

# **Experiment Design**

## **MIST SMART VOTING SYSTEM**

**Group No. 02**

### **Group Members Name**

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## Introduction:

The application's performance from the usability perspective was measured using the Pass/Fail criteria from the Table 3 apparently. This section will briefly discuss the participants' profile, the study procedure, and the results of the evaluation.

## Task Selection:

The entire system can be provided for experimenting or 4 specific tasks can be selected.

Task 1: Authentication of the system

Task 2: Accuracy of fingerprint

Task 3: Preventing Same Voter to Cast Vote in an Event More Than One Time

Task 4: Synchronizing Fingerprint Sensor with Vote Casting

## Participant's profile:

To perform the evaluation test, 15 participants (10 male, 5 female) of different age groups ranging from 22 to 55 years of age were recruited. All participants were familiar with the internet and smartphone. None of them has used 'MSVS' and any other application related to the online voting system.

## Initial Briefing:

All test sessions were conducted in the participants' own houses. For each test-session, the following steps were followed. At first, participants were briefed on the purpose of this study in an online session, and a participant consent form was signed and collected via email. Then, the app was demonstrated and asked them to explore the app for 5-8 minutes. After that, the participants participated in an online voting event. Finally, the participants were asked to provide their opinion on the Google form questionnaires.

## Data Collection:

While they were using the system, close observation was done in order to collect required data for different parameters through which it will be decided how effective and usable our developed system is for the context it has been developed. We have used Google form to arrange the pre questionnaires and shared the form to the participant's via social platforms (facebook, viber, whatsapp).

## Pre Questionnaires:

These are the pre questionnaires, asked to the participants. Among the 15 participants, 4 participant's responses are given below.

Question	Answer	Participant's name
Is the existing (ballot paper) voting system efficient?	No	Rohit Zaman Tusher
Can the existing system prevent false voting?"	No	
Are confidentiality and integrity maintained in the existing system?"	No	
Do you think, your time is utilized best while giving vote?"	No	
Is a peaceful environment preserved in a voting event?"	No	

Question	Answer	Participant's name
Is the existing (ballot paper) voting system efficient?	No	Samiha Raisa Zaman
Can the existing system prevent false voting?"	No	
Are confidentiality and integrity maintained in the existing system?"	No	
Do you think, your time is utilized best while giving vote?"	Yes	
Is a peaceful environment preserved in a voting event?"	No	

Question	Answer	Participant's name
Is the existing (ballot paper) voting system efficient?	No	Nafisa Tabassum
Can the existing system prevent false voting?"	No	
Are confidentiality and integrity maintained in the existing system?"	No	
Do you think, your time is utilized best while giving vote?"	No	
Is a peaceful environment preserved in a voting event?"	No	

Question	Answer	Participant's name
Is the existing (ballot paper) voting system efficient?	No	Sabrina Afrin Onnee
Can the existing system prevent false voting?"	No	
Are confidentiality and integrity maintained in the existing system?"	No	
Do you think, your time is utilized best while giving vote?"	No	
Is a peaceful environment preserved in a voting event?"	No	

## Post Questionnaires:

These are the post questionnaires, asked to the participants to evaluate the 'MSVS' application. Among the 15 participants, 4 participant's responses are given below.

Question	Answer	Participant's name
In the authentication system, was the barcode scan time more than 5 seconds?	No	Rohit Zaman Tusher
Are the number of attempts greater than 1 for barcode scanning?	Yes	
For the fingerprint sensor, was the cross matching time more than 5 seconds?	No	
Are the number of attempts greater than 1 for fingerprint authentication?	Yes	
Can you cast vote in the same event more than one time?	No	
Was a successful pop-up message shown after the fingerprint was cross matched correctly?	Yes	

Question	Answer	Participant's name
In the authentication system, was the barcode scan time more than 5 seconds?	Yes	Nafisa Tabassum
Are the number of attempts greater than 1 for barcode scanning?	No	
For the fingerprint sensor, was the cross matching time more than 5 seconds?	No	
Are the number of attempts greater than 1 for fingerprint authentication?	No	
Can you cast vote in the same event more than one time?	No	
Was a successful pop-up message shown after the fingerprint was cross matched correctly?	Yes	

Question	Answer	Participant's name
In the authentication system, was the barcode scan time more than 5 seconds?	No	Sabrina Afrin Onnee
Are the number of attempts greater than 1 for barcode scanning?	No	
For the fingerprint sensor, was the cross matching time more than 5 seconds?	No	
Are the number of attempts greater than 1 for fingerprint authentication?	Yes	
Can you cast vote in the same event more than one time?	No	
Was a successful pop-up message shown after the fingerprint was cross matched correctly?	Yes	

Question	Answer	Participant's name
In the authentication system, was the barcode scan time more than 5 seconds?	No	Samiha Raisa Zaman
Are the number of attempts greater than 1 for barcode scanning?	No	
For the fingerprint sensor, was the cross matching time more than 5 seconds?	No	
Are the number of attempts greater than 1 for fingerprint authentication?	No	
Can you cast vote in the same event more than one time?	No	
Was a successful pop-up message shown after the fingerprint was cross matched correctly?	Yes	

## Data Analysis:

The scores of the test analysis are shown in Figure 9. The resulting score and analysis, therefore, shows that the 'MSVS' application is usable and useful to the participants.

