

Written Report 2020

Project Title:

38°C APP

Group ID:

9-16

Members:

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Zhu Yunsong (1i2)

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38°C

Introduction:

Thesis Statement:

This application, 38°C APP, that we have designed would be very beneficial in the fight against SARS-CoV-2.

Rationale of project:

COVID-19 pandemic is a serious problem.

This app was created to slow down and prevent the spread of the virus, When arriving anywhere, we need to take our temperature and complete SafeEntry to facilitate contact tracing.

In school, to check if everyone has taken their temperatures and completed SafeEntry, teachers have to spend a lot of time personally checking on every student which is both time-consuming and very troublesome.

Thus, we have designed this app to provide convenience for the teachers and facilitate their jobs.

Focus and significance of project:

The focus of this project is to provide convenience for teachers to help in the fight against COVID-19. This app can help in facilitating contact tracing by ensuring that everyone has completed SafeEntry and taken their temperatures. It can also be used to help quickly identify people who are having a fever which is a symptom of COVID-19.

Scope of project:

We need to be able to programme an app using MIT App Inventor (<https://appinventor.mit.edu>) that can capture and record temperature submissions. It should also be able to allow students to conveniently access SafeEntry.

Literature Review/Case Study/Theoretical Framework/Reference Models

Positioning of current study in the wider literature/context (Case studies):

Its effects after being input into the society will be that the spread of COVID-19 will become slower and eventually stop the spread COVID-19. It can also be used when the next pandemic occurs. After the pandemic, this can also be used for attendance taking or identifying if a student is sick. It can be used by teachers and students alike, and even business or government agencies if successful.

References/practices cited to support ideas/issues raised:

SafeEntry is extremely important because every scan counts towards our fight against COVID-19.

Nearly 20 million cases of COVID-19 have now been recorded. WHO Director-General Dr Tedros stressed that behind these statistics there is a great deal of pain and suffering. He emphasized that 'There are two essential elements to addressing the pandemic effectively. Leaders must step up to take action and citizens need to embrace new measures...My message is crystal clear: suppress, suppress, suppress the virus'.

Situation in numbers (by WHO Region)		
Total (new cases in last 24 hours)		
Globally	19 936 210 cases (216 033)	732 499 deaths (4 268)
Africa	903 249 cases (7 553)	16 985 deaths (272)
Americas	10 697 832 cases (106 903)	390 850 deaths (2 277)
Eastern Mediterranean	1 657 591 cases (13 232)	43 878 deaths (445)
Europe	3 606 373 cases (21 315)	217 278 deaths (267)
South-East Asia	2 691 452 cases (58 679)	54 633 deaths (956)
Western Pacific	378 972 cases (8 351)	8 862 deaths (51)

Data as received by WHO from national authorities by 10:00 CEST, 11 August 2020

After weeks of observation, we estimated that a teacher takes an average of 3.49 minutes just to check whether the students have taken their temperature and completed SafeEntry.

Study & Methodology

Ideation, description of study:

We used the google search engine to find anything we do not know, along with observing and collecting data from both classes 1A1 and 1I2, for example, we collected data on how long it takes for a teacher to check if everyone has done SafeEntry. We also sought advice from our mentor and seniors. We also browsed through past year projects at Hwa Chong Project Work Sites.

Investigations, surveys, experiments, research methods:

Observation of how long a teacher takes to check and record a class of students' temperature and if they have checked in into SafeEntry.
Online research from different sources and websites on the Internet.

Members role and job distributions:

Alvin - Leader (In charge of helping in everything and coordinating work)

Anzac - Programmer (In charge of programming the app)

Wenkang - Research Compiler (Collates and arranges all our research information in the slides)

Yunsong - Designer (Designs slides, project log etc.)

Project timeline:



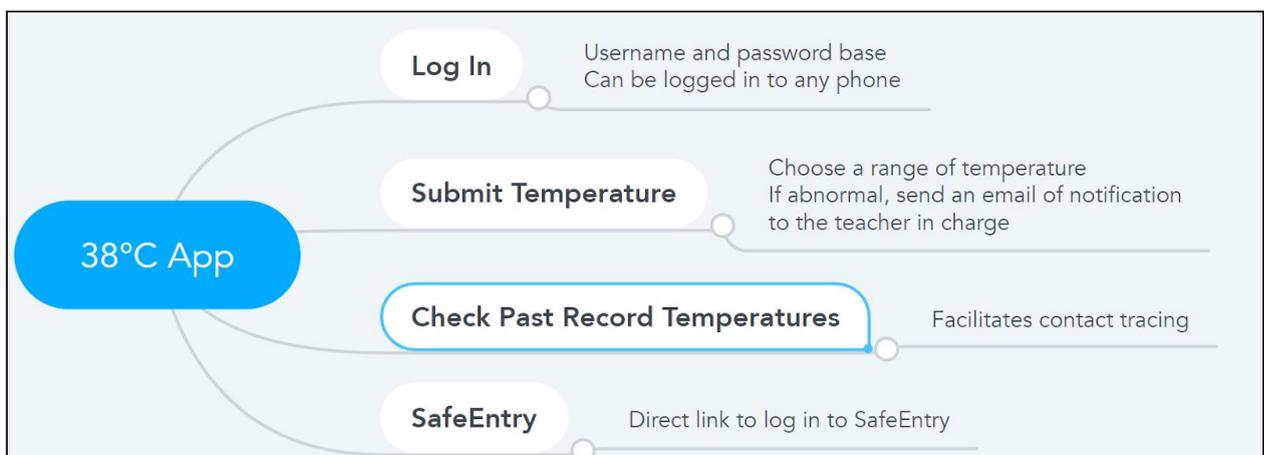
Outcomes, Analysis & Discussions

Outcome:

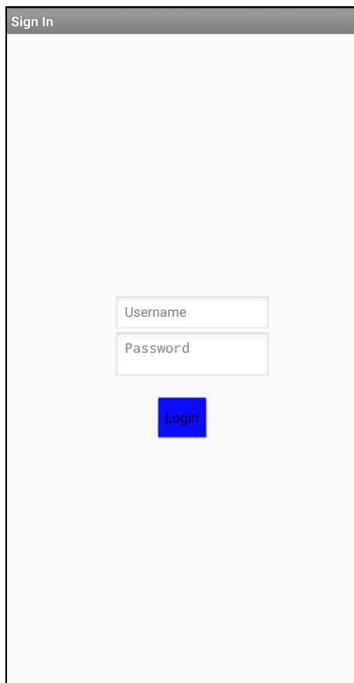
According to our observations, it takes an average of 3.49 minutes just to check if the students have checked in to SafeEntry. On the other hand, it only takes an average of 37 seconds to complete and fill in the submission form for our app.



Flowchart:

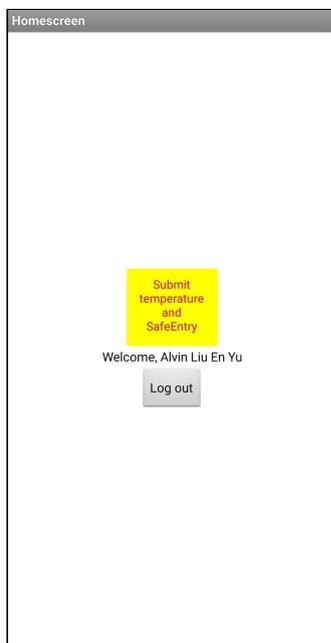


Features of system (app):



Sign In

- Sign in with same username and password as for iEMB
- Can log in on any phone as long as it has this app downloaded



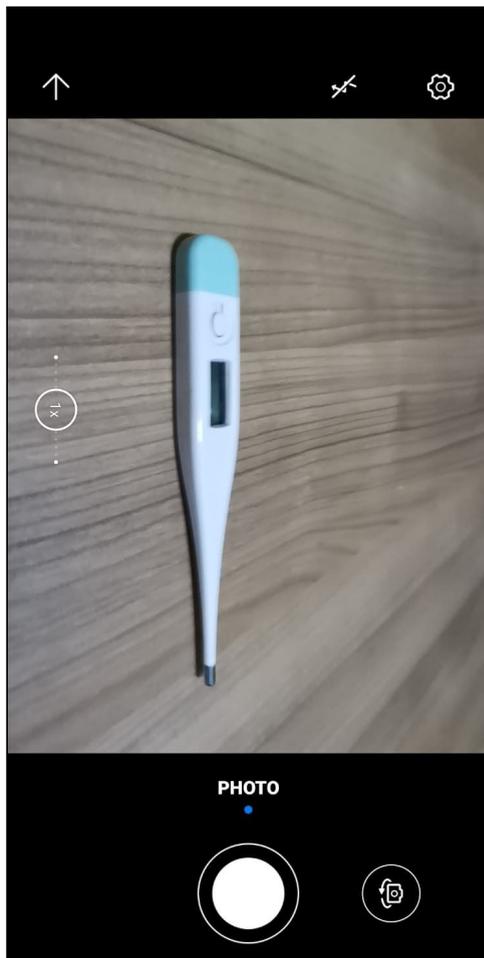
Homescreen

- Choose to submit temperature and log on to SafeEntry or to log out
- Able to display the name of user based on their username



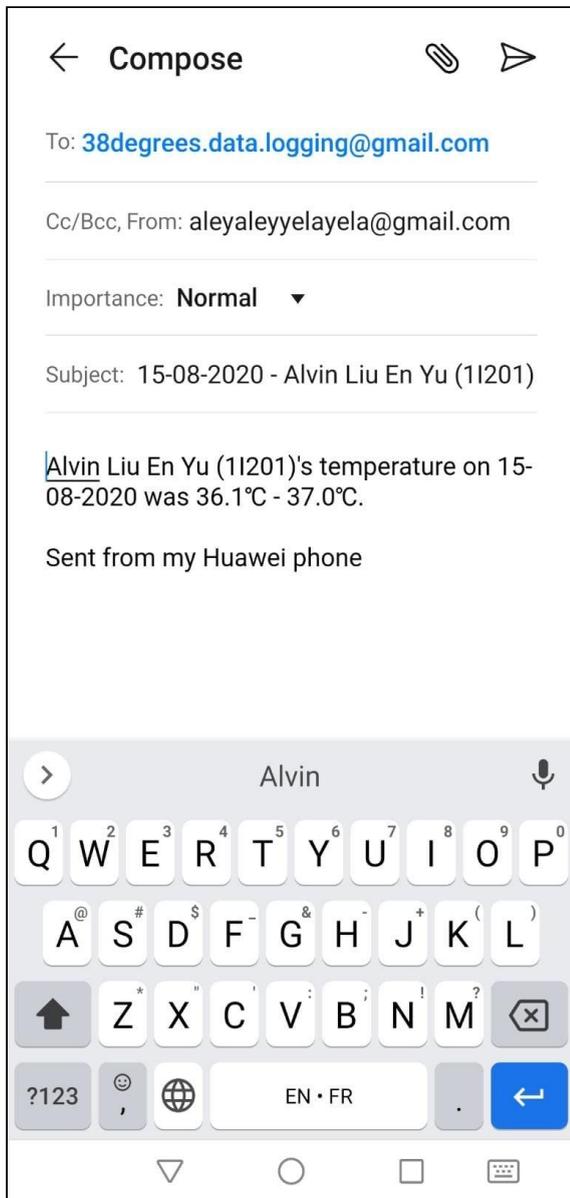
Submission of temperature and SafeEntry

- Choose the range of temperature
- Take a photo of the thermometer as evidence
- Access SafeEntry by pressing the button, then tick the checkbox



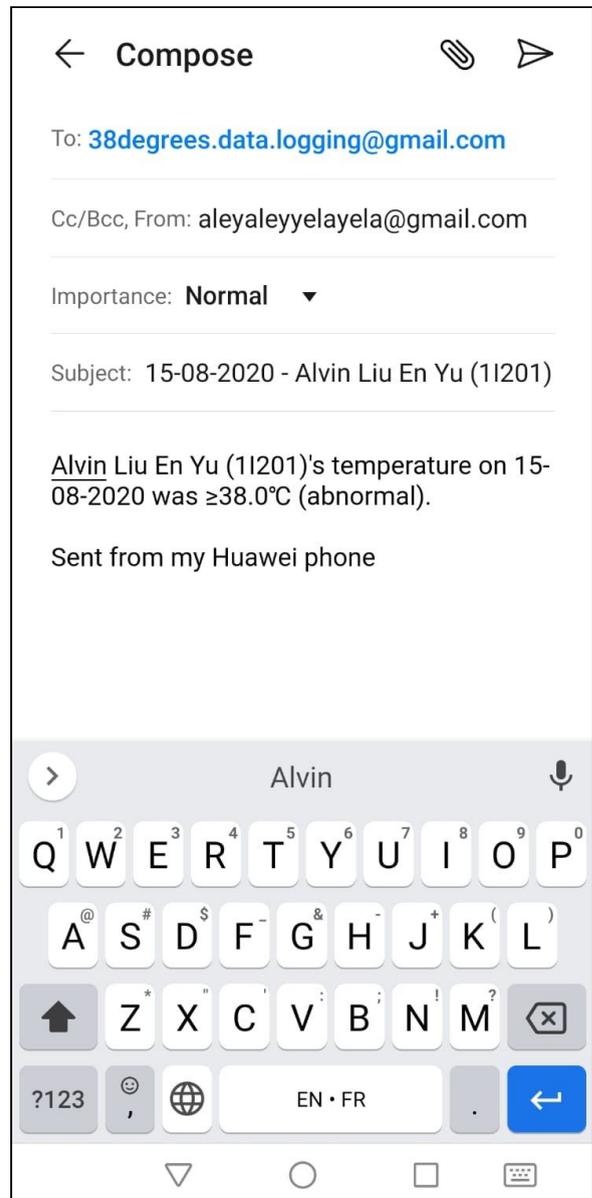
Taking photos of a thermometer

- Allows students to submit a photo of their thermometers to show that they have taken their temperature
- Able to take photos of temperature but unable to store the photos due to limitations



Logs the student's temperature

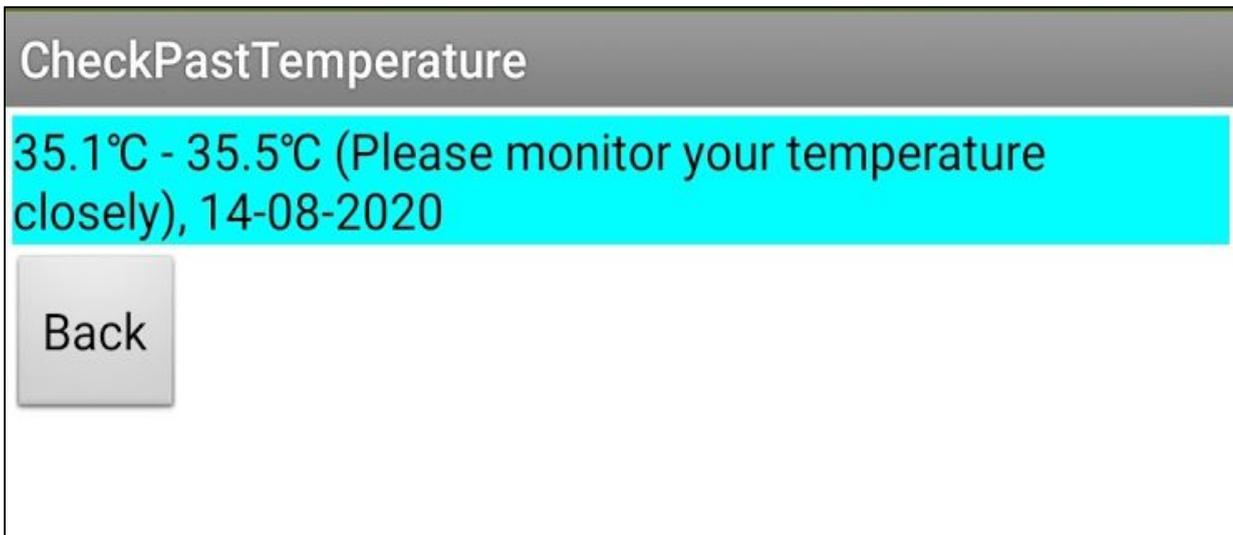
- Sends an email with information of the students
- The subject of the email allows easy finding of temperature and data based on student's name, class, index number and date of submission



Sends alerts if a student reports abnormal temperatures

- Notifies student's form teacher based on student's class
- Notifies the High School Admin Office

Check Past Temperatures



- This feature allows students to check the temperatures that they have submitted
- If the student realises that they have submitted their temperature incorrectly, they can resubmit their temperature immediately
- However, the temperature they have input will no longer be saved as we are currently unable to retrieve data from the database as that is a function that will only work on the APK file in which the Gmail function does not work

Implications and Recommendations

Areas for improvements:

- The app can have a better design as the design in the app is quite plain
- We need to have better time management as most of the work was only done close to the deadlines
- We need to accept our mistakes and responsibilities and work on them
- We need to be more independent and not focus on the project only when asked to be
- We planned to allow the students to retrieve their past temperature history from the database but we could not find out how
- We could have connected the app to a MySQL Database through PHP

Possible further extensions:

- Add a function FTP the photos of the thermometer but it costs money to buy that additional feature through extensions sold online
- We could create more accounts in this app to accommodate all Hwa Chong students and staff
- We could use a different software to code the app so that more things such as a working APK file would be possible

Conclusion

Reflections:

Alvin: Through months of working together with an amazing mentor and amazing groupmates, I have learnt how to be a better team leader and how I can motivate and lead the team towards a common goal. I have also learnt to recognise and accept the strengths and weaknesses of each team member.

Wenkang: I have learnt to cooperate with my teammates who were once just strangers to me. I have also learnt to admit my mistakes and weaknesses and accept tutoring from my peers.

Yunsong: I have learnt to work as a team and accept each other and everyone's weaknesses. I learnt to listen to other members' opinions and not be self-centred.

Anzac: I have learnt tremendously from this project work such as working as a team effectively and division of labour, like becoming willing to accept punishments as a team.

Learning Points:

- Working as a team
- Dividing the workload
- Discussing different views instead of arguing
- Accepting responsibility and not appointing blame
- Helping each other and accepting each others' weakness
- Working efficiently even if we are not physically together
- Communicating effectively with each other to avoid misunderstandings
- Presentation skills
- How to code an app
- How to come up with ideas
- Handing in work on time

Bibliography

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