Test Plan – Group 4

AUTOMATIC DOOR LOCK SYSTEM

Functionalities that we can check on our system

- Measure minimum response time between reading two authorized RFID tags.
- Measure the maximum distance that the RFID reader can detect the RFID tag
- Measure the minimum time taken to update the website in any attempt of access
- Measure the minimum response time between taking two authorized fingerprints
- Measure the maximum distance that the IR sensor can detect
- Discover maximum number of concurrent users that system can handle
- Track issues and bugs related to web application
- Form validation – Validity of passwords

What we check

- Measure minimum response time between reading two authorized RFID tags.
- Discover maximum number of concurrent users that system can handle
- Form validation – Validity of passwords

<u>What we don't check</u>

- Measure the maximum distance that the RFID reader can detect the RFID tag
- Measure the minimum time taken to update the website in any attempt of access
- Measure the minimum response time between taking two authorized fingerprints
- Measure the maximum distance that the IR sensor can detect
- Track issues and bugs related to web application

1. **Objective:** Measure minimum response time between reading two authorized RFID tags - Performance Testing

   Inputs: RFID tags and our system

   Measured Parameters: Response time

   Expected Output: Minimum response time

   Assumptions made:

   - We check 10 times and take response time at each time. And assume that minimum of those 10 is the minimum response time between reading two authorized RFID tags.
   - Assumed human errors at each time are same.

Testing Process: In the code take the started time when the LCD displays WELCOME and display the time in LCD display. Then take the end time when it again displays WELCOME and display the time in the display.

The difference will be the response time. Repeat this 10 times and take minimum response time from those 10.

2. **Objective:** Discover maximum number of concurrent users that system can handle – load testing for web application

   Inputs: web application of our system

   Measured Parameters: Maximum number of concurrent users that system can handle

   Assumptions made: The values depend on several factors like current server load, our internet speed, our CPU power etc. Hence, it's very unlikely that we will get the same results if these factors change. So, we assume that these factors do not get changed.

   Testing Environment: An environment that Current server load, internet speed, CPU power etc. kept nearly constant without any change.

   Method: Using the tool "Apache Jmeter" analyze the performance using throughput because throughput represents the ability of the server to handle the heavy load**.**

   We are doing a load analysis of our web site for a specific number of users.

Before testing our web application, we should determine-

- Normal Load: Average number of users visit the website
- Heavy Load: The maximum number of users visit the website
- What is our target in this test?

Here is the roadmap of how we are going to do the test,

1. Add Thread Group
2. Adding JMeter elements
3. Adding Graph result
4. Run Test and get the test result

3. **Objective:** Form validation – Validity of passwords – unit testing

Measured Parameters: Length of a password

Input	Expected Output
Password length < 6	Weak Password
6 < Password length < 10	Average Password
Password length > 10	Strong Password

Testing Process:

We add java script form validation to our web site so that it can handle the password length.