimated to be operational within 2 years after project execution.

Your role

My prime assignment in this project involved developing and implementing the button oriented user interface elements along with their underlying programming. The "FastTrack Learning" application which created all the Visual Layout for buttons, works closely with the Design and Development Team. The latter required creating buttons that fit cohesively with the rest of the User Interface and were highly intuitive for the consumer to use. Moreover, I had to program these buttons so that they provided appropriate response to user interactions thus enhancing the overall experience of the users. I partnered with fellow teammates at different stages in development to maintain a unified and productive design that assisted the app's purpose of promoting faster learning and effective teaching.

Project Summary/About this Project

An Innovative Educational Technology Application – Fast Tracking Your Education. This project was in response to some of the challenges that faces students and teachers in the contemporary classroom. The idea behind this technology-enhanced learning device aimed at equipping students with a tool that enhances personalized learning and provides instructors with effective teaching materials. Finally, "FastTrack Learning" strived to raise student performance by finding ways to excellence beyond traditional methods and leveraging modern technologies.

The Challenge

Problem Statement:

Having too many students inside a classroom can be a bit overwhelming for teachers, as well as for the students. In public schools, there are no more than 40 students inside the classroom. Having this much students to teach, teachers can often lose track of all of the progress of each student, managing every single student can be a handful for some. Due to crowded classrooms, students will often lose concentration on the topics that are being discussed by the teacher. User centered observation and in depth research have underpinned the problem statement that this project is based on. Usability testing, surveys, as well as interviews with students and educators revealed evidence that conventional educational methods usually lack personalizability and do not make for engaging learning.

Often students face difficulties in not having individualized learning pathways which make it hard for them to learn fast and effectively. On the other hand, teachers experience overcrowded classes and no sufficient means for tailoring instruction that leaves them with enormous amounts of work. Most notably, many teachers employ outmoded approaches that lead to disconnection of pupils, which adversely impacts on motivation, and ultimately the academic performance of learners. This means that there was a need for developing an education technology solution so as to cater for the emerging demands; a solution, which would exploit data-driven insights to enable student achievement enhancement while at the same time make teaching easier for the teachers.

User Interview:

Questions:

These questions will serve as a survey for the principal of the school. These questions contain information that can help us determine whether our application will be able to help the existing problems that their teachers and students face.

1.   Have there been any updates to your school curriculum in recent times aimed at improving the student's learning experience?

2.   What is the interaction of your school with parents and the wider society to enhance students' learning and general welfare?

3.   What strategies do you use to assess and monitor the progress or performance of students and what remedial measures have been established for struggling students?

4.   How does technology affect education at your school and how do you promote efficient inclusion of technology into the curriculum?

5.   How does your school create an embracing and supportive atmosphere for students with various abilities, ethnicities, and cultural origins?

6.   As a leader, how does your leadership view shape the educational journey of the student at the school?

7.   Do you believe that effective communication channels between teachers and students are crucial for enhancing the learning experience?

8.   Do you believe that improving search functionality aligns with the school's goals for providing a more efficient and user-friendly learning environment?

9.   Do you see value in enabling offline access to educational resources, especially in situations where internet connectivity is limited or unavailable?

10.   How important do you believe it is to streamline the search process within the app to minimize user frustration and optimize time spent on learning activities?
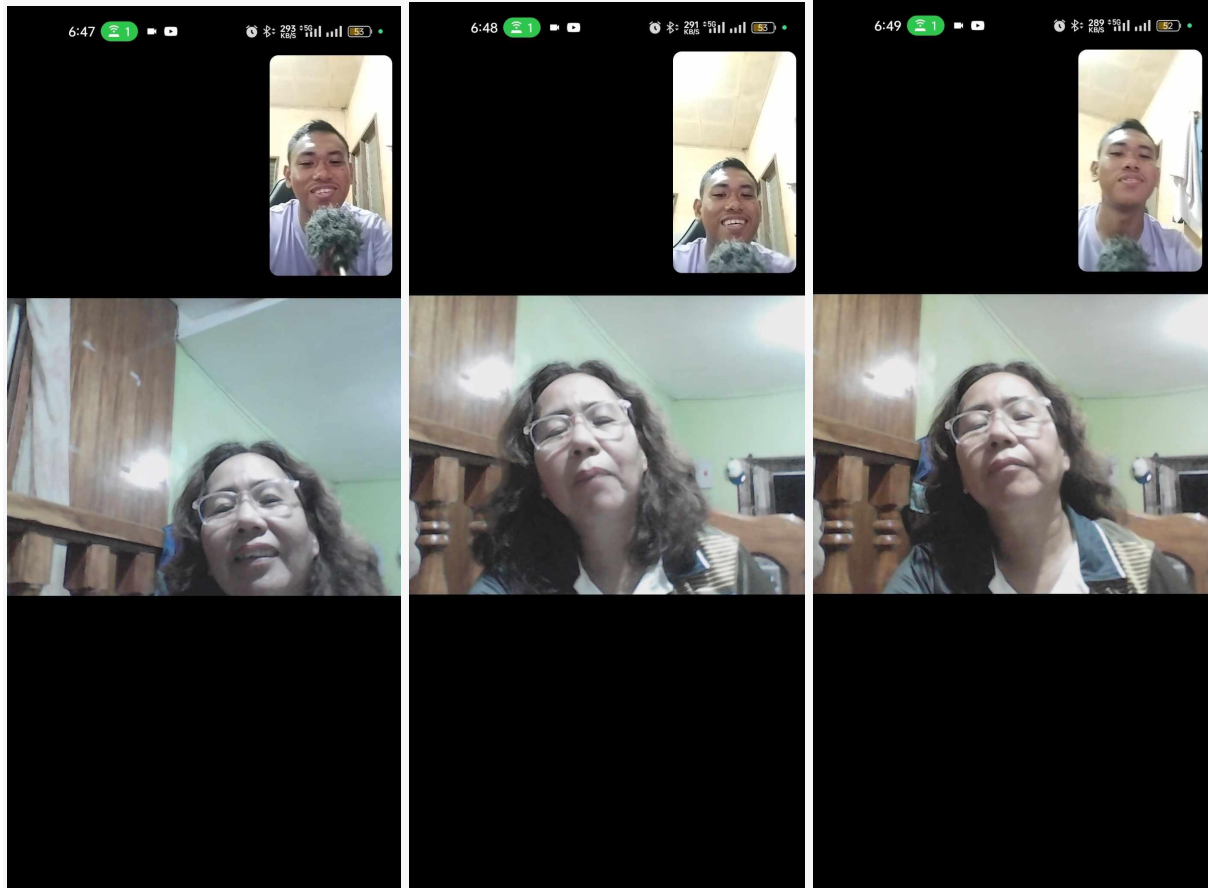
Pain-Points:

Limited Teacher-Student Interaction:

● Pain Point: Both students and teachers have expressed the need for improvements in communication channels within the app. The limited interaction options hinder effective teacher-student engagement, leading to missed learning opportunities.

Ineffective Search Functionality:

● Pain Point: Users have reported difficulties in finding specific study materials or resources due to the app's ineffective search functionality, leading to frustration and wasted time.

Limited Offline Access:

● Pain Point: Users have highlighted the inconvenience of not being able to access study materials offline. This limitation restricts their ability to study in situations with poor or no internet connectivity

Affinity Mapping

Group 1: Improved Communication Channels

Feature 1: Chat Messaging

Feature 2: Discussion Forums

Feature 3: Video Conferencing

Group 2: Search Functionality Enhancements

- Feature 1: Advanced Search Filters

- Feature 2: Improved Keyword Search

- Feature 3: Search Suggestions

Group 3: Offline Access to Study Materials

- Feature 1: Downloadable Content

- Feature 2: Offline Mode

- Feature 3: Synchronization

Personas

Persona: School Head - Lorna

- Demographics:

    Age: 52

    Gender: Female

    Education: PhD

    Occupation: School Principal

- Goals and Needs:

    Ensure the effective use of educational technology to enhance teaching and learning.

    Improve communication and collaboration among teachers and students.

    Enhance the overall learning experience for students.

- Behaviors:

    Actively seeks opportunities to integrate technology into the school's curriculum.

    Values open communication with teachers and values feedback from students.

    Encourages professional development for teachers to stay current with educational best practices.

    Prioritizes the school's reputation and academic success.

Persona : Student - Emily

- Demographics:

  Age: 5

  Gender: Female

  Grade: Grade 1 Student

  Location: Urban area

- Goals and Needs:

  Achieve top grades

  Learn at her own pace, focusing on science and math subjects.

  Easily communicate with teachers for clarifications.

- Behaviors:

  Uses the app daily for self-study and practice tests.

  Prefers interactive learning materials like quizzes and flashcards.

Persona : Teacher - Mr. Rodriguez

- Demographics:

  Age: 34

  Gender: Male

  Subject: Elementary Teacher

  Location: Suburban area

- Goals and Needs:

  Enhance the engagement and performance of his students.

  Provide personalized support to struggling students.

  Save time on administrative tasks and grading.

  Stay updated on the latest teaching methodologies.

- Behaviors:

  Integrates technology into his teaching, including the app.

  Uses the app to assign homework, quizzes, and track student progress.

  Values data-driven insights to adapt his teaching methods.

  Seeks professional development opportunities.

Customer Journey Mapping

Scenario: Student would like to ask the teacher for more information. Teacher left his desk for important matters

Emotions: Anxiety, discomfort, disorientedness. The student will ask other students and get distracted by him.

Design Consideration: Make a button in the UI for the student to press so that the teacher can get a notification via ringtone or message

Exer4

Design Solutions:

Enhanced Search Capabilities:

Users will be able to quickly locate particular study materials and resources, which will save time and reduce frustration. The effectiveness of the educational process will increase as a result.

Design solution: Add more sophisticated filters, auto-suggestions, and an understandable methodology to the app's search capability.

Access to Study Materials While Offline:

Create an offline mode that enables users to download and access study materials without an internet connection as the design solution.

Desired Result: Students will be able to access educational resources continuously, even in locations with poor or no internet connectivity.

Improvement of Communication Channels:

Implement a more powerful messaging and notification mechanism within the app to improve communication between teachers and students.

Desired Result: The desired outcome is improved teacher-student engagement, prompt responses to questions, and the creation of a more collaborative learning environment through improved communication channels.

These design ideas seek to improve the "FastTrack Learning" application's user experience by addressing particular pain points discovered during the customer journey. I don't have the capacity to present workshop images or diagrams, but a prioritization matrix can aid in deciding which ideas are the most important to adopt. To direct the application of these design ideas, you might develop a prioritization matrix based on factors like impact, practicality, and effort.

User Flow:
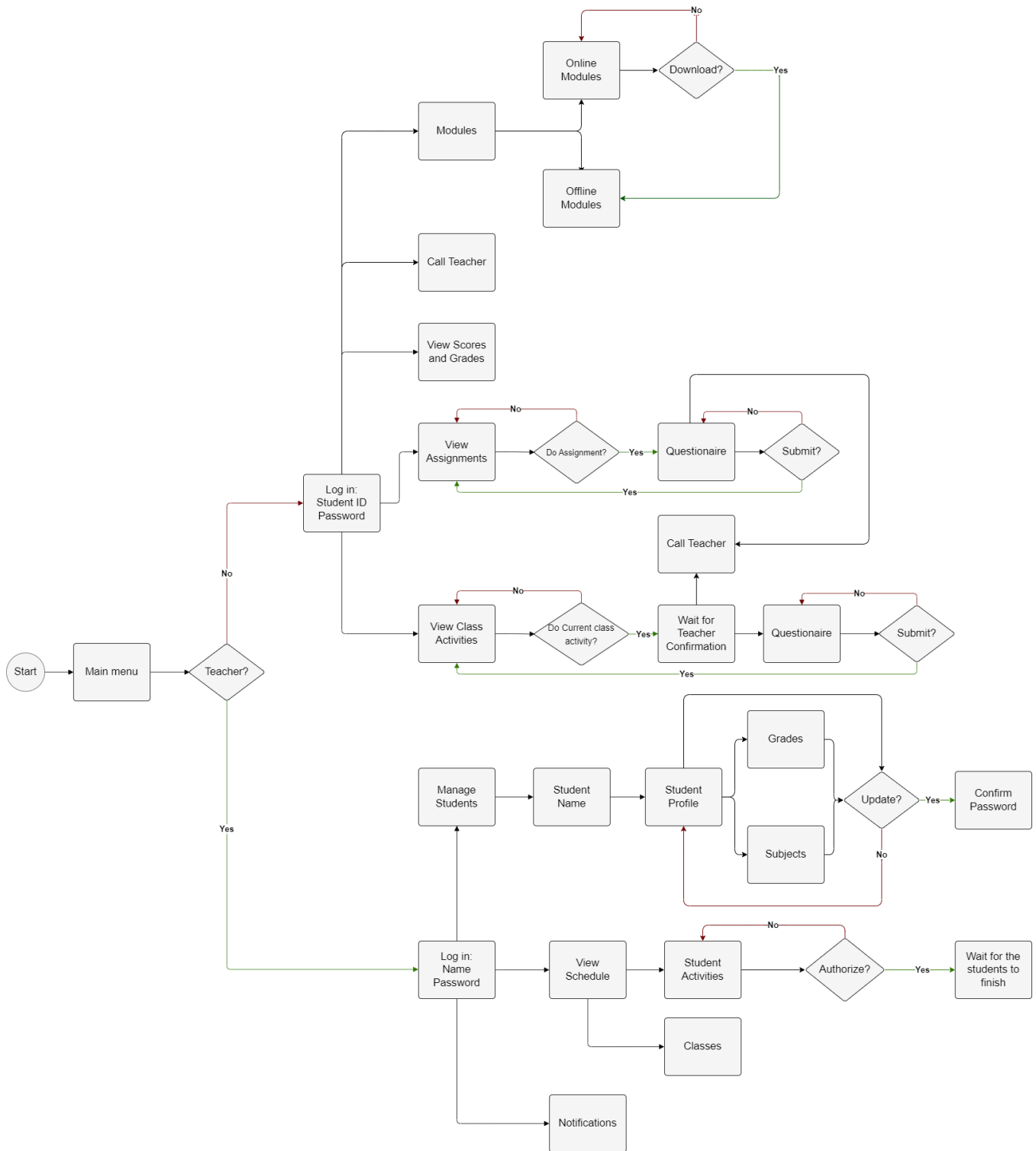
Storyboards

Ms. Santiago wants to review his student record because there was a misspelling of a student's name.

Step 1: She will go ahead and open up the FastTrack Learning App and go the the main menu

Step 2: The Log in menu will now pop up, Ms. Santiago will now pick the Teacher Login button as she is a teacher. She will now log in to her Name, and her teacher password.

Steep 3: She will now reach the dashboard of a Teacher's account. Here, she will see 3 choices; Manage Student, Notifications, and View Schedule. Of course, she will pick the Manage student button.

Step 4: After She had clicked the manage student button, she will now proceed to her student's list. She will pick the account of the student that needs editing of his name.

Step 5: There will be two options that she can click in the student's profile menu, Grades and Subjects, but she can already edit the student's profile directly in the menu, so she clicked neither.

Step 6: She now then clicked the Update button that popped up automatically when editing the record. The application will now ask her password for verification that she truly edited the student's profile.

Step 7: The application now can go back to the student's profile and review the changes.

Sketches

LOG IN
TEACHERS
STUDENT

Logo of the School for background

Teacher's menu

Student's name

Student's menu

Student name
Student's infos

image

Puzzle Activity varies in options

color identification

activity info

Press to start

Start
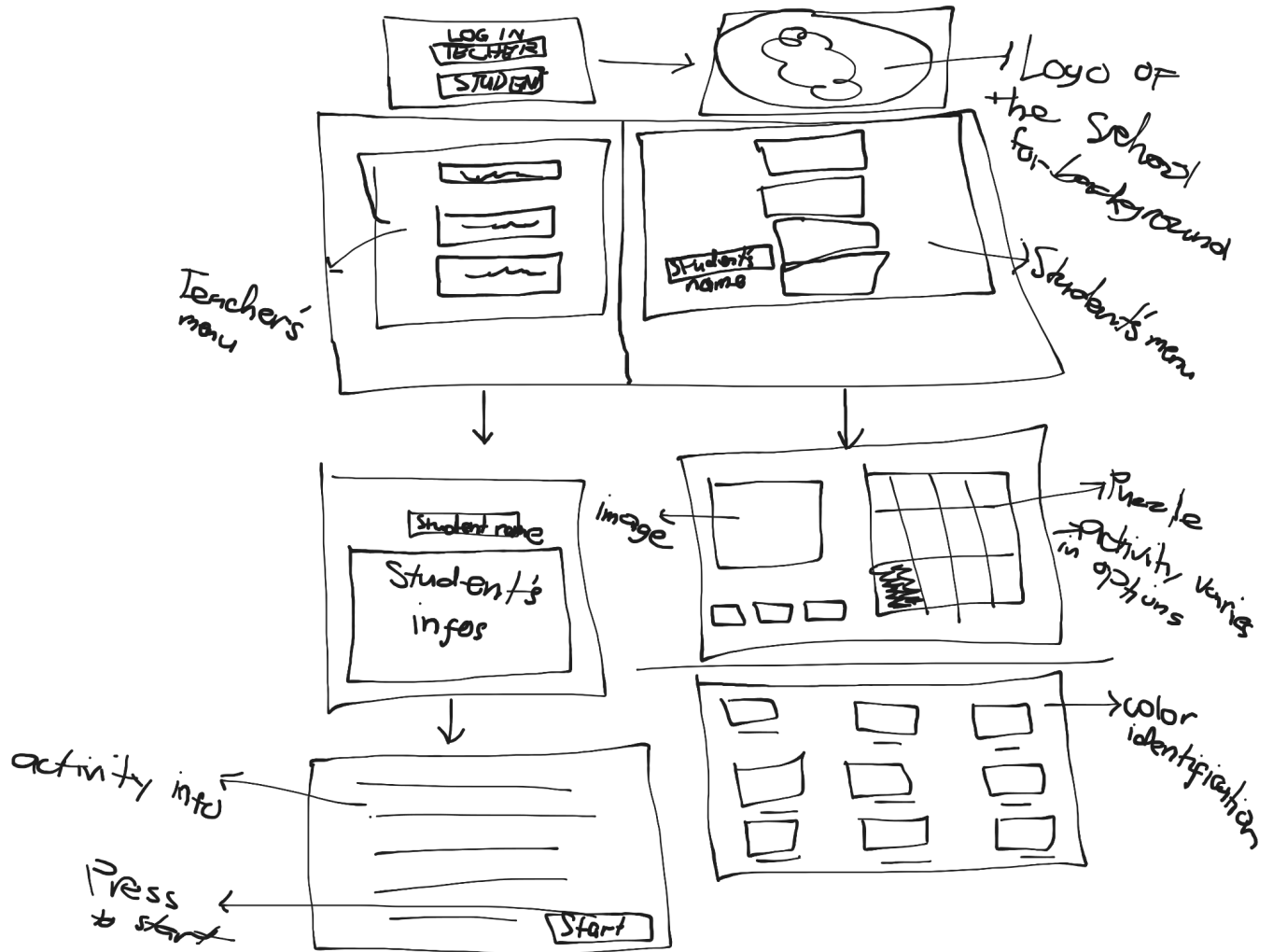
Wireframes:

Teacher'sWireframe for Managing student:

User Flow for Student Grades Update
John Carl Reyes | 10/20/2023
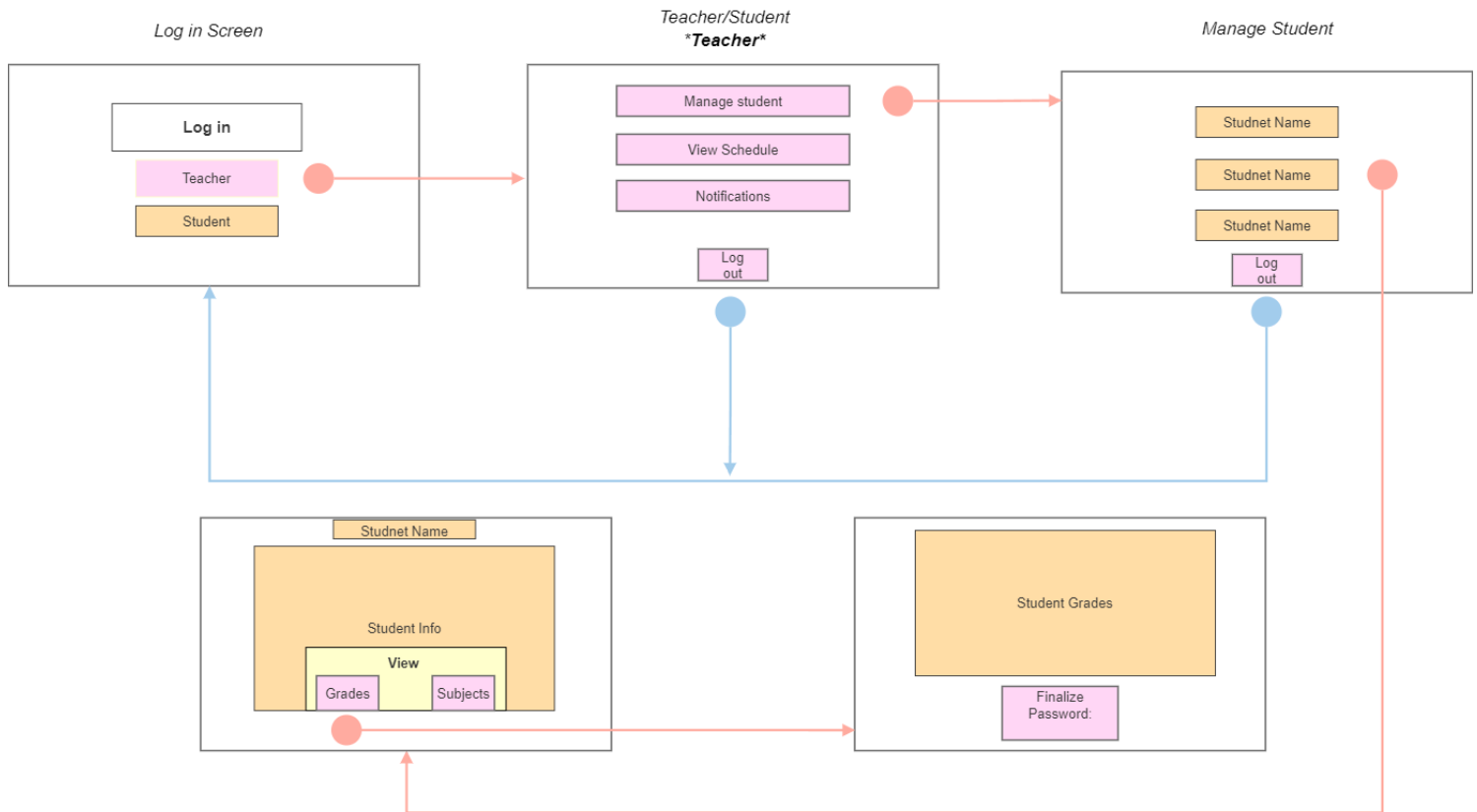
In the wireframe that is shown above, this is for the menu for the teacher as they log in to their account. In the menu, you will see the selections of menu for the editing of the records of the students, view their class schedule and the activities listed for their class. The teachers could also see their student's profile for editing and review, they can also view the grades of their students. After editing either the grade or the profile, they need to input their teacher password for verification

Student Wireframe for Activities:

User Flow for Student Grades Update
John Carl Reyes | 10/20/2023

Student Main Menu

Play/Activities
Assignments
Grades

Student name

Student Activities

Activity
Activity
Activity
Activity
Activity
Activity

Table for Days in a week

Activity Sample

Sample Activity

Sample Activity

Sample Activity

Assignment
Assignment
Assignment
Assignment
Assignment
Assignment

Assignment for the proceeding days

Activity Sample

Color Color Color Color Color

Color Color Color Color Color

Activity Sample

In this wireframe, we can see the UI for the students menu when using the application. The menu shown in the wireframe is composed of pages for the calendar of the month for the students, this also shows the activities that the students are tasked to do for the month and/or week. This could change dramatically as more improvements need to be made for the application.
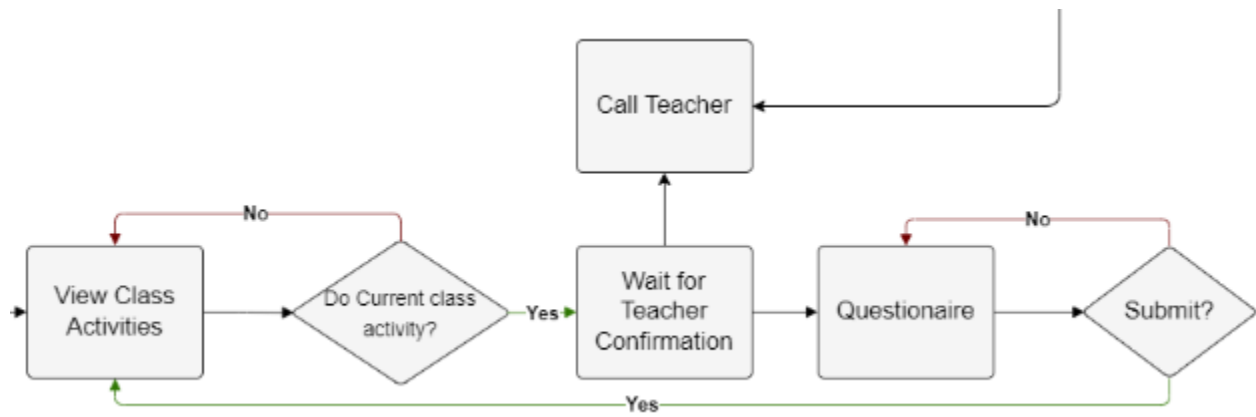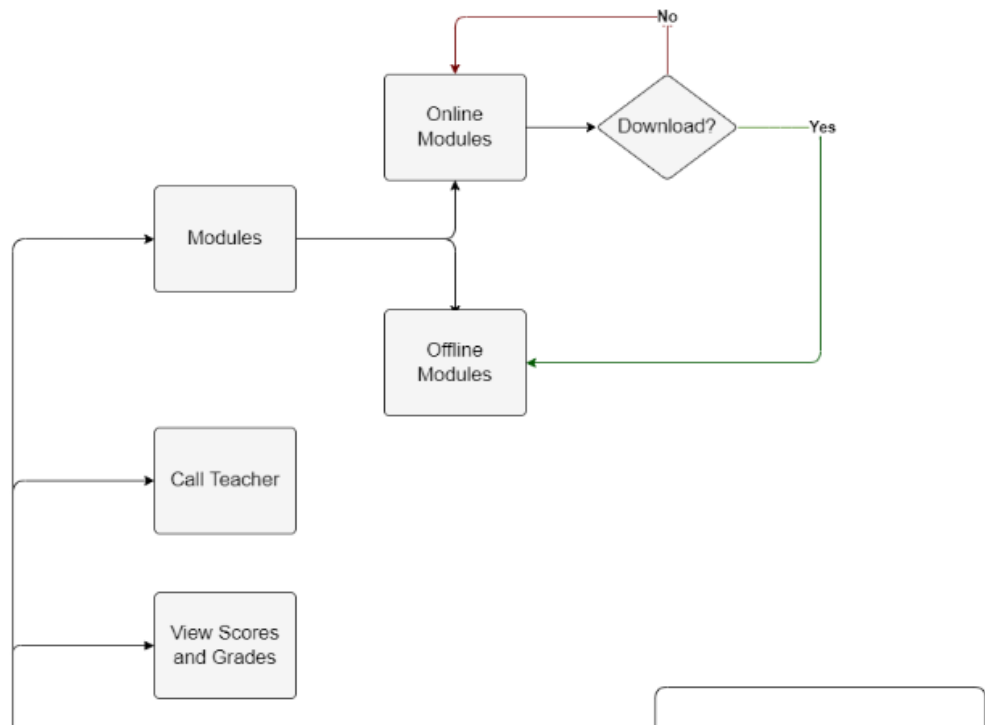
Visual UI Design

The color of the menus for the teacher that I am using is a combination of the colors of the school itself, in this case, I will be going for blue, white, black, a bit of yellow and red. The menu for the teacher will also have the logo as its background picture for more formal presentation for the teachers. Teachers will be more appreciative of simple design for their UI, if we are putting vibrant colors in the teachers UI, this will result to eye strains as they are going to be looking at the screens of the devices in use more longer than the student

In the student's menu, I will be going for more vibrant colors for the children's eye. This will improve the focus as well as keeping the eyes of the students entertained when looking at the UI. I will be going for the colors and different shades of green, blue, yellow, red, pink, brown and white, there will also be pictures and figures for the designs of the UI, students will appreciate the creative looks of the UI and will result in a more captivating menu.

Painponts stated on the previous pages regarding the lack of communication between the teachers and the students will now be fixed, students will now have the option to call for the teacher's attention via a button. Students will have the ability to press this button and call for a teacher when they need help on their activities, when they lack understanding on the instructions that is stated in the activity, this will also help the students call for the teacher when they need assistance in their activities, like questions, a bit of tutorial, or a bit of advice.

Offline modules should be available now. Students reported that they should have the ability to download their modules for offline use, this will give the students the ability to read their lessons in advance, this can also give the parents the ability to teach their students while they are at home.

Top flowchart

```
                                          No
                            ┌──────────────────────────┐
                            ▼                          │
                        ┌─────────┐              ┌───────────┐
                        │ Online  │─────────────▶│ Download? │──── Yes ──┐
            ┌──────────▶│ Modules │              └───────────┘           │
            │           └─────────┘                                      │
        ┌─────────┐         ▲                                            │
        │ Modules │─────────┤                                            │
        └─────────┘         ▼                                            │
            │           ┌─────────┐                                      │
            │           │ Offline │◀──────────── Yes ────────────────────┘
            ├──────────▶│ Modules │
            │           └─────────┘
            │
            │           ┌──────────────┐
            ├──────────▶│ Call Teacher │
            │           └──────────────┘
            │
            │           ┌──────────────┐
            └──────────▶│ View Scores  │
                        │ and Grades   │
                        └──────────────┘
```

Bottom flowchart

```
                                    ┌──────────────┐
                                    │ Call Teacher │◀─────────────────┐
                                    └──────────────┘                  │
                                          ▲                           │
        No                                │                    No     │
   ┌──────────┐                           │               ┌──────────┐
   ▼          │                           │               ▼          │
┌────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────┐
│ View   │  │ Do Current   │  │ Wait for     │  │              │  │          │
│ Class  │─▶│ class        │─Yes─▶│ Teacher  │─▶│ Questionaire │─▶│ Submit?  │
│Activities│ │ activity?   │  │ Confirmation │  │              │  │          │
└────────┘  └──────────────┘  └──────────────┘  └──────────────┘  └──────────┘
    ▲                                                                  │
    └─────────────────────── Yes ─────────────────────────────────────┘
```

PROTOTYPE

"FastTrack Learning" Tool. This application serves as a comprehensive solution designed to assist educators in effectively managing their students. By providing seamless access to teaching resources and leveraging the potential of technology, our prototype aims to empower teachers in embracing the modern educational landscape.
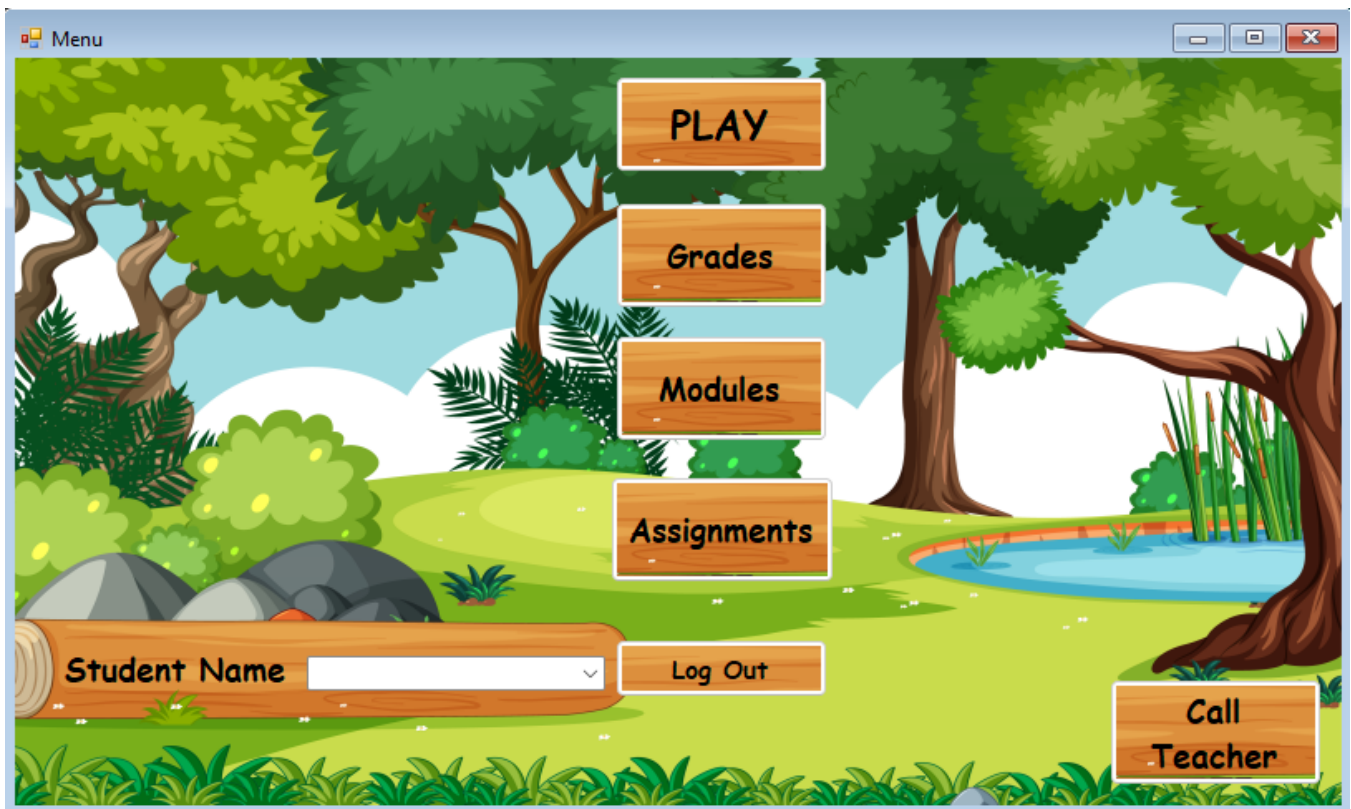

Main Menu

In this menu, you can see that we have played, Previous activities, grades, quit. You can also select the student name that you want to pick

- **Play**- when you pick play, you will be brought to the activities tabs. This is the list of the activities for the week.

- **Grades-**In the grades menu, here you will see the grades of the students, the teacher can record grades of each student on how easy or hard it is for the students to finish the activities. When a

teacher clicks the Grades menu, the application will require a teacher password, so the only people who can only edit and add grades are the teachers.**Student Name-**Here in this button, the teacher can select the name of the student that he or she is currently supervising, the application will store the data of the student individually.

- **Log Out -**When you click the quit button, the application will quit and exit the desktop.

- **Daily Activities-**In the activities, you can find the current daily activities, it is represented by the checkboxes, below the checkboxes, you can see the play buttons, if you press the button, you will be brought to the activity or the game. As mentioned before, you can see the activities for the future days or for the coming week, in this way, the teacher can inform the student to review for the coming activities.
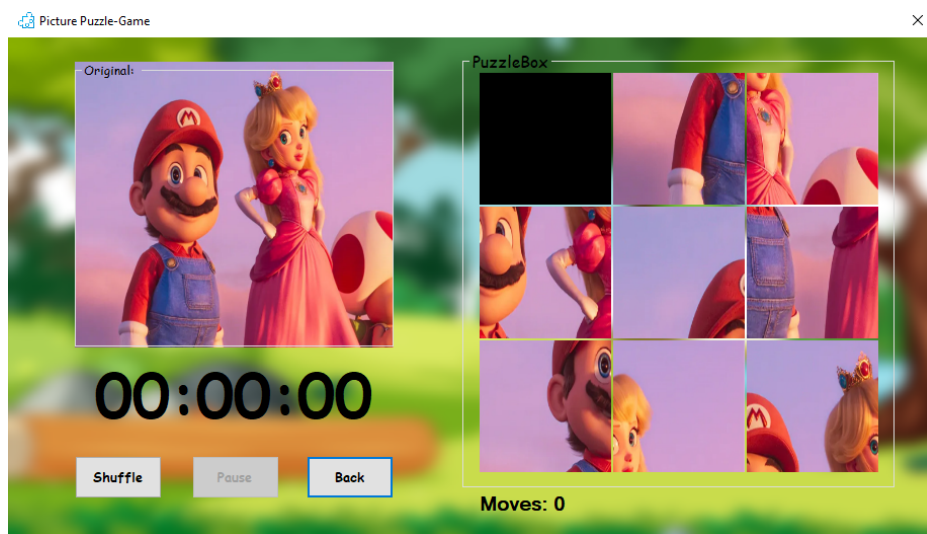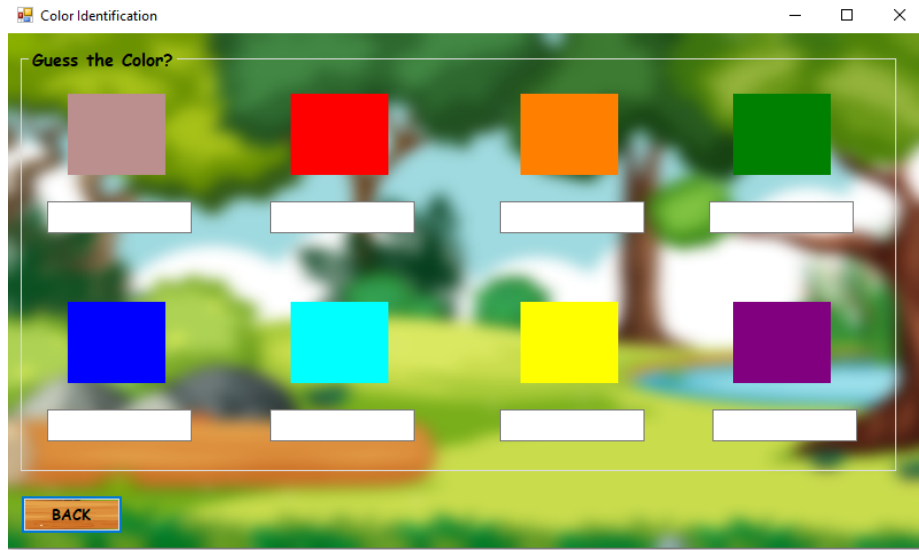
Game Examples

●   In these pictures, you can see examples of activities or games that a student can play, A puzzle, which is composed of shuffle button, shuffle button that shuffles the images that are inside the picture box, there is also a pause or resume button so that the student can pause or resume the activity if they want to take a break. there is also a timer included in the puzzle game, the student will be given 1 minute to complete the puzzle, if the student failed to finish the puzzle in time the puzzle will repeat and the images will be reshuffled.

●   Color Guessing game, in this game, the student is required to identify each color that is displayed in the boxes, they are required to input their answers in the box provided below the box. There is no time limit on this activity.

Part 2:

Comments/Suggestions:

Groupmate 1: Nick Francis

Review: I've had the chance to review the study thoroughly, and I'm quite impressed with the methodology and data collection. The pain points and user personas are well-defined, making the project context clear. The User Flow gives a great overview of the user experience.

Groupmate 2: Estrella

Review: I found the user flow and design solutions to be very well-structured and logical. The storyboard effectively illustrates the user experience. The pain points are well-addressed in the design solutions, and it's evident that they were thoroughly considered.

Concrete Solution: To enhance the study's completeness, it might be beneficial to include a section on potential challenges and risks in implementing the design solutions. Discussing possible obstacles and mitigation strategies would make the study more comprehensive.

Groupmate 3: Audrey

Review: The user personas provide a clear understanding of the target audience, and the communication channels have been well-improved in the design solutions. The suggested solutions align with the identified pain points effectively.

Concrete Solution: Incorporating a section on cost estimates and resource allocation for the proposed design solutions would add depth to the study. It would help in assessing the feasibility and practicality of implementing these solutions.

Groupmate 4: Keven

Review: The study is well-structured, and the customer journey map effectively visualizes the user's experience. The design solutions are innovative and appear to directly address the pain points. The personas give a relatable snapshot of the users.

Concrete Solution: I would suggest including a timeline for the implementation of the design solutions. It would help in understanding the project's practicality and potential impact over time.

      After being evaluated by other members of the class, and evaluating their work, I can say that my work can absolutely help the education of students and the convenience in the Bataraza Central School. "FastTrack Learning" will have the ability to capture the students mind into focusing on the call and into the lectures that are being taught by the teacher. Making the application more attractive to the students, and its 'mini game' nature, students will have more fun answering their activities. Connection of the teachers and the students is very important when it comes to teaching and learning, with the FastTrack Learning, this will be easier.

Conclusion:

Results / Conclusion

In this case study, we embarked on a journey to enhance the "FastTrack Learning" application to better serve students and teachers by addressing key pain points. Throughout this study, we identified critical issues, proposed design solutions, and visualized the user experience.

Project Success Metrics: While the project has not yet been implemented, we have established several success metrics to track its impact, including improved user satisfaction, increased app engagement, and reduced support ticket resolution times. These metrics will help assess the project's effectiveness once implemented.

Key Learnings:

User-Centric Design: User research is foundational. Design decisions must be informed by the needs and pain points of the target audience. Having those pain points in mind helped us to identify what are the things that needed to be improved, added, and removed from the application. This also helped us keep in mind the flexibility and constraints when it come to developing educational tools for schools

Effective Communication: Improving communication channels is essential, both within the application and in project collaboration. Clear and timely communication is crucial for success. With our testings, there are a lot of feedback that helped us evaluate the effectiveness of the communication strategies that are applied in the application.

Iterative Design: The project journey taught us the importance of an iterative design process. Continuously gathering user feedback and making improvements is key to creating a successful product. Feedback has been a big help for the development of this application, implementing designs for the application and testing it for a selected audience has helped us improve the application dramatically in terms of its effectiveness.

Challenging Step: The most challenging step was addressing the limitations of offline access. It required a deep technical understanding to implement an offline mode while maintaining data integrity and security. Implementing the Call teacher feature was also a big challenge in developing the

application, limitations in students spamming the call teacher button has been very hard. Setting limits on the notification on the teachers side for each student, filtering them to whom had pressed the button first, what is the urgency of the call. The application itself was yet to be tested in the real world, this means that there are limitations to the feedback that we evaluated when doing the improvements and changes.

Next Steps: The next steps involve the implementation of the proposed design solutions and rigorous testing with real users. Ongoing user feedback will guide further refinements, ensuring that the application meets the evolving needs of students and teachers. As stated in the previous note, there will be testing that will need to be done to properly evaluate the effectiveness of the application. This will also help us test the compatibility of the application in the devices that will be distributed by the school to the students and the teachers. Stability will be further improved so that we can minimize potential data loss on the devices.

Reflections: This case study highlights the ever-evolving nature of UX design. We've learned that design is not a one-time effort but a continuous journey of improvement. Embracing user feedback and staying adaptable are critical for project success. There had been ups and downs when developing the application, but with hard work and the cooperation of the audience and the selection of users, we managed to improve on the things that needed improvement. Integration of other features that has been pointed out by the pain points, and the selected users has been difficult, due to the lack of programming skills in that particular section of the application.

In closing, this project is not just a stepping stone in the "FastTrack Learning" application's evolution but also in our career development as designers. It reinforces the importance of empathy, communication, and the commitment to delivering user-centric solutions that improve the lives of our users. It has been hard in the beginning, but we achieved our goal, that is to provide help to those who need it.