USABILITY TESTING: STAFFGAUGE

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StaffGauge

- Web App for citizen scientists
- Upload staff gauge hydrology Data
  - Text: Manually
  - Picture
- Visualize data
  - Graphical view
- User
  - Research Scientist
  - Volunteers
Concern

- Fast
  - Task completion in less than 3 steps
- Simple
  - Comprehendible by any user
- Efficient
  - Function properly with fewest number of bugs
Environment Setup

- Device: Nexus 5
- Version: Android (4.4.2)
- Mobile Web Browser: Chrome
- Observation:
  - Notes
  - Video recording
- Location: Rekhi 323
- Total 6 users
Issues

- Older version of Android
  - Overlapping of buttons and text fields
  - Small font size
  - Small graph size
  - Double tap to submit

- No backend support
  - Email validity
  - Verify Graph and picture preview
Type of data collect

- **Pre-test questions**
  - Ever used any similar type of web application
  - Expectation from the app

- **Quantitative measurement**
  - Total time to complete task
  - Number of taps to recover
  - Time and steps to recover from an error
  - In case of failure, measure the percentage of task completed
  - Number of buttons/pages not used
  - Number of times the user needs assistance

- **Post test questions**
  - Task completion in fewest steps?
  - Likes and dislikes
  - Suggestions for improvement

- **Qualitative measurement**
  - User’s Facial expression
  - Spontaneous verbal expression
  - Level of attention towards the task
Pre Test Results

- Experience with similar app: 4/6
- Interest in testing:
  - Strongly agree: 3/6
  - Agree: 3/6
- Expectation from the app:
  - Good data entry UI
  - Interesting UI
  - Understand water level based on input
  - Not sure

![User's Smart Phone Experience Chart]
## Scenarios and Quantitative Measurement

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Task</th>
<th>Avg. total time (minutes)</th>
<th>Assistance</th>
<th>Avg. % of task completed</th>
<th>Unused Button/fields</th>
<th>Recovery time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign Up and Login</td>
<td>Task-1: Successfully create an account</td>
<td>&lt;8</td>
<td>2</td>
<td>0-50%</td>
<td>None</td>
<td>Quick</td>
</tr>
<tr>
<td></td>
<td>Task-2: Login with username and password</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upload text data manually</td>
<td>Task-1: Submit gauge reading and #</td>
<td>4-5</td>
<td>1</td>
<td>80%</td>
<td>None</td>
<td>Little slow</td>
</tr>
<tr>
<td></td>
<td>Task-2: Only see graphical view</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upload picture</td>
<td>Take picture</td>
<td>2-3</td>
<td>1</td>
<td>100%</td>
<td>None</td>
<td>Quick</td>
</tr>
<tr>
<td></td>
<td>Retake picture and upload</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Post Test Query Results

Average results:
Strongly Agree > Agree > Neutral > Disagree > Strongly disagree

- Easy to perform: Agree
- Enjoyed the app: Agree
- Use app again: Neutral
- Steps couldn’t be any shorter: Agree
Test Results

- Sign up is not directed to Sign-up page
  - Login and sign up in the same button
  - Sign up travels through the login page
  - Time consuming

- Password format can only be known if a mistake is made
  - Pop up message after submission

- Avoid ‘View Graph’s submit button
  - Tap back button
  - Think they’ve already submitted in the home page

- Attentive in performing task but reluctant to read the pop up messages
  - Skip useful info: time consuming
Test Results

- User reluctant to read the pop up messages
  - Skip useful info: time consuming

- For graph view directly taps the ‘graph view’ button
  - Does not insert 5 digit gauge #

- For graph view does not tap ‘view graph’ button
  - Taps the submit button after entering gauge #

- Did not understand graphical view
  - X-Y axis is not clear
  - Does not display user’s gauge # and reading
# Bug Report

<table>
<thead>
<tr>
<th>Bug #</th>
<th>Bug Name</th>
<th>Location</th>
<th># of Users</th>
<th>Bug Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Login without entering credentials</td>
<td>Login Page</td>
<td>2</td>
<td>Pressing Login button shows successful login even without entering Username &amp; password</td>
</tr>
<tr>
<td>2.1</td>
<td>Submit without gauge reading</td>
<td>Home Page</td>
<td>2</td>
<td>For manual input, can submit without entering gauge reading</td>
</tr>
<tr>
<td>2.2</td>
<td>Accept gauge # without verifying</td>
<td>Home Page</td>
<td>6</td>
<td>For manual input, can submit gauge # of any digit -&gt; No Checking</td>
</tr>
<tr>
<td>3.1</td>
<td>Retake picture direction</td>
<td>Picture Preview</td>
<td>6</td>
<td>Retake picture button directs to Home page instead of camera option</td>
</tr>
</tbody>
</table>
Suggestion

- Graph View -> Submit: Keep a message above the submit button
  - “To complete your submission please press submit”
  - Change Home page submit button name to ‘Upload’
- Display user’s gauge number and reading on the view graph page
- Direct the ‘Retake Picture’ button to the camera option instead of Home page
- After successful login display profile info (username) at the top
  - Confirmation of login
- Make separate buttons for ‘Login’ and ‘Sign up’
  - User familiarity
  - Reduce time and steps
- Password format should be mentioned above the password field
- Fix the bugs!!!!