

# System and Unit Testing Report - Rolli Polli

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## 1 System Test Scenarios

### 1.1 User Stories

1. As a user, I want to be able to create an account so that I can use the app (Sprint 1).
2. As a registered user, I want to be able to create polls for my community (Sprint 2).
3. As a registered user, I want to be able to visualize the poll data as bar graphs (Sprint 2).
4. As a registered user, I want to be able to see other people's polls (Sprint 2).
5. As a registered user, I want to be able to vote on the polls (Sprint 3).
6. As a registered user, I want to be able to see polls in my location (Sprint 3).
7. As a registered user, I want to be able to customize my user profile. (Sprint 4).
8. As a registered user, I want to be able to see comments on polls. (Sprint 4).
9. As a registered user, I want to be able to comment on polls. (Sprint 4).

### 1.2 Scenarios

1. Start polls app; click "Sign Up!" at bottom, and type:
  - Email = <george.h.gallup@protonmail.com>
  - Password = <GgHPass84>
  - Confirm Password = <GgHPass84>
  - Press the sign up button
  - User should see local polls screen and be registered.
2. Select floating button in bottom left with create poll icon and choose "Create global poll".

- A new window should pop up.
  - Type a poll question in the “Poll Question” text field at the top.
  - Reduce or increase the number of options with the plus or minus buttons.
  - For each potential choice, type the answer in the colored text boxes.
  - Select the check mark in the top right corner to publish the poll.
3. Press the Map icon tab to change tabs global poll feed.
    - User should see a preview of the results for every poll just to the right of the poll question.
    - Click on the poll to get an expanded view of the poll with more detailed results
  4. Go back to the global feed.
    - User should see a list of all global polls created.
  5. Click on any poll in the global feed.
    - Read the question and click on a colored button to vote on the poll.
  6. Go back to the global feed, and press the location icon tab.
    - User should see the tab switch to local polls with their location.
    - If polls exist in the user’s location they will see them.
    - If polls do not exist in the user’s location do the following:
      - Press the floating button in the bottom left and choose “Create global poll”
      - A new window should pop up.
      - Type a poll question in the “Poll Question” text field at the top.
      - Reduce or increase the number of options with the plus or minus buttons.
      - For each potential choice, type the answer in the colored text boxes.
      - Select the check mark in the top right corner to publish the poll.
  7. Return to the main menu; select the last tab in the bottom bar with the user icon.
    - User should see the page switch to show their profile.
    - Click on the icon
    - User should see a card slide in from the bottom.
    - Select new colors and an emoji to customize the user profile.
    - User should see their profile update in real-time.
    - Exit the card by either sliding the card down, or by pressing the back button.
  8. Return to the First tab on the bottom bar; click on a poll in either the global or local section.
    - Click on the comment button in the top right
    - User should see a live list of comments that automatically updates with new comments.
  9. Type a comment in the text bot at the bottom
    - Press the send button to publish the comment.
    - User should see their comment published in real-time.

## 2 Unit Tests

Backend Testing files can be found in `./testing-backend`.

Backend consists of firestore rules, so all unit tests are in typescript: `./testing-backend/firestore.test.ts`

Automated CI testing done using Github Actions: `./.github/workflows/testing-backend.yaml`

### 2.1 Unit Test List

- Read Poll with authentication
- Create valid poll (global)
- Create valid poll (local)
- Create invalid poll (missing ownerID)
- Create invalid poll (missing question)
- Create invalid poll (missing options)
- Create invalid poll (missing empty votes)
- Create invalid poll (missing createdAt)
- Create invalid poll (missing local/global)
- Create invalid poll (different owner)
- Create invalid poll (empty question)
- Create invalid poll (single option)
- Create invalid poll (zero options)
- Create invalid poll (already voted)
- Create invalid poll (client timestamped)
- Delete poll (author)
- Delete poll (unauthorized)
- Vote on poll (valid, first)
- Vote on poll (valid, update)
- invalid vote on poll (out of bounds)
- invalid vote on poll (negative)
- invalid vote on poll (impostor)
- invalid vote on poll (self-owned impostor)
- comment on poll (valid)
- comment on poll (valid, second level)
- comment on poll (valid, third level)

- invalid comment on poll (impostor)
- invalid comment on poll (empty)
- invalid comment on poll (missing top level parent)
- invalid comment on poll (missing second level parent)
- invalid comment on poll (missing poll)
- Read User with authentication
- Set User emoji
- Set User innerColor
- Set User outerColor
- Set User emoji (invalid)
- Set User innerColor (invalid)
- Set User outerColor (invalid)
- Delete User (disallowed)