ICS4U
02/03/15
Ms.Coderre
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Project Plan

Introduction

The program Math AF is a web based android application that is designed to give the teacher of MHF4U a daily summary of individual students progress throughout the course by giving daily quizzes. It keeps a record of the time it takes for the student to complete the question and how many they get right in a particular unit. The teacher use this data at anytime throughout the course to get a snapshot of which students are understanding the material and which ones need extra help. She can also, at the end of the units, use the total collected data to help give a final mark to the student.In addition to the daily quizzes, there is also a competitive mode that allows students to test their math skills against others in their class.

Objectives and Requirements

User interface, Menus

The main user interface displayed in the client will provide a clear visual display of the program with buttons and text to guide the user to what they would like to achieve. The colour scheme will be composed of a light blue and green to evoke a calming and productive environment. There will be few menus to browse through and will be very simple.

Web based server database

The website used to store and access information that is inputted by the users and provides a special login for teachers to keep tabs on the performance of their students. Students will also be able to access the site and will be able to check their statistics from a web browser. Information displayed by student accounts can be made public but are set to private by default.

Android access

As previously mentioned, the application will be available for free on the android app store and will support all android devices. Support for various devices of different sizes and dimensions will be added. The application will offer the main features and components of the program to the users and will allow access of the online database as well.

Technology
The program will be coded mostly with Java while HTML will be used for the design of the website itself. The website will be hosted by a domain provider that will be searched for later on. To test the functionality of the website, a computer will be used. The testing of the android application will be done with an android phone and an android emulator.

Privacy
All information stored in the database will be private to users unless they set their information to be public. However, the teacher of a specific class will be able to access their student's data since the entire class will sign up through a shared class code.

Extra Features
To add to the appeal of the program itself to attract the interest of students to learning, extra features will be added to give a sense of achievement or competitiveness to the students.

A list of these features include:

- Achievements
- Point scoring
- Ranking
- Music and Sound Effects
- Animations
- Drag and Drop
- Timed Challenges
- Saved Progress
- User accounts

Deliverable Specifics

- Program
    - User Interface

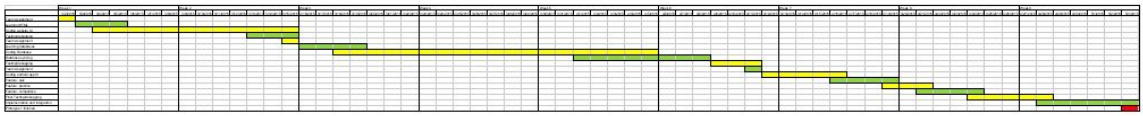
        - Menus
        - Buttons
        - Timers
        - Display
    - Gameplay
        - Modes
            - Class quiz
            - Arena
            - Practice
        - User input
    - Product
        - Server Database
        - Android Release
        - Web Page

- Documentation
    - Concept Document
    - Project Plan
    - Design Document

Major Milestones and priorities

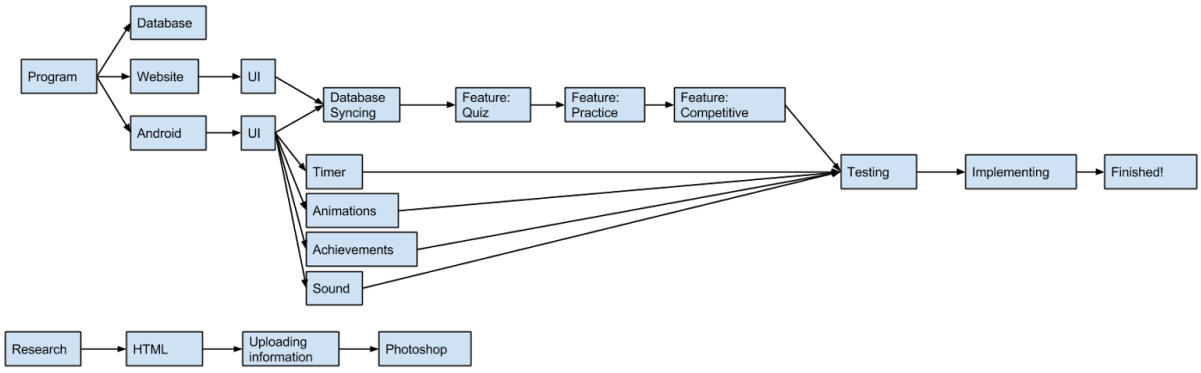
The most important aspect of the project is the quiz function, which is why that function has the highest priority for completion. However, before the quiz functionality can be completed, the website UI has to be completed (Designated date for completion, March 15). Then the database that will hold data will be completed (April 5). Finally, the UI of the android application will be completed (April 15). The final quiz function should be function on April 19th. After the quiz function is completed, the website, android app, and database will be expanded to include the practice mode and competitive mode. The practice mode should only take 1 to 2 weeks to complete, while the competitive mode would be much longer. If there is not enough time, the competitive mode will be excluded from the program.

Schedule



https://docs.google.com/spreadsheets/d/1VFKeTboEHvlkqmCVhsSofvqGQHzo6EiaWn99X17uFXs/edit?usp=sharing

Since the spiral model was chosen, the gantt chart only shows until the completion of the first prototype. Throughout the project, more events will be added to the gantt chart once more requirements and needs appear.



https://docs.google.com/drawings/d/19xCQyEajIM7odDiBTkj0HU9DhCfGfTx1Hb_S2BfTsow/edit?usp=sharing

Stakeholders

Primary Stakeholder: Ms. Damjanshitz and MHF4U students. They are the primary stakeholder because they are the ones who will be using the final application, and will be the ones that will be directly affected by the success of the application. Since Ms.D is our client, she is the most important primary stakeholder as she gets the most say in the development of the application.

Secondary stakeholders: Ms.Coderre and our client Ms.Damjanshitz pose as secondary stakeholders as they are the ones reviewing the applications and giving feedback on any changes to the application. Other students in the class are also secondary stakeholders as they give their opinions as students on the application and its functionality.

Tertiary stakeholders: None

Facilitating stakeholders: YiYang, Haoyang and Ms.Coderre are facilitating stakeholders as they contribute to the actual creation of the application.

Risk Analysis

Lack of time

Due to time being an important factor during the project it can be a major problem is due dates are not met because then the planning will fall behind in schedule and prevent important features from being implemented. Time also reduces the testing time for the program and can allow the possibility of increased bugs and problems within the program itself. If a lack of time is present, it will also affect the team psychologically since stress levels would be increased and can decrease productivity and quality of work.

Prevention and Solutions
-Doing weekly performance reviews to determine if the parts of the project are completed on time
-Keeping track of the schedule and keeping within finish dates
Solutions
-Adapt the project to accommodate for time constraints
-Simplify modules to reduce time required to complete

Programming Knowledge limitations

The level of programming knowledge in the team is at a basic high school student's and would cause issues if there is insufficient knowledge to program a feature. This could reduce the complexity and efficiency of the completed product while allowing more possibility for system instability.

Prevention and Solutions
-Learn complex programming tactics with use of internet resources
-Consult individuals with more programming experience and knowledge
-Look into the use of various programming languages

Server/Client Failure

If the domain used to access the server or the actual application client is faulty and fails, problems will arise and consume important time into fixing the issues. In the case of a domain failure, resources will have to be used to change a domain provider.

Prevention and Solutions
-Search for a stable and reliable domain provider for the website
-Bug test and debug the client during programming to prevent stacking problems

Absence of team member

Working without a team member can cause communication issues since the entire project is based around a two member composition and will decrease productivity by half. It also halts any progression in planning since input cannot be provided by the missing partner.

Prevention and Solutions
-Discuss possible absences and plan ahead of time to prevent communication issues and project delays
-Follow original project plan to determine the correct approach to the absence

Resources

Team Structure

Project Manager: Haoyang Zhu
Lead Programmer: YiYang Jiang

Haoyang Zhu
Software Research
Application Design
User Interface Design
Sound Effects and Music

YiYang Jiang
Website Design
Website Developer
Database design

Software

- Eclipse
- Java Development Kit
- Android Emulator

Hardware

- Windows Computer
- Android Phone

Team Policies

Communication

Members will communicate their progress throughout the entirety of the project during class and out of class. Communication can be done through methods such as Skype and email. Updates on work are required from all members since communication is imperative to staying on schedule and following the project plan.

Productivity

During the time given in class, members will stay on the working task and not be led astray by distractions. If the the latter occurs, distractions must be removed from the working area and members are required to enforce a strong work ethic so that the project does not fall behind on schedule.

Quality of work

Work completed in the group must have approval of it's quality by other members of the group to assure the success of the project. If a piece of work is viewed as sub-standard, the member working on it is required to invest more time on it to increase the quality level,

File Sharing

All work done and completed will be shared with the other member through google docs and eventually will be submitted by sharing the google document. All files will be contained in a general folder where documents can be organised. Actual code for the program can be stored on google docs or any other code sharing alternative.

Deadlines

Deadlines must be followed since the consequences include missing important feature and design in the program itself. Deadlines can be changed due to certain circumstances such as unprecedented events or unrealistic planning. However, deadlines will not be extended for more than a few days since the project has a very limited number of weeks to be completed.