KIT305

ASSIGNMENT1

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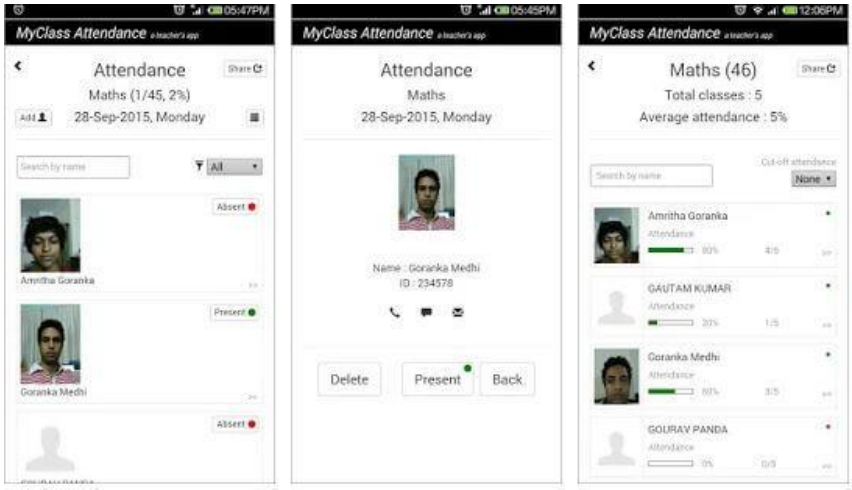
Contents

Introduction

A tutorial is an utmost important element in university life. It helps us to make use of the knowledge we learned in the lecture and put them into practice. University encourages and monitors the attendance of the tutorial so the students will be able to consolidate their knowledge. In the ICT courses, tutorials include hands-on practical on the programming application, discussion among the students and small group consultation with the tutor. Tutorial attendance and marking are not united among the tutors, some of them are just using handwriting on a paper and some of them would have an excel recording all the information. Sometimes the tutors may even lose for forgot their attendance sheet or marking sheet that causes many troubles for the schools and students.

To have a better working environment for the tutors and allow the school to record the marks that students attained in a tutorial, a united method of recording marks and tutorial attendance is necessary to reduce the possible mistake and potential problems happen in the tutorial.

Edsy.in has listed the 20 best attendance application for the teachers. (20 Best Attendance Management App for Teachers | Edsys, 2021)Some of them like the MyClass attendance are inspiring as it allows the user to record the attendance in a very simple way. It also allows the user to use it without internet connectivity so that it can avoid some potential incident that occurs in the tutorial.



(MyClass attendance screenshot, 2021)

The attendance register is even simpler than the MyClass that only type and name are registered and recorded. Both two application are very simple that utilize the usability goal of efficient and learnable on first use. That implies that these two goals are the most important element for this type of applications.

(Attendance register screenshot, 2021)

In the following of this report, we are going to introduce a brand-new application for the user to take attendance and marking of tutorial for the UTAS tutors. As discussed above, the new application will try to follow the two usability goals to improve the usability of the application.

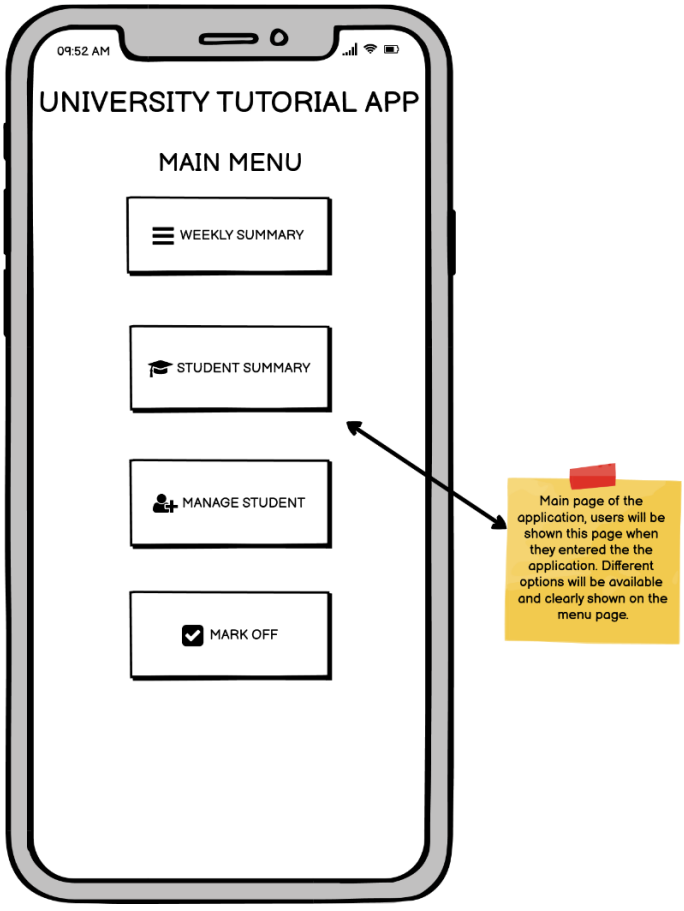
Usability goal and Design principle

The tutorial attendance application is designed with the Balsamiq prototype application which is a low-fi type application. The main purpose of using to low-fi prototype as it allows the designer to change the prototype easily according to the usability test result. It is easy to communicate and illustrate the logical flow of our application, it also lowers the cost and more collaborative as the prototyping does not require a special skill to use it which fits the need for the university as the target users of this application will be the tutors from different courses. (Prototyping 101: The Difference between Low-Fidelity and High-Fidelity Prototypes and When to Use Each, 2021)

Usability goal has six key aspects to a usable system, they are: learnable on first use, memorable on repeat uses, efficient, failure-resistant, forgiving and satisfying.

As discussed in the introduction, the focus of the existing attendance application is efficient and learnable on first use. The new application will try to follow the existing usability goals.

For an efficient application, the tutorial application should be simple and fast to use. The prototype is trying to utilize that on every page of it. The menu page of the application has only four options on it which allow the users to understand the main functions of the application.

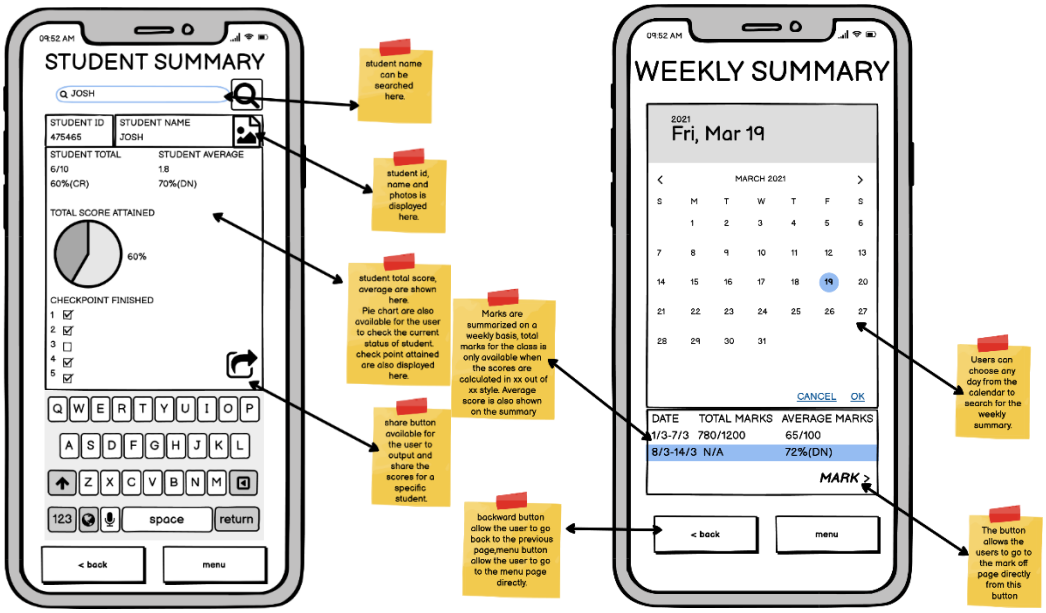


In the mark-off page of the application, we have three situations available for the users as the different week of the tutorial may have different marking scheme, which is scored out of 100, grade level of HD/DN and A/B/C/D. to keep the user efficient to use without any confusion, only the corresponding

marking scheme used in that tutorial is enabled, the other two marking scheme will be disabled for the user so they don't have to check on which marking scheme it is on that tutorial so to make it efficient.

The prototype also illustrates the use of failure-resistant that makes the application more usable.

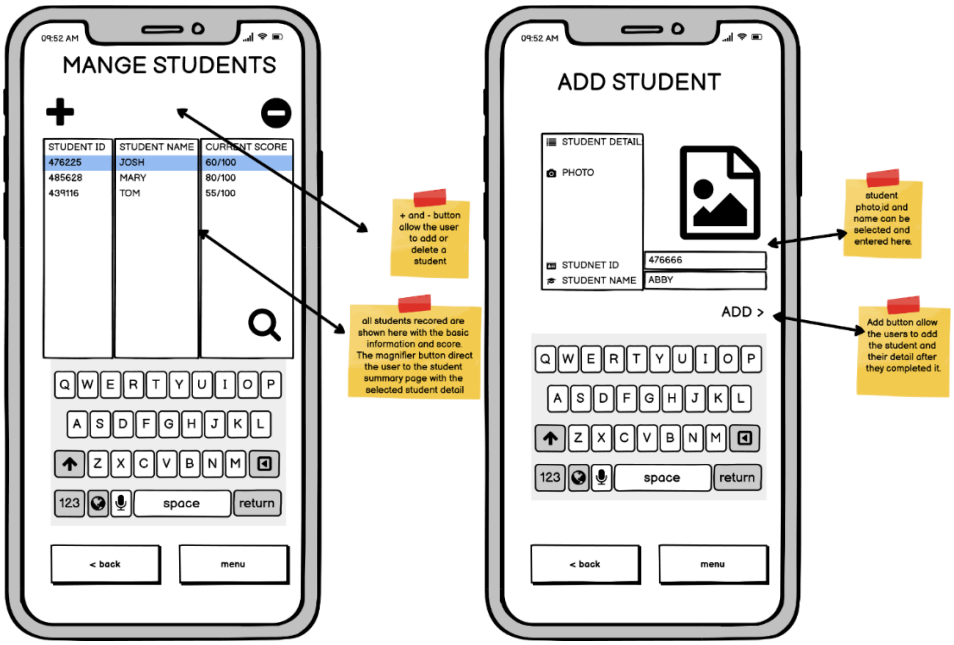
In the weekly summary and student summary page of the tutorial application, the users are provided with a few options only to keep the application simple and easy to use. The weekly summary allows the users only to choose the month and a mark button is available for the users to mark the selected week. The student summary page allows the users to type in the name of the student and search for the summary of the desired student. Detail information of that student is shown on the page and a share button is available for the user.



From the above two summary page, there are only a few options available for the users so the users are difficult to use the application improperly which fulfil the need of failure-resistant in the usability goal.

Learnable on first use and memorable on repeat uses are also used in the prototype. Manage students page provide three option which is added, delete, and search for the users to edit and search for the detail of the student, icon button is used in this page so to make it learnable on first use. When the add

button was pressed, the add student page will show up. After the users entered the student's information, only the add button is available for the user so it can be memorable on repeat users as adding the students into the tutorial class can be a time consuming and clumsy job.



The visibility of the prototype is high that cater to the need for Don Norman's design principle as only a few options are available on each of the pages in the application. The controls available are big and mostly represented with icons so the user can be easy to understand and improve the affordance of the application. E.g. + and – buttons on the manage student page above and the magnifier icon on the mange student page and student summary page.

The prototype also made use of the consistency approach; the design of the interface is designed with the same style throughout the whole prototype. A backward button and menu page button is available on all the pages in the prototype except the main menu page demonstrate the use of consistency in Don Norman's Design Principles and forgiving in usability goal as it allows the user to go back to the previous page whenever they figure out they made a mistake.

Testing methodology

For user testing, we have defined a set of usability tasks and usability requirements. They were assigned to several participants from different faculty so that they an in some kind connected with the tutorial theme that knows how the tutorial works but no a tutor and not involved in the development process of the tutorial prototype so they can provide an unbiased view and insight to the prototype.

For the testing approach, think-aloud testing is used as the testing methodology. They are asked to provide their opinion on the prototype when they went through the tasks. With the use of the think-aloud approach, it can minimize the cost for user testing and more flexible as the method can be used in any stage of the development lifecycle. (Thinking Aloud: The #1 Usability Tool, 2021)

Usability test

Usability requirement:

Usability requirement no.	Usability requirement description

UR1	User can display the menu page
UR2	User can display the summary of marks for the student.
UR3	User can display the summary of marks for a given week
UR4	Users can enter the marks of the students on a weekly basis
UR5	Users can add a new student to the class
UR6	Users can delete a student from the class
UR7	User can share a list of scores for each student

Usability test task

Usability test task no.	Usability test task description
UT1	You are a new tutor in utas, you have just been introduced to a new application for the tutor to take attendance and mark off the students in the tutorial, you are now trying to use the application for the first time. You first opened the app and check the options available on the menu.
UT2	One new student has been added into your class via mytimetable, one student has just swapped with him/her, you now have to use the manage students page to add and remove the students in your class.
UT3	You have now entered the detail of the students, you are now trying to enter a tutorial mark for the students.
UT4	You have now entered the mark for the student in the tutorial, try to check the data you entered from the student summary page.
UT5	You found that there is also a weekly summary page option on the menu, try to check the difference between the weekly summary page and the student summary page.
UT6	The university is asking you to provide the score for a specific student, try to export and share the list of the score for one of your student.

UTASK/UREQ	UR1	UR2	UR3	UR4	UR5	UR6	UR7
UT1	x						
UT2					x	x	
UT3				x			
UT4		x					
UT5			x				
UT6							x

The think-aloud approach usability test was conducted in the school library with a simple computer and Balsamiq wireframe was used for the user testing. The full-screen presentation was used for the testing

as it allows the links in the prototype active and the navigation in the application allows the users to run the test more smoothly.

Testing results and discussion

Five participants are invited to participate in the test of the low-fi prototype using the Balsamiq wireframe, think-aloud approach is used so they can tell their immediate feedback to the tester. Some improvements are suggested by the participant which will be discussed later. Three of the participants are from the school of engineering in UTAS and two of the participants are from the school of economics in UTAS.

Usability test tasks result.

Participant 1(engineering school)

Usability task no.	Think-aloud feedback
UT1	0:10 it looks simple and easy to understand the options available.
UT2	0:15 good to use the add and delete student with icons so it makes me understand easier. 0:20 the add student page looks simple but still includes basic information that is enough for a tutor to enter them in the tutorial. 0:50 the add button is shown in the text that is good that would not confuse the function of it from the previous page.
UT3	0:30 Tutorial mark are only available in mark without showing the full mark that may make confusion to the tutor
UT4	0:20 good to have student details on top of the student summary page and it is easy to understand and use.
UT5	0:30 good to have the list of marks for the students in weeks showing the total and average.
UT6	0:30 trying to figure out where to export the file. 0:55 found the share button inside the student summary page.

Participant 2(engineering school)

Usability task no.	Think-aloud feedback
UT1	0:15 The menu page is too simple with just words can add some icons to it to make it more understandable and interesting.
UT2	0:20 good that the icons on the page are easy to understand.
UT3	0:25 some of the tutorials include checkpoint, maybe better to include them on the mark off page.
UT4	0:30 may be better if the student marks can also be shown in a chart so the tutor can just have a quick look at the student marks.
UT5	0:35 weekly summary page is good and simple enough.
UT6	0:10 directly entered the student summary page. 0:15 successfully found the button of sharing

Participant 3(engineering school)

Usability task no.	Think-aloud feedback
UT1	0:30 like the simplicity of the menu page as there should not be many functions available for a tutorial app.
UT2	0:25 edit button may also be an option for the tutors as sometimes they might have entered the student details wrongly.
UT3	0:30 good to have the short summary of marks entered.
UT4	0:35 only student total and average are shown for that student, can have more details on it.

UT5	0:40 weekly summary is simple and good.
UT6	0:15 where is the share button. 0:30 found the share button inside the student summary page.

Participant 4(economics school)

Usability task no.	Think-aloud feedback
UT1	0:20 menu looks good with all options I can think of.
UT2	0:40 students can be added so easily. Good.
UT3	0:45 the weekly mark off is easy to use with just a few options available.
UT4	0:50 the search bar is simple and easy to use without thinking, nice.
UT5	0:30 the calendar can be smaller to show more details on the week.
UT6	0:20 found the share button, is that what you use to export?

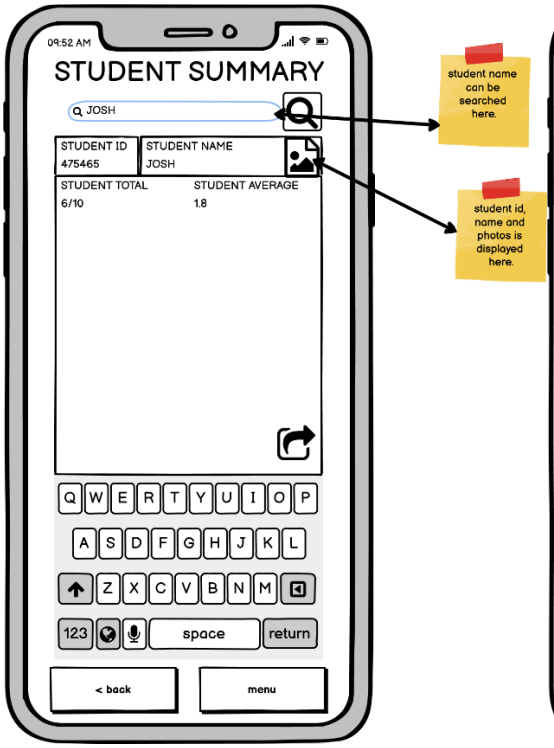
Participant 5(economics school)

Usability task no.	Think-aloud feedback
UT1	0:15 menu is different than I imagine, much simpler.
UT2	0:30 add and delete student is easy to understand and use.
UT3	0:35 sometimes we use HD or DN instead of just marks.
UT4	1:00 summary seems fine, but where is the attendance?
UT5	0:30 weekly summary looks good but can have more detail such as attendance.
UT6	0:15 share button is easy to find on the student summary page.

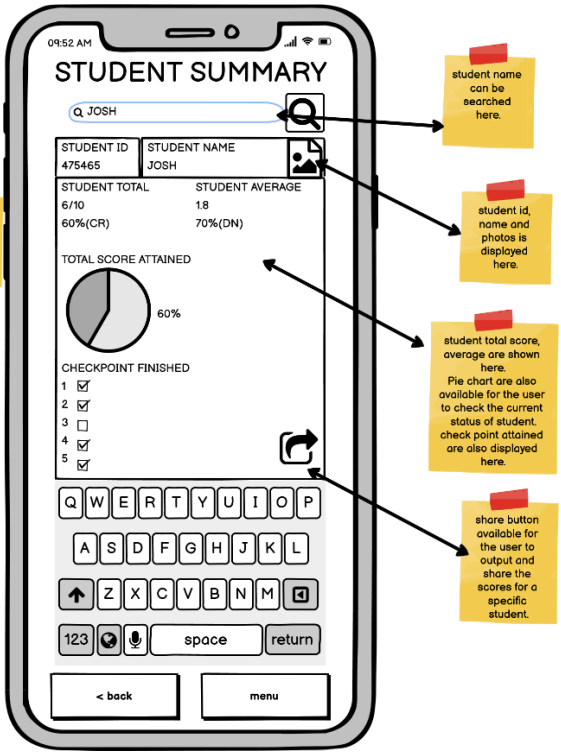
Discussion

From the above result, we obtained from the participant, the most important part for us to improve is the mark off page as the information and options available is not enough for the needs for the tutorial. Grades, checkpoints and attendance shall be included in the mark-off page so that it facilitates the needs. Other than the mark off page, sharing button may be har to find for some of the users in first use but should be okay as all of the users can find them within one minute. The student summary page can also be improved as the current one only got the total score and average score. In response to the result obtained, we have improved the student summary prototype to include chart, grading and checkpoint for the student and mark off page to be able to mark the checkpoints and choose the corresponding grading needed. Some more improved shall be made after the report including the attendance check, a smaller calendar for weekly summary, etc. With the improvement of the prototype, we will be able to produce a better and more mature application for the use for the university.

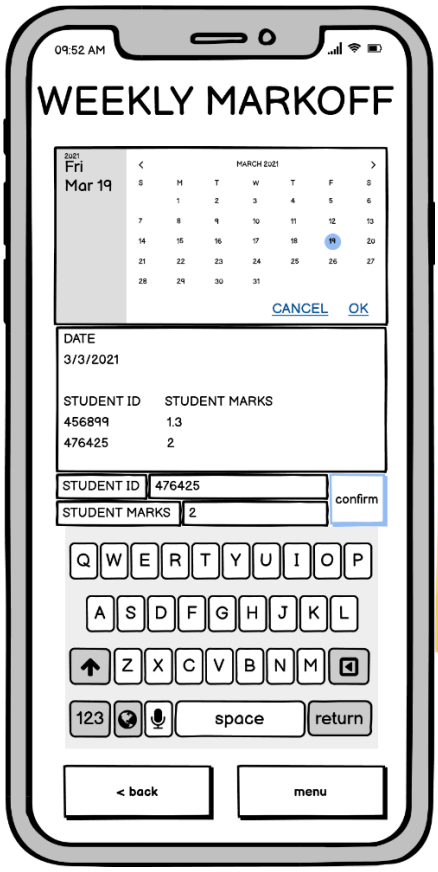
Previous student summary



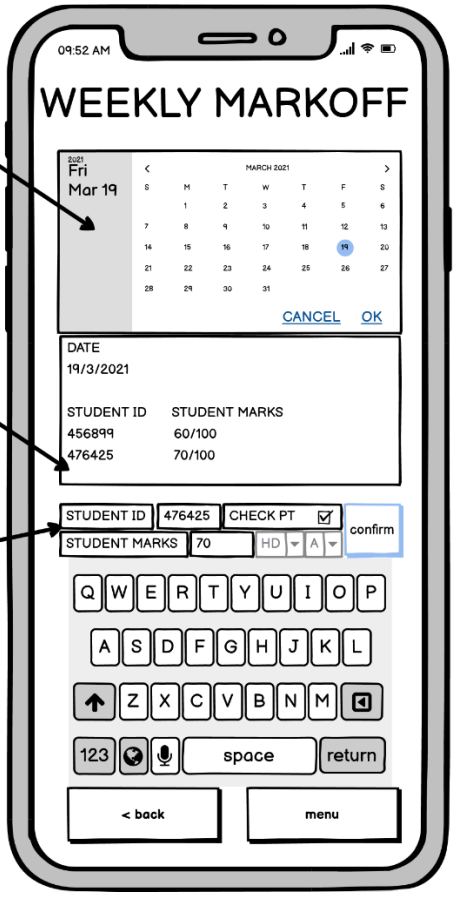
Current student summary



Previous mark off page



current mark off page



Conclusion

From the above report, the use and function of low-fidelity application like Balsamiq wireframe allowed me to explore more on the low-fi prototype. The use of the usability test and think aloud approach allowed me to get familiar with the testing approach we will be used in my future career.

Reference

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