**CS 551: Advanced Software Engineering  
Project Pre-proposal**

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1. Project Goal and Objectives
   1. Motivation

This project’s motivation is to create a mobile interface for parents to track their child’s progress in school. Stemming from an apparent disconnect of communication between parents, students, and instructors in many schools, this tool will act to provide the cohesion needed between the three. Parents will be provided with instant access to the performance of their child and the details of what work is expected for each class. In addition to these features, the student will have access to assignment-specific data and teaching resources to aid them in their studies. Finally, the teacher will be able to communicate with the parent and/or student via the web app, providing a full, unified web-based learning environment.

* 1. Significance

This app ultimately aims to improve the quality of learning at participating school districts. Countless frustrations have risen because no clear channel of correspondence exists between the home and the school. Since an internet terminal now resides in the pockets of most, creating such a channel properly could come with extreme benefit to the district. Apart from providing the central functionality of a virtual report card and calendar, this app would expose the inner mechanisms of the classroom to parents. Essentially, a new source of pressure would be put on the teacher to construct an organized learning environment with a valid lecture plan so that parents are satisfied with the nature of their child’s intellectual growth. This type of open resource could be very healthy to schools by improving the quality of both students and instructors.

* 1. Objectives

Our objective is to create a secure mobile app that can be used by both parents and students to access a server containing thorough scholastic information uploaded by teachers. The visual interface will be easy to navigate, providing clear information in a way that is beneficial to the user depending on whether they are parent or student. The application will be able to provide system notifications by interfacing with the mobile API to provide users with a greater awareness of urgent information.

* 1. System Features
     1. Mobile User Interface

The system will provide a user friendly interface that can be used to navigate through the stored database of information stored for each student. This will allow 3 different profile types:

* + - 1. Teacher(s): From the application the teachers will be capable of loading grades, communicating areas that the student is having troubles with, distributing assignments and their due dates, uploading notes, discussing any behavioral issues, keeping track of absents, and of any tardiness (mainly designed for non-elementary type class schedules).
      2. Guardian(s): From the application, the guardian(s) of the student will be able to easily track the progress for all of their children from one easy location. They will be given an easy way to communicate with the teacher(s). They will also be given a way to make sure their children have their homework done by the given due date to promote good homework habits.
      3. Student: This profile will allow for the children to express any concerns, download/upload their homework, check on the due dates of their homework, access links that will help them in their studies, and be able to keep track of their grades.
    1. Web Browser Interface

The system will provide a web browser interface allowing all pertaining parties to access all of the same information as the mobile interface application.

* + 1. Database

The system will keep its data on a database. This will provide the data to be distributed to the browser and/or mobile units while laying out an easy development process for future expansions such as a tablet interface etc…

* + 1. Communication

The system will allow an instant messaging method allowing the guardian(s) to communicate any concerns to the teacher and vice-versa. The app will notify the teacher/guardian if they have missed a message whether currently on the application or not. This will also allow all conversations to be stored and recorded. Keeping records of the conversations will allow an additional amount of protection between the parties. The system will also allow voice communication to keep all parties’ information (ex: phone number) private, while still allowing for a more traditional verbal conversation. These conversations could also be recorded.

* + 1. Encryption

All of the data stored on the database will be encrypted. This will keep all personal data of the students private.

1. Related Work
   1. Blackboard

This application offers similar features as our product, but it doesn’t allow for parents to be able to monitor their child’s progress.

* 1. Dash

This is a smart phone application used as a data management system. It was developed to create a better communication method for parents and teachers.

* 1. Homework

This is a smart phone application that allows students to save all of their exam and homework due dates to their Google calendar. It will then sort the due dates and help manage the student’s time so the dates can be met.

1. Backup Project

Create an application for Speech and Language Pathologists (SLPs) to use with children with speech or language development problems. SLPs must carry a large amount of pictures and objects for the children to identify and interact with. The application would have a database of images in various categories, which would drastically reduce the number of items an SLP carries around to different children. The app would also improve on regular images by allowing the children to independently interact with it. The app could record a student’s speech response to an image and automatically determine if the child correctly identified the image. This could be made into a game to give the children an incentive to participate.

Another mode for the app would have more complex scenes in the images. Instead of an image of a single object to identify, it would be a scene involving different objects that have similar sounds, such as “sh” or “r”. The child would then be instructed to speak a story involving all of the objects in the scene, and thus practice that particular sound they were having trouble with. This story could be recorded and transmitted to the SLP to evaluate at a later time.

1. Bibliography
   1. Blackboard

<http://blackboard.umkc.edu>

* 1. HomeworkNow

<http://www.homeworknow.com/>

* 1. Dash

<http://dash4teachers.com/>

* 1. Homework

<https://play.google.com/store/apps/details?id=klwinkel.huiswerk&hl=en>