**Team member’s name and role**
Jean-Paul Togbe - Storywriter, Storyboard Drawer, Task analyst
Richard Fricke - Mr. Smith, Storywriter, Storyboard Drawer
Karan Singh - Cameraman, Video Editor, Storyboard Drawer
Tejen Shrestha - Andy, Video Editor, Interface creator

**Problem and Solution overview**
Technology continues to shape the way we interact with each other within a society. It has had a great effect in the way we live, and the effect on education is no different. Since the introduction of various Web based systems, transparency between schools and parents has improved and has raised the level of accountability schools and parents hold for their children’s education. These systems serve the ultimate function of involving parents in their children’s education. “Eighty-six percent of the general public believes that support from parents is the best way to improve schools” [3]. With better parental involvement, students have been shown to have higher grades, better test scores, and higher graduation rates [3]. With our application, we plan to improve parental involvement in education by allowing the transparency to go mobile. Smartphones have been increasing in popularity for some time now and we plan to take advantage of the growing number of parents who own smartphones. Parents that may struggle to find time to keep track of their children’s education, be it due to work or other reasons, will have a helpful tool that would put them, and their children, at an advantage.

**Tasks Refined**
To produce the three tasks to be performed in our application, it was necessary to understand our users. The Proactive Parent (P²) is smartphone application that is targeted towards elementary and middle school students’ parents. After conducting some research we found that many parents already use systems in place at their children’s schools, but the use of these systems is limited to immobile devices. The problem with this current situation was clearly conveyed by Ms. Washburn, the principal of Hyattsville Elementary school, when she said that “a lot of parents [she] deals with do not have personal computers,” and therefore, they are at a disadvantage [1]. However, Ms. Washburn did note that the number of smartphones she sees among parents at her school is also great [1]. Our intent with this application is to narrow the gap between parents that have access to these systems and the ones that do, and make the system more mobile for parents that are constantly on the move.

Parents that use websites such as Edline, one of the major players in this market, have the capability to access grades, contact the school, check assignments, and even check attendance. Our system will include these tasks with added perks in a mobile application. The first task that we are going to focus on is the parents’ ability to check their children’s grades. One parent, who we had the chance to talk to while we were conducting a survey in Rockville, Maryland, claimed that the grades section of Edline was too cluttered with information [2]. He would much rather have a screen that showed the general grades for his child’s classes rather than a huge list of assignments [2]. The problem with implementations such as the one this parent references is that they take a much higher level of patience and understanding to complete. The amount of information given at one time can be overwhelming, especially for parents that may not be as educated, or computer savvy as others. In our application, we will
follow this parent’s advice and simplify the information that is given. The task of finding their student’s grades will bring the parents’ to a screen that simply contains grades for each section or class the child is taking. Parent’s will then have the option to touch one of the subjects in order to get a more detailed look at why their student is receiving such grades. This will give parents the capability to get all of the information they need on their children’s grades, while not being overwhelmed when doing so.

It is also important for parents to have a knowledge of what their child is working on in their classes. Parents should be able to ensure that their children are putting the necessary effort into their schoolwork. In order to do so, the parent needs to know exactly when that schoolwork exists. This is why our application will include a task to check up on a student’s current assignments schedule. With this schedule parents will be able to log in to the app and see a list of assignments for a particular subject, and their due dates. The application will even include visual aids to help parents assess the importance of these assignments. In particular, each assignments’ due date will be given a color based on the day in which it is due. The color red will be shown for assignments past due, orange for assignments that are due within a day or two, and green for assignments in which the student still has a respectable amount of time to complete. Parents will also be able to touch each assignment in order to see the actual details of what needs to be done. This function will prove to be useful for parents that may want to see exactly what their child is working on, while also being able to do research themselves if they would like to help them with their schoolwork. This brings us to our third task.

When speaking with Ms. Washburn, we asked her how often parents contact her with concern as to how they can help their children with school. She replied by saying that about fifty percent of her calls from parents involve discussing how they can help their children with their different subjects [1]. Far separated from elementary and middle school, many parents do not remember much of the material covered in those years. This is why our third task focuses on giving these parents the power to not only remember these subjects, but to teach them. This task consists of both subject guides and practice problems that parents can access from three different areas of the application. There will be an option on the home screen to go to the guide section directly, while there will also be touchable tags on homework assignments in both the grades section and assignments sections of the system. When using this function, parents will have the ability to bring up anything from websites with guides on the subjects, to youtube videos explaining them. When a parent enters a subject or clicks on a subject tag (located with assignments in the grades and assignments sections), they are given a list of these different materials in which they can choose from. Parents will no longer need to fear helping their children with their schoolwork because of a lack of understanding.

**Interfaces**

Our only change to the interface sketches was the addition of a sketch for the assignments task. This was because of our choice to move away from a focus on checking attendance towards a focus on parents’ ability to see what their children are currently working on in school. The interface clearly uses pictures of children at the top left of each screen to add aesthetic appeal to the application. It also uses pictures for buttons on the home screen that allow the user to better see the actual uses of the system.
Figure 1. Interface sketch for the assignments task
Figure 2. Interface sketch for the grades task
The first page after a parent logs in, in this area a parent has 3 children in the system.

Figure 3. Interface sketch for checking grades
Figure 4. Interface sketch for taking attendance
Figure 5. Interface sketch for the subject guide task

Description of selected interface
In attempting to decide on a final interface for our low-fidelity prototypes, we actually came up with a combination of the different task sketches. We decided to use a platform similar to that of what is seen in figure 1, with children’s pictures featured at the top left of the screen. This decision was purely to add aesthetic appeal to the interface, giving the user a sense of connectivity to the application. Also seen in figure 1, we chose to use pictures as buttons on the home screen of the application. This serves the purpose of better portraying the actual tasks that these buttons perform. When a user logs in, they can clearly see a picture of a gradebook depicting the child’s academic performance sheets and a calendar to show an assignment schedule. We also decided to use a structure much like figure 3 to convey information such as grades and assignments. This setup makes for a much cleaner looking interface and gives a more straightforward look at the information being presented. Our overall decisions on the look of our interface were based on how the different elements of the separate sketches could make the interface look more usable and appealing.
Andy
Grade 7

<table>
<thead>
<tr>
<th>Subject</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>Algebra</td>
<td>D</td>
</tr>
<tr>
<td>Physics</td>
<td>B</td>
</tr>
<tr>
<td>English</td>
<td>A</td>
</tr>
<tr>
<td>History</td>
<td>B</td>
</tr>
<tr>
<td>Social Studies</td>
<td>A</td>
</tr>
<tr>
<td>Spanish</td>
<td>C</td>
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### Algebra homeworks

<table>
<thead>
<tr>
<th>Assignment/Test</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>Homework 4</td>
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</tr>
<tr>
<td>Homework 3</td>
<td>7/10</td>
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<tr>
<td>Homework 2</td>
<td>10/10</td>
</tr>
<tr>
<td>Homework 1</td>
<td>9/10</td>
</tr>
<tr>
<td>Quiz 1</td>
<td>14/20</td>
</tr>
<tr>
<td>Test 1</td>
<td>68</td>
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</table>

### Homework

<table>
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<tr>
<th>Homework</th>
<th>Due date</th>
<th>Submitted?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 4, problems 1-20</td>
<td>April 4th</td>
<td>Yes</td>
</tr>
<tr>
<td>Worksheet 3</td>
<td>April 9th</td>
<td>No</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>April 20th</td>
<td>No</td>
</tr>
</tbody>
</table>
Worksheet 3
Due: April 9th

Simplify:
1. $2x + 3 - x = $
2. $2y + 3y - 2 + 5 = $
3. $3x + 2y - 5 + 3y - 2x = $
4. $3xy + 2x + 5y - x = $
5. $3(x+1) - 2x = $
**Storyboards and Scenarios**

**Scenario 1**
Mr. Smith is a single father who has two sons named Andy and Joey. Busy with work, he finds that it is hard to find time to pay attention to his sons’ education. One day while driving his sons to school on his way to work, Mr. Smith asks his son Andy how school is going. Andy pauses for a second then responds with “ok.”

Finding his son’s answer to be a little suspicious, Mr. Smith pulls out his smartphone and opens the P² app. Mr. Smith logs into the app and finds his way to the home screen. He wants to see for himself how his son is performing in his classes so he touches the gradebook option. Upon opening, Mr. Smith is given a list of the different subjects that his son is currently learning with a grade given for each of them. He sees that his son is doing well in all subjects except for math, clearly portrayed by the grade “D” highlighted in red. Wanting to know more about why his son is doing so poorly in math, Mr. Smith touches the pane associated with the subject. He now comes to a screen that has a grade for each of his son’s completed assignments. It is easy to determine why his son’s grade in math is so low, as there is an assignment in which the grade reads “0”, again highlighted in red. He now knows that he needs to confront his son and ask why this assignment was given a zero.
1. Single father
   Mr. Smith
   Sons: Andy, Joey

2. Mr. Smith in his office working late which is normal for him.

3. One day driving to school...
   "Huh?"

4. After dropping John off at school, Mr. Smith pulls out his smartphone.

5. Logs into P3

6. Selects Andy
(7) Mr Smith touches the grades option.

(8) He sees Math highlighted in red; Andy has a D grade in this class. He touches Math.

(9) Mr Smith sees the assignment Andy got a zero in.
Scenario 2
After finding out that his son is not doing well in math, Mr. Smith now knows that he needs to take
a more proactive approach in Andy’s education. He now knows that his son most likely skipped out on an assignment because of the zero grade that it was given. He wants to assure that this does not happen again. Mr. Smith now finds that it is important to know what his son is currently
working on in his math class.
In order to make sure that his son is not going to miss any more assignments, Mr. Smith navigates to the homescreen of the app. He then touches the assignments section on the screen. He is then given a list of the subjects his son is learning. Andy is struggling in math so Mr. Smith touches the math pane. A screen comes up with a list of assignments with their due dates written next to them. Instantly, Mr. Smith notices that the assignments that have already passed their due date, have their dates highlighted in red. Upon further inspection, he finds a date highlighted in orange. The assignment is due the next day. Vowing to be more involved in his son’s school work, Mr. Smith wants to see exactly what the assignment requires. He touches the assignment and finds himself with the assignment specifications on his screen. Mr. Smith now has the knowledge of the specifics of what his son needs to get done for his math class.
Scenario 3
The work day is now over. Mr. Smith wants to confront his son directly about why he missed an assignment in his math class so he picks him up from school. When Andy gets in the car, Mr.
Smith asks him about the assignment. Andy responds with, “It was too hard.” Mr. Smith then explains to his son that he needs to ask for help if he feels that he does not understand the material. Thinking back to the assignment that is due the next day, Mr. Smith now knows that he needs to help his son work through it, not only to make sure it gets done, but to ensure that his son understands it.

When getting home, Mr. Smith tells his son to get out his books so that they can start working on the assignment together. However, after looking at some of the questions in the assignment, he realizes that he does not fully remember how to answer them. Mr. Smith then remembers that the P2 application has a function that allows him to get help with different subjects. He then finds his iPad (for better readability) and opens the application. At the home screen after logging in, he sees an option to get help and touches it. A list of subjects now appears on his screen. He touches the math pane and once again a list of different math topics appear. In this case, his son is working on pre-algebra. Mr. Smith touches the pre-algebra pane and is brought to a screen with another option to either find subject guides or practice problems. He touches subject guides. A list of different provided guides and websites appear on the screen. He touches the first pane at the top of the screen, opening a full guide for pre-algebra topics. Now Mr. Smith is ready to understand the material in order to properly assist his son in his homework.

He places the iPad on the table and finds necessary information whenever he needs it while also guiding his son through each question. The P2 application has now helped Mr. Smith improve his son’s knowledge of pre-algebra.
Mr. Smith and John are driving back home from school.

The moment got awkward when they started talking about the assignment Mr. Smith just handed.

John: "It was hard. I didn't get it."

Mr. Smith: "It was hard to understand."

John: "Yeah, it was quite difficult."

Mr. Smith: "Well, if you have problems with homework, if you don't understand, you should ask for help. Do not wait until tomorrow.

As they are pulling into the driveway, Mr. Smith reminds that this was an extension for the next day.

John: "I know."

Mr. Smith: "I just walked into the house and started checking out the assignment..."
After log in

Today's date: Assignment due the next day.

For better recording, Mr. Smith will pull up his iPad.

But he doesn't remember/doesn't know how to pull up some of the questions. But he remembers the help function of his iPad, which has a list of subjects.

He selects a topic for help (Math).

A list of guides and websites opens on the screen. Now he is ready to help his son with his homework.
**Video Report**

In our video, we wanted to put the use of our application into the context in which we imagine it being used. For a parent such as Mr. Smith, it may be difficult to use the systems that are currently in place consistently as it could be hard to find the time to sit down at a computer. The video shows the usefulness of the application as it not only provides some unique features that are not included in other systems, but it has the mobility to allow Mr. Smith to view his son’s information from his car of all places.

We created the low-fidelity prototypes for the video using Adobe Photoshop with a phone template. They were placed onto the phone used in the video as a slideshow so that we could scroll through them with ease. When using the interface in the video, we zoomed in on the phone and had the actor pretend to actually touch the screen as if he were interacting with the interface. After the pressing motion was completed we would stop recording and slide over to the next screen of the interface to tape the next interaction.

The storyline used to put our system into context was meant to show just one type of situation that could call for the use of our application. However, we did not want to just simply act out the scene and show our interface with a lack of entertainment value. We had many takes on different scenes to ensure that our story was entertaining and could keep our audience interested in the story and ultimately, our interface. Facial expressions, camera focus, and humor all came into play when acting out the different scenes in this story.

After we were done recording every scene of our video, we then began editing. In this stage of our video creation, we took our collection of scenes and put them all together into a single video. Each scene and interaction with the interface was melded into one cohesive segment, with narration and guidelines to show important aspects of the story and interface.
**Citations**

