SECP1513-04 TEKNOLOGI DAN SISTEM MAKLUMAT

(TECHNOLOGY AND INFORMATION SYSTEM)

Semester 2023/2024-1

Phase 2: Design Thinking Information Gathering & Analysis

Project Title: **UTM AR Face Attendance System**

Project Field: Augmented Reality

Lecturer: Dr Muhammad Iqbal Tariq Bin Idris

Group: IT Xpert

Name	Matrics No
Ricky Tang Siet Hong	A20EC3008
Ma Liwei	A22EC4011
Muhamad Zulhilmi Bin Jamari	A20EE0125
Tan Jia Ying	A23CS0274
Angie Wong Siaw Thing	A23CS0048
Jiang Shang Xi	A20EC4085

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1.0 Analysis of the data from UTM attendance system survey

Occupation
39 responses

Legend:
- Student
- Lecturer

97.4%
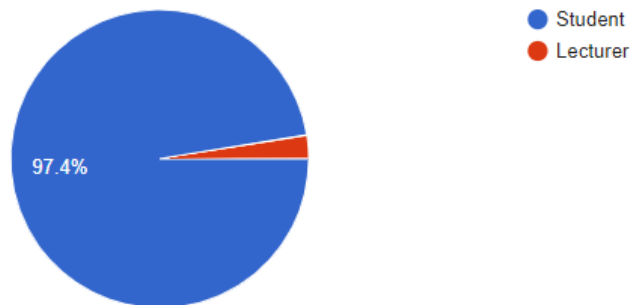
Year Of Study (for student)
39 responses

Legend:
- 1
- 2
- 3
- 4
- Master
- Phd

28.2%   17.9%

48.7%
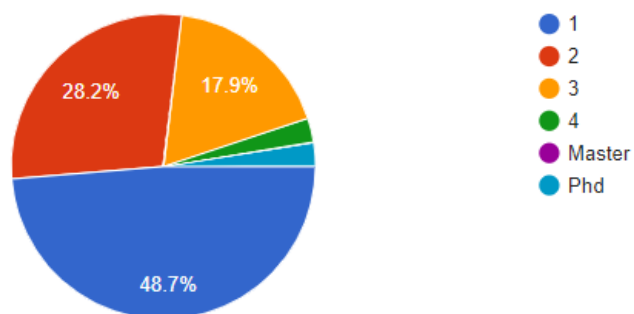
Have you ever faced the problems while scanning the attendance QR code by using UTMSmart app?
39 responses

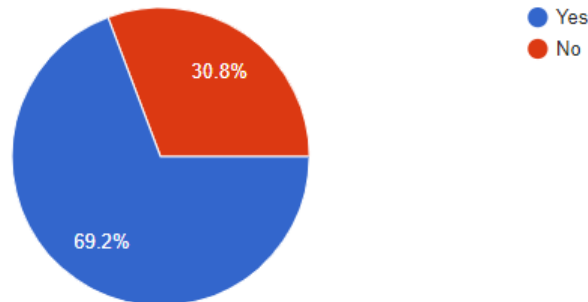| Category	Value
Weak internet connection	33 (84.6%)
Unclearly image of code	18 (46.2%)
Inconvenient for non-smartphone users	7 (17.9%)
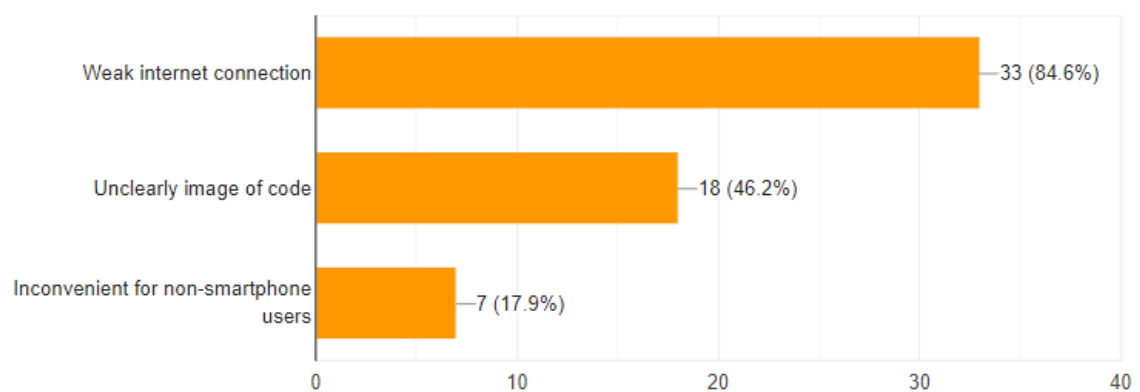
Have you ever observed students scanning the attendance QR code without actually attending the classes?

39 responses

- Yes
- No

30.8%

69.2%
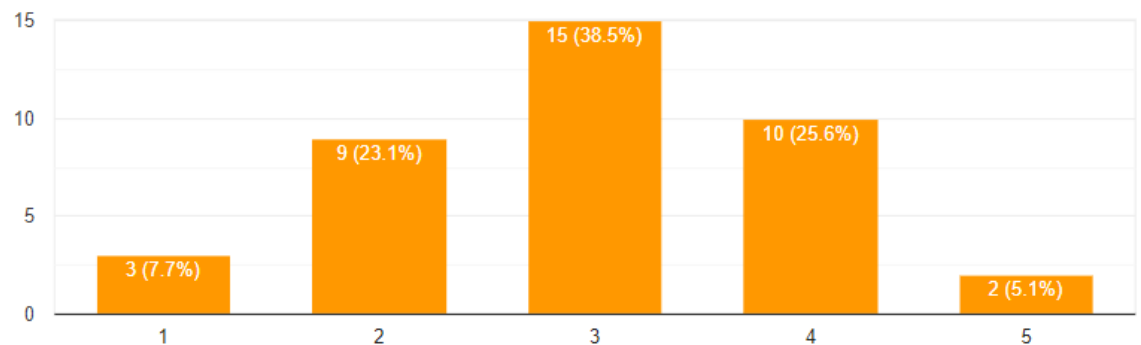
Are you satisfied with the interface of the UTM Attendance System in UTMSmart app?

39 responses

Based on the survey, 97.4 % of respondents are UTM students and 2.6 % of respondents are UTM lecturers. The students mostly are first year students, which is 48.7 % of the students. 28.2 % of the students are second year students and 17.9 % of the students are third year students. The others are fourth year students and phd students. The first question in the survey asked respondents about the problems they faced while scanning the attendance QR code by using the UTMSmart app. Most of the respondents thought that weak internet connection is the problem while scanning the QR code. It is because the weak internet connection may cause them unable to access the UTMSmart app to scan the attendance QR code. 7 respondents thought that the problem is inconvenient for non-smartphone users. It is because sometimes the students may forget to bring their smartphones to their lecture when hurrying to class. There are also some students who prefer to use the laptop instead of using a smartphone. The second question is to

know whether the students ever observed the other students scanning the attendance QR code without actually attending the class. 69.2 % of the respondents have observed the students scan the attendance QR outside the class whereas 30.8 % of the respondents have not observed the behaviour. It shows the bug of the attendance system and it gives students the opportunity to play truant. The third question is to know the satisfaction of respondents towards the interface of the UTM attendance system in the UTMSmart app. Most of the respondents were satisfied with the interface of the attendance system whereas only 2 respondents were very unsatisfied with the interface.

2.0 Interview with user

On the 14st December 2023, we had an interview with Mr. Tan Zheng Yu, a UTM first year student. The interview was about the attendance system in the UTMSmart app. The interview started off by asking his opinion about the UTMSmart app. In his opinion, the app is a good app but it has fewer and limited features compared to the MyUTM portal. He said that he discovered that there is an issue in the attendance system, in which the student can scan the QR attendance code shared by their friend without attending the lecture. The students have lost their integrity as a student and it may lead to severe consequences to their life, especially while studying in the university.

Mr. Tan agreed with the adding of the Face ID or fingerprint scanner in the attendance system. He thought that it would improve the attendance system by combining it with the current UTMSmart app. He suggested that the attendance system only can be used when the UTM wifi is connected to the user's phone.

We also ask his opinion about the statement that bringing a smartphone to attend the lecture is a problem and the idea of setting up a machine with face detection in front of every lecture room to record the students' attendance . He did not agree with the statement and the idea. It is because setting up the machines will need a huge maintenance from UTM. As compared to the machines, using the smartphone is more convenient for the students and lecturers. However, he thought that it is a lack of security and it will be better by adding the Face ID or fingerprint scanner inside the attendance system.

3.0 Interview with UTM Digital staff

On the 21st December 2023, we had an interview with Mr. Mokhles bin Md Sawal, an IT Officer at Universiti of Technology Malaysia. The interview started off with a brief introduction on the current challenges that are being faced by UTM Digital on a daily basis. We also learned about ways of overcoming problems such as technical issues and cyber attacks through the interview.

Mr Mokhles was excited to share his thoughts on the pros and cons of the UTMSmart App with us too. Reaching upon the point where we discussed the problem of certain students scanning the attendance QR code outside of their classes, Mr Mokhles provided a method called location tracking to find out whether the student is actually in the class or not. The idea was very simple, by just tracking the UTMSmart App Location's service, UTM Digital can detect whether the student is actually present within 500m radius of where he or she scanned the QR code. If the student is outside of that specific radius, it is highly possible that the student is actually "cheating" to be attending class on that particular day.

Last but not least, Mr Mokhles stated that the application of the AR Face attendance system is actually the same as the current QR code attendance system. However, if a machine is being set up in front of every classroom to scan the faces of the students, then it would be very efficient in detecting those who did not show up for the classes. Furthermore, Mr. Mokhles claimed that even UTM Digital staff had a machine in front of the offices of UTM Digital just to scan the staffs' attendances. Unfortunately, UTM is unlikely to produce the same system for students due to budget constraints, even though it is possibly one of the best ideas to ensure all students attended the classes.