Test Strategy Document

Mosquito Corridors Identification and Visualization
Team 45

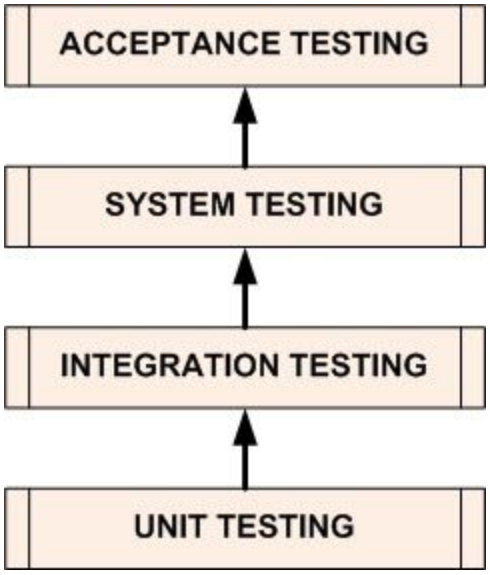
Scope

- The document is used by the team and also by the client to test and verify the
- features implemented.
- The document gets reviewed by the Team Members,Assigned TA and the Client.
- The implemented front end features such as buttons and text boxes need to be tested independently because they are the ones which help the user to interact with the system developed. So unit testing is performed on each of these.
- The UI and functionalities implemented need to be tested independently (i.e unit tested)
- Whenever integration is done, integration testing is performed so as to ensure that the components are integrated as expected.
- After each sprint the whole developed system needs to be tested.
- The Assigned TA and the client will approve this document.

Test Approach

- Process of testing
    - The framework followed is MERN stack,
        - The use cases related to backend were checked independently with the database (using implemented routes).
        - The use cases related to frontend are tested manually against all scenarios in initial phases.
        - Later the use cases related to frontend are tested using the unit tests written using the libraries jest, enzyme and react testing libraries.
        - Each of the tasks is tested independently and then tested after being integrated.
        - The app developed is also tested after each sprint.(As per agile)

- Testing levels
    - **Unit testing** - Each of the individual tasks are checked individually(Both frontend and backend).
    - **Integrated testing** - Each of the tasks after being integrated were tested again so as to check whether the integrated components were working as per needs.
    - **System Testing** - The whole system was tested after each sprint or before each release of the version.
    - **Acceptance Testing** - The system developed was constantly checked by the client to ensure that the developed system was in the right track and as per needs asked by the client.



- Roles and responsibilities of each team member
    - **Kalyan Adithya** (2018101106)
        - Mobile app development for public users.
        - Integration of mobile app with web app.
        - Front end development of Web app.
    - **Abhishek** (2018101028)
        - Sensor visualizations on Map.
        - Logic development for the visualization of paths.
        - Visualization of paths and location of users.
    - **Jaiwanth** (2018101110)
        - Research on the Map Visualization.
        - Integration of Map with the web app.
        - Data scraping from ThingSpeak server.

- **Shashank** (2018111016)
  - Development of backend and its integration with frontend.
  - Handling activities related to database.
  - Testing of the App.

Test Environment

- Define the number of requirement and setup required for each environment
  - Environment 1 -
    - OS - Ubuntu
    - Browser - Chrome 80.0
    - Network - Lan Wifi setup/Mobile Hotspot
    - Web server - Local host
  - Environment 2 -
    - OS - Ubuntu
    - Browser - Firefox
    - Network - Lan Wifi setup/Mobile Hotspot
    - Web server - Local host
  - Environment 3 -
    - OS - Ubuntu
    - Browser - Opera
    - Network - Lan Wifi setup/Mobile Hotspot
    - Web server - Local host

  The setup required for above environments remains same and it is:

  1. Make sure that the required OS exists.
  2. Use the browser mentioned if it's already installed or install the respective browser.

  Required setup to run the webapp on local server:

  1. Reach out the webapp directory in a terminal tab and client directory in another tab.
  2. Run npm install in both the tabs.
  3. Run npm start in both the tabs.

Testing Tools

- The testing scripts are written in js using the libraries jest, enzyme and react-testing libraries.

Use Cases

No.	*User Case Name*	*Description*
1	Login/Logout	User can login and logout of their own accounts.
2	Map View	User can view the mosquito corridors on the map.
3	Sensor management	User can or deactivate the sensors add/remove based on the requirements.
4	Export data	User can export the data collected from micro sensors.
5	Export Map	User can obtain a map of the mosquito corridor at any time.
6	Eradication technique	User is suggested an eradication technique and given a location for each corridor
7	Distress message	Users can ping the server in case of mosquito outbreak.
8	Sending notification	User receives a notification when they are in the vicinity of a mosquito corridor.
9	Register new monitor	User should be able to add a new monitor to the database.

10	Display targeted Video	User is shown a targeted video, picked from a database, on the mobile app. The videos are about mosquito eradication techniques and education of users.
11	Display targeted message	User of the mobile app is sent a targeted message.
12	Add new video	User is allowed to add a new video via URL to the database from which one is picked and sent to a mobile app.
13	Add new message	User is allowed to add a new text message to a pre-existing set of messages out of which one is picked and sent to the mobile app user.
14	Logic Builder	User can change the bounds of the parameters to incorporate in the logic
15	Disease prone area specification	User can report if the area is a specific disease prone area.

Test Cases

Test No. ID	Related Use case	Pre-conditions	Test Description (steps)	Expected Outcome
1	Login	None	Enter correct login information and clicks on submit button	the user is logged in and is displayed a welcome page
2	Login	none	The user enter wrong login details and clicks on submit button	the user is prompted a error message
3	Login	none	the user tries to access the logged in url without logging in	the user should not be given access
4	Logout	The user should be logged in	the logout should be clicked	the user should be logged out and redirected to the login page again
5	Map View	Have to be logged in as Admin or Monitor	the map was dragged and pinched	the map has to respond to the input given i.e. the map should move and resize accordingly
6	Map View	Have to be logged in as Admin or Monitor	a new sensor added to the database	the changes must reflected in the map
7	Map View	Have to be logged in as Admin or Monitor	when a distress message was sent by the user	the blip should shown on the map for 30 mins
8	Map View	Have to be logged in as Admin or Monitor	when the map view was clicked	the map has to be view with a certain zoom centered at IIIT-H as the project domain was restricted to IIIT-H
9	Map View	Have to be logged in as Admin or Monitor	when the map is opened	the map is opened the mosquito corridor paths should be rendered on the map
10	Distress Message	User must have a active session.	when the sos button is clicked	the server is pinged with the a sos report

11	Distress Message	User must have a active session.	when the sos button is clicked again within 30 mins	the user is displayed a error message that he has to wait for 30 mins before pinging the server again
12	Sensor Management	Have to be logged in as Admin	when the sensor management button is clicked on the navbar	the list of all the sensors should be viewed along with its location
13	Sensor Management	Have to be logged in as Admin	when the latitude and longitude of the sensor(within the range of IIIT-H campus) are entered and add sensor button is clicked	the sensor should be added into the sensor list
14	Sensor Management	Have to be logged in as Admin	when the latitude and longitude of the sensor(outside the range of IIIT-H campus) are entered and add sensor button is clicked	the user should be prompted to enter details within the expected range
15	Sensor Management	Have to be logged in as Admin	when the sensor delete button was clicked	the sensor is removed from the database
16	Sensor Management	Have to be logged in as Admin	when the sensor management button is clicked on the navbar	the macro weather data of the area under the project should be visible to the user
17	Disease Outbreak Report	User must have a active session.	The user selects the locations of the disease outbreak and the disease and clicks the submit button	the disease outbreak is reported to the server
18	Disease Outbreak Report	Should be logged in as Admin	The user clicks on the disease outbreak report button is the navbar	the user should be able to view all the disease cases
19	Disease Outbreak Report	User must have a active session.	The user report the disease again within a day	the user is prompted a error message
20	Add sensor	Should be logged in as Admin.	The user changes the location of the pointer to the place where sensor need to be added.	A form gets displayed with the latitude and longitude of the selected sensor location. The user need to enter the details of channel key and ID as per thingspeak.
21	Remove sensor	Should be logged in as Admin.	User clicks on the delete button attached to the deployed sensor.	The sensor gets deleted from the tabular view of sensors and also from the Map view.

22	Logic Builder	Should be logged in as Admin.	1)Click on the "Update logic" button. 2)Update the fields of logic,which one wants to update(as per range specified).Example:Change the range of temparatures or Humidity etc.. 3)Click on "Submit" button.	The paths get visualized on the map as per the logic developed based on the input attributes.
23	Logic Builder	Should be logged in as Admin.	1)Click on the "Update logic" button. 2)Update the fields of logic,which one wants to update(out of the range specified).Example:Change the range of temparatures or Humidity etc.. 3)Click on "Submit" button.	User get displayed with an error message that the values entered are out of range.
24	Regitering New Monitor	Should be logged in as admin.	1)Verify whether the Monitor can be trusted or not. 2)If the monitor can be trusted,then click on the "Register Monitor" button. 3)Enter the name and Email ID of the monitor. 4)Click on the "Submit" button.	1)A mail will be sent to the email entered. 2)After filling the required details the monitor gets registered.
24	Regitering New Monitor	Should be logged in as admin.	1)Verify whether the Monitor can be trusted or not. 2)If the monitor can be trusted,then click on the "Register Monitor" button. 3)Enter the name and Email ID (which was already used once) of the monitor. 4)Click on the "Submit" button.	User gets displayed with an error message that the email entered is already registered.
25	Suggestion of Eradication techniques.	Should be logged in as admin or monitor.	1)Hover on the sensors.	Eradication techniques get displayed on hovering a condusive sensor
26	Export Weather Data	Should be logged in as admin or monitor.	1)Click on the button "Export Weather Data". 2)User enters the valid from date and to date.	Data get exported in csv format.
27	Export Weather Data	Should be logged in as admin or monitor.	1)Click on the button "Export Weather Data". 2)User enters the invalid from date and to date.	User gets displayed with an error, that the dates entered are invalid.

28	Export Sensor Data	Should be logged in as admin.	1)User clicks export button of a particular selected sensor.	Sensor data gets exported in csv format.
29	Add new Message	Should be logged in as admin.	1)User clicks on the Add message option. 2)A popup gets displayed with a text box to enter the message	The message entered gets added to the database and gets displayed on the mobile app.
30	Add new Video	Should be logged in as admin.	1)User clicks on the Add video option. 2)A popup gets displayed with a text box to enter the url 3)User enters a valid url.	The entered url gets added into the database and the video corresponding to the url gets displayed on the mobile app.
30	Add new Video	Should be logged in as admin.	1)User clicks on the Add video option. 2)A popup gets displayed with a text box to enter the url 3)User enters a invalid url.	User gets displayed with an error, that the entered URl is invalid.
31	Display targeted message	User must have a active session.	Display of selected message from the database	User gets displayed with a message.
32	Display targeted Video	User must have a active session.	Display of video of selected url from the database	User gets displayed with a Video.
33	Notification alert	User must have a active session.	If the user is in the vicinity of the mosquito corridors,he gets an alert to his mobile.	User recieves an alert.
34	Forgot password	none	1)User clicks the forgot password option. 2)User gets a form asking for his username. 3)User gets a mail to his registered mail account.	On clicking the link sent to the mail, a page opens up which allows to set up a bew password.
35	Change Password	Should be logged in as admin or monitor.	1)User clicks on the change password. 2)User gets displayed with a popup to enter new password.	User password gets updated with the entered password.
36	Export Map	Should be logged in as admin or monitor.	1)User clicks on the Export Map.	Image of the current map gets exported to the user in png format.