Cat 9 Infocomm Report Format

Instructions:
- Each project group will produce 1 report
- The report should not be more than 1500 words (excluding annexes, diagrams, charts)
- All pages must be numbered
- Font 12, Times new roman
- Deadline for submission of Written Report: 16 August 2018 (Thursday)
- Group leader is incharge of emailing your mentors
- Submit at least 1 draft copy before the actual report submission at least a week before the deadline

Assessment

Full assessment of PW is based on 100% marks (inclusive of marks from the 3 Evaluation Stages, Written Report, and Individual Performance Evaluation).

Sections

Cover Page
- Project Title
- Name & class of all members in the group (With the leader indicated)

1. Introduction

Main idea under study is clearly stated, and the approach to managing, resolving or investigating this idea is clear and concise.

       a. Description of ideas/issues/Thesis Statement
       b. Rationale of project
       c. Focus and significance of project
       d. Scope of the project

2. Literature Review/Theoretical Framework/Reference Models

Ideas are backed up by supporting theories, practices and examples in the form of literature review, current models, case studies or real world data gathered from surveys, fieldwork or experiment.

       a. Positioning of current study in the wider literature/context(Case studies)
       b. References/practices cited to support ideas/issues raised

3. The Study & Methodology

Students are able to use information collated to develop ideas of their own to manage the issues identified.

       a. Ideation, description of study
       b. Investigations, surveys(Needs analysis and user feedback), experiments, research
         methods(development platform, tools used)
       c. Members role and job distributions
       d. Project timeline

4. Outcomes, Analysis & Discussions

Students apply critical, creative and caring thinking skills to judge the effectiveness of the ideas they are presenting.
- Flowchart of the different features of the system
- Include all features of the system with screenshots and descriptions of its purpose

5. Implications and Recommendations

Students apply critical, creative and caring thinking skills to judge the effectiveness of the ideas they are presenting.
- Include area for improvements and possible further extensions

6. Conclusion
- Reflections & learning points from the project development process

7. Bibliography
- APA format

i-Broadcast (9-14)

Shi Chuan (2O222)
Yang Hong Yu (2A131)
Gong Eric Li (2O211)
Fan Diwen (2O210)

INTRODUCTION:

a) We all are familiar with the Integrated Electronic Message Board (iEMB) system in our school, an information delivery system through the form of messages which can be received by the whole school, to inform students and staff about various events or activities taking place in the school. We can all agree that the iEMB is a brilliant and useful system in our school, but are there certain flaws in this iEMB system? Can it be further improved? Firstly, though iEMB has brought great help and advantages, it lacks many other functions which may be useful and increase the efficiency of this system. For example, it does not have an instant message receiving system or a PA system embedded in it. Students and staff have to log into iEMB in order to read the messages each time, therefore if the school were to send an urgent message to be delivered to the school, it is very unlikely that students and staffs will be able to read it on time. PA systems allow the announcer to be audible over any distance, in the event of an emergency, the school can use PA systems to alert staff and students very quickly. Although our school has an alarm that will ring during an emergency, it does not differentiate the different emergencies(ie fires or intruders), therefore having a PA system or an instant message delivery system is very important. This is why our group proposes the i-Broadcast app with a streamlined message delivery system, notifications which act as a PA system, announcement message system which allows urgent and important messages to be delivered and read by the whole school in an instant.

b) I'm sure that by now we are all familiar with the issue of students forgetting to read i-EMB messages. We strongly believe that the main reason for this is because of the lack of reminders, or rather, notifications. Since i-Broadcast is an app, notifications will be more often seen on it than on websites. Most people have phones but not many have portable laptops and few bring one to school with them. If they could just use an app version of i-EMB, it would solve the problems of lack of students reading i-EMB messages. A well-designed mobile app can perform actions much quicker than a mobile website. Apps usually store their data locally on mobile devices, in contrast to websites that generally use web servers. For this reason, data retrieval happens swiftly in mobile apps. Hence, it is easier to send announcements or read announcements if i-EMB was an app and thus we have decided to create i-Broadcast. It will be able to send push notifications to the user and so, the students will be able to tap on the notifications and enter the app immediately to read the messages. This is a much more convenient and effective way to increase the number of students reading important messages as compared to sending warnings to the students. Warnings are often forgotten but having an app offers way more possibilities and flexibility. Students are able to be constantly reminded to read a message through push notifications and need not be punished any

longer. Users spend a substantial amount of their time on mobile devices. It's safe to say that many of the users encounter the apps they've installed on their devices, almost every day. As for websites, they may not even touch it at all, which is why using apps would be a better alternative.

c) As you may have noticed by now, the aim of our project is to provide students and staff with a better source of communication and information platform, which looks onto upgrading the current one as a completely new app, making it more accessible, convenient and efficient.

d) Our goals are simple. To create an application that is like i-EMB, but with a more efficient way of storing data and retrieving information even quicker. This includes keeping the user signed in and also the ability to download the announcements. We are fully aware of the time constraints, however, we believe that we can complete most of the work by the end of the year. Some of the other constraints are failure of code, where we might miss out a few simple lines of code for example:
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=
+
Despite these challenges, we will put in our utmost effort and will be prudent in the process of coding. We will constantly try out different kinds of code to see which one works the best and is the most efficient. We will try and complete the log-in page by July and the announcements by the end of August.

2. a) Our group has conducted a simple survey during the preliminary period to know the school's views on our i-Broadcast project. The survey consisted of questions like: Do you find iEMB troublesome or inconvenient to use? Do you think a notification system in the iEMB would be great? Would you like iEMB to be replaced by another system? The survey accumulated a total of 53 responses, and it clearly shows that a great majority of the respondents supported our i-Broadcast project, which further proves the usefulness of it.

Do you feel the current iemb system can/should be improved?
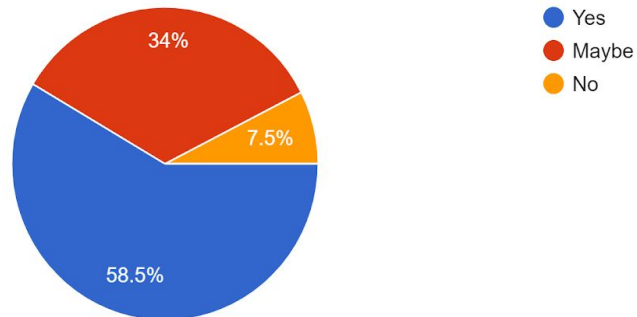53 responses
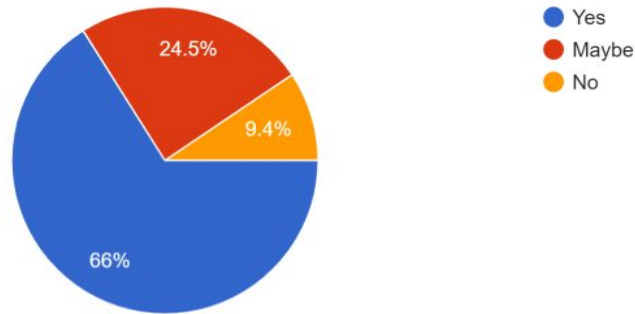
Would you like a notification system to be part of the iemb?
53 responses
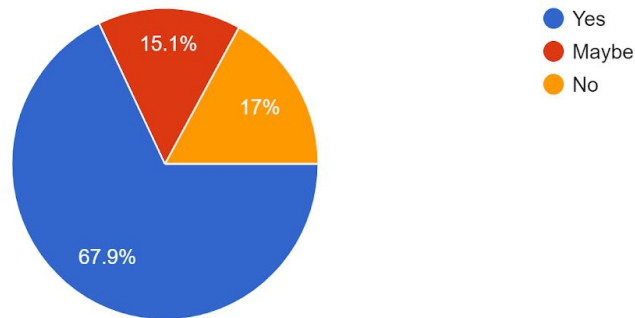
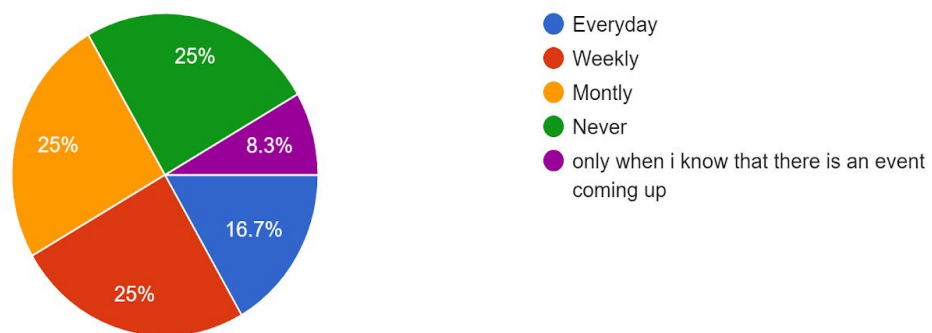Would you want a new system to take the place of the iemb?
53 responses

- Yes
- Maybe
- No

34%

7.5%

58.5%

b) The problems our project is looking at is also proven to be true by another survey that we have conducted. In the second survey, it revealed that only a mere 16.7% of the respondents read the iEMB everyday, the others either read only when there is a big event coming, monthly, weekly, or the worst case, never. The survey also showed that a huge percentage of 75% of the respondents often miss important events and have to get the information from friends.
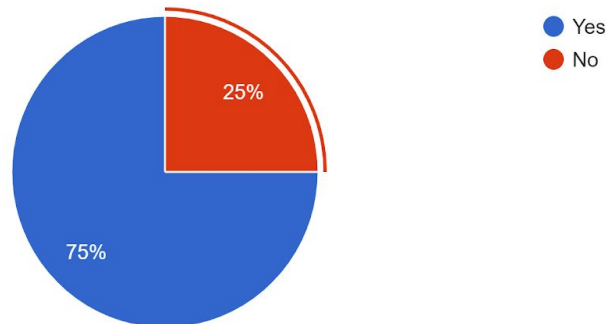
How often do you read iemb?
12 responses

- Everyday
- Weekly
- Montly
- Never
- only when i know that there is an event coming up

25%

25%

25%

8.3%

16.7%

Do you frequently miss important events and need to rely on your friends for information?
12 responses

3. The Study & Methodology

    a. It's no secret that the world has gone mobile. We're living in an era where our smartphones are within an arm's reach at all times, day or night. What's everyone doing on those devices? Using mobile apps. The potential use cases for mobile apps are seemingly endless. From small business apps to ecommerce apps, fitness apps, internal employee communication apps, religious apps, and more—there's an app for anything you can imagine. Hence, we researched on what it took to build an app for announcement purposes.

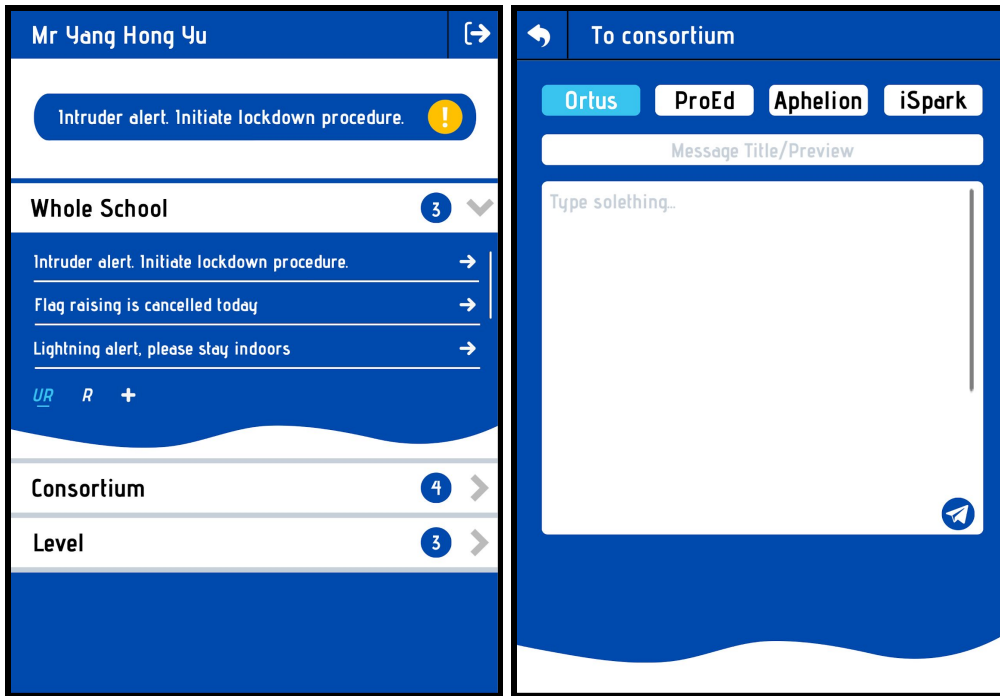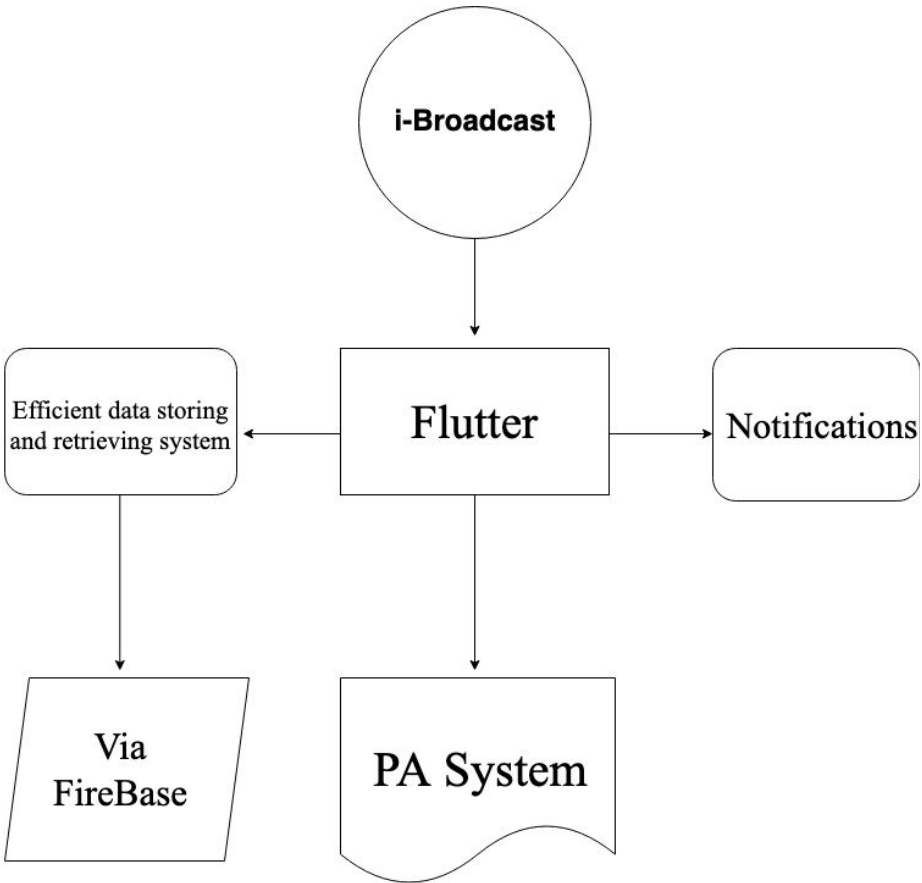   b. We have done surveys and the results are at point (2)

    c. Work Distribution:
- Main Coders - Shi Chuan, Diwen
- Report writers - Eric, Hong Yu
- Designer - Eric, Hong Yu
- Information Provider - Hong Yu
- Editor/Touch up - Diwen, Hong Yu
- Slides - Eric, Hong Yu, Diwen

    d. Project timeline

My Timeline

Working login screen
APR 30

Working main page
MAY 20

Firebase connected to flutter
JUNE 1

Messages can be stored in database
JUNE 18

Implemented designs
JULY 1

Working message sending function
JULY 15

Notifications
JULY 30

Fullly functioning app
AUG 1

PW Final Evaluation
AUG 12

4. Outcomes, Analysis & Discussions

Mr Yang Hong Yu

Intruder alert. Initiate lockdown procedure.   ⚠

Whole School   ③ ∨

Intruder alert. Initiate lockdown procedure.   →
Flag raising is cancelled today   →
Lightning alert, please stay indoors   →

UR   R   +

Consortium   ④ >
Level   ③ >

To consortium

Ortus   ProEd   Aphelion   iSpark

Message Title/Preview

Type solething…

"+" icon for senders to send a message   When tapped on the "+" sign.

Lets say the sender tapped on the consortium section and pressed the "+" sign to send a message, it will bring him to this screen. The four options on the top will vary based on the section the sender chose to send the message in. For instance, if the Level section was chosen, the four options would be "Sec1" "Sec2" "Sec3" "Sec4" respectively. "To consortium" would also be "To Level".
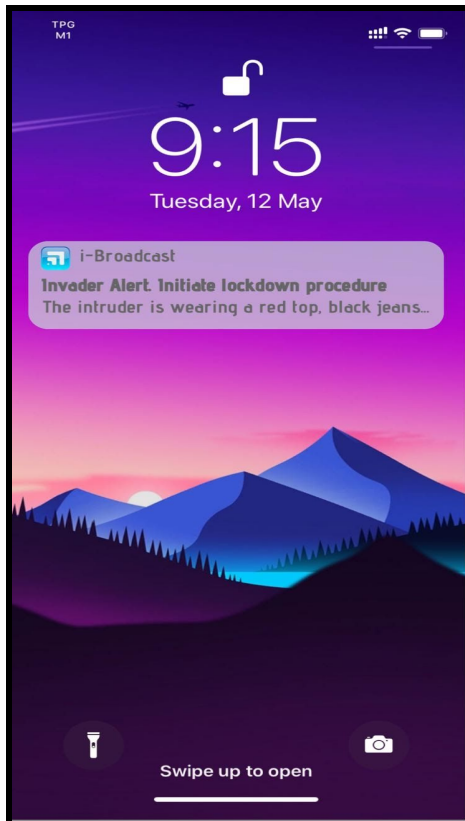
This is what a notification from the app would look like.

5. Include area for improvements and possible further extensions
   a) Though the i-Broadcast project comes with many advantages, there is always room for improvement. Firstly, due to time constraints, communication due to COVID, etc, our group was not able to come up with an actual app. Our prototype is now just a small system of codes consisting of the functions the app is supposed to serve. That is why we think that that is something to improve on since the project will only be fully applicable if it was an actual app. Currently, our project is lacking a lot of content, such as the login page and the actual user interface to receive messages sent by the teachers, which is

partially due to the constraints we had. Apart from that, we feel that our app could have some additional features like a search function to find messages quicker

6. Reflections and learning points

    a) Throughout this almost year long project, we have faced many challenges. The main problem is the current covid situation where our group members can't meet up frequently to discuss this project, this resulted in poor coordination between group members and at times, arguments arose due to conflicting ideas. Other problems include not abiding by our proposed timeline due to lack of discipline and commitment and our main focus was academic results. Some other issues also included our lack of knowledge on dart and our overconfidence. We originally thought that this project would be pretty easy because two of our members have experiences with languages like javascript, python, c++ and another two were in the app development module for infocomm, given that our mentor Mr Cheong also recommended it and the Flutter website said it had many widgets which shortened the code, however, we didn't realise how different Flutter was from other computing languages. Dart felt like a whole new language, it was like being proficient in malay in six months as a native english speaker. Therefore, there were a lot of bugs for something as simple as connecting firebase to our emulator, which wasted a lot of time as we had to find out the solutions ourselves. Through this project, we have learnt that developing an app is not an easy task and that we should not underestimate how much time it takes to implement a new feature

7. Bibliography

i-Broadcast
Project Work Cat 9 (Infocomm)
Mr Cheong
15 August

i-Broadcast

1. **Development**
- Implementing the data structures, custom objects/classes, DB, creating cohesive system
- Breaking down the functionality of our app into little parts, and implementing them
- Designing & Creating the graphical resources
- Implementing the UI

2. **Testing**
- Spending our nights crying over some stupid bug that we cannot figure out.
- Trying every combination of hardware and configuration to fix the bugs that could and will occur

3. **Our app's contribution**
- Help students to remember to read important messages.
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