# Sri Lanka Institute of Information Technology

# SE3050 – User Experience Engineering

# Milestone 07: Implementation

**Group:** Native Coders



IT21118340 Kumarathunga S. A. D. S.

IT21291364 Rashen W.G.M

IT21267772 Kumanayake I. A.

IT21388934 Siriwardhana S.M.R.R.

**Github Implementation**

**Github Link:** <https://github.com/IT21388934/TutorMe/>

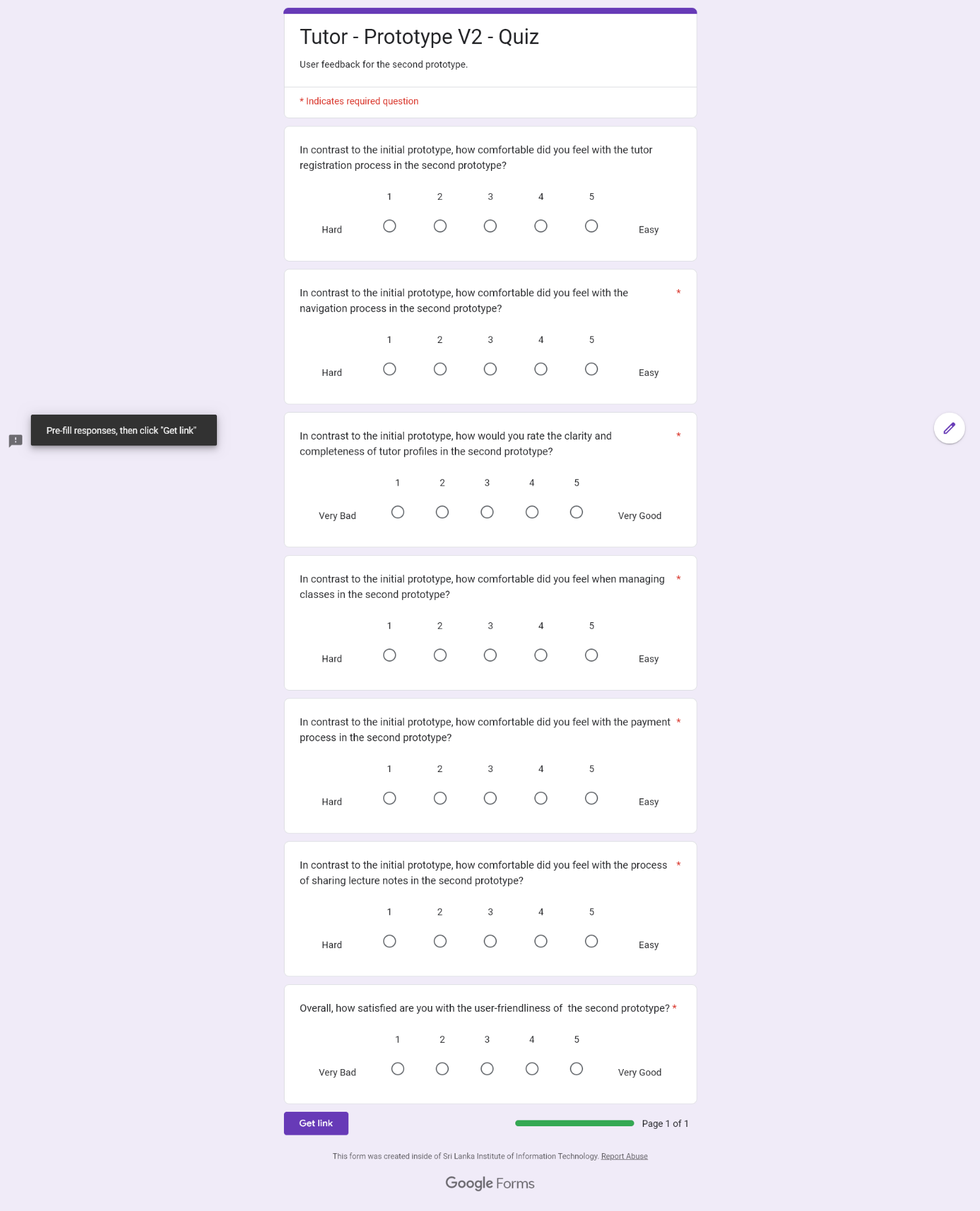
**Prototype Version 02**

**Full Prototype Link**

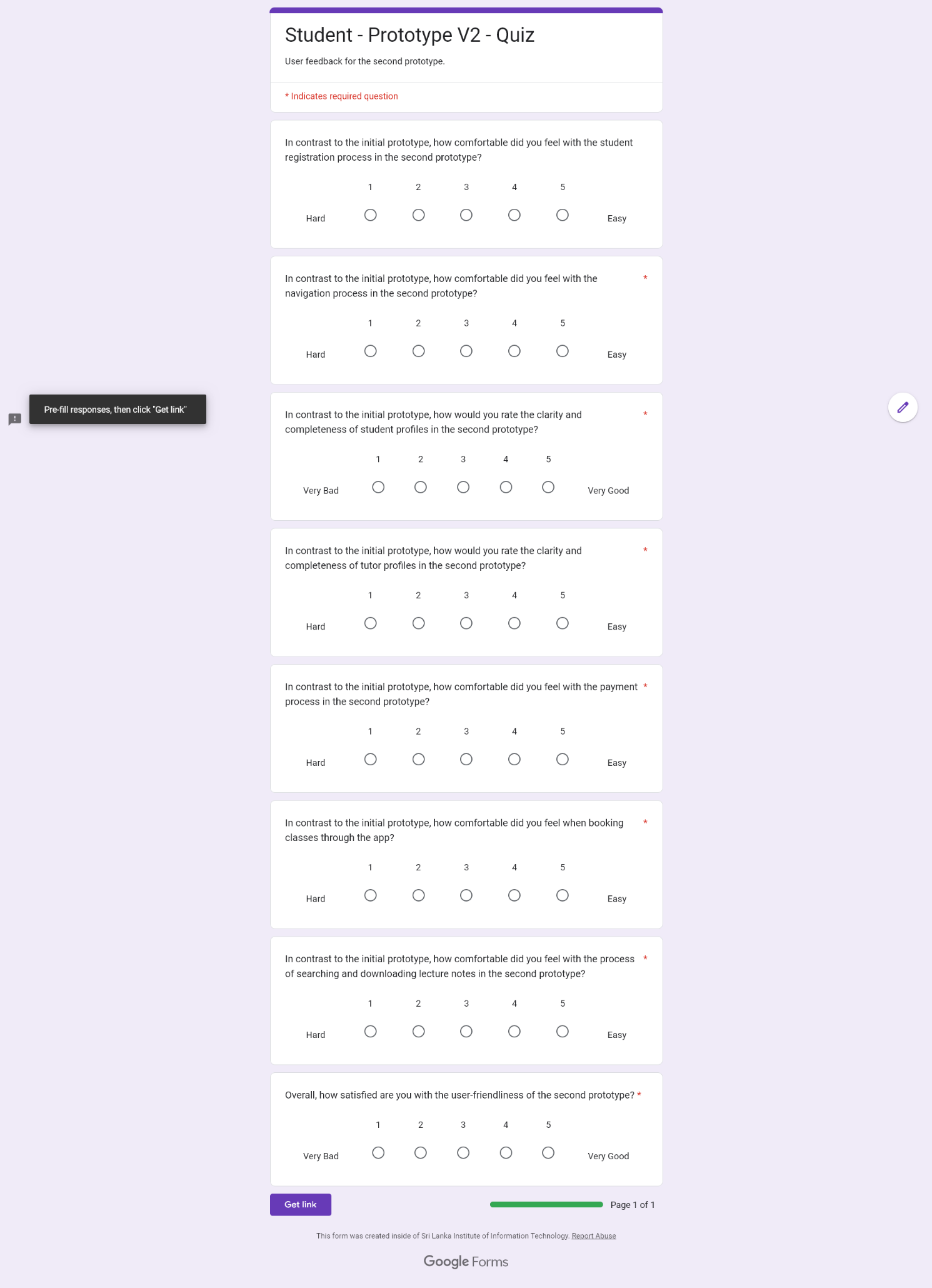
<https://www.figma.com/file/Usv4uPDQUBHi0N4bQVU3cG/TutorMe-(Version2)?type=design&mode=design&t=CKLuP4SFwCJChV6U-1>

**Prototype Version 02 – User Feedback**

**Tutor Questionnaire**

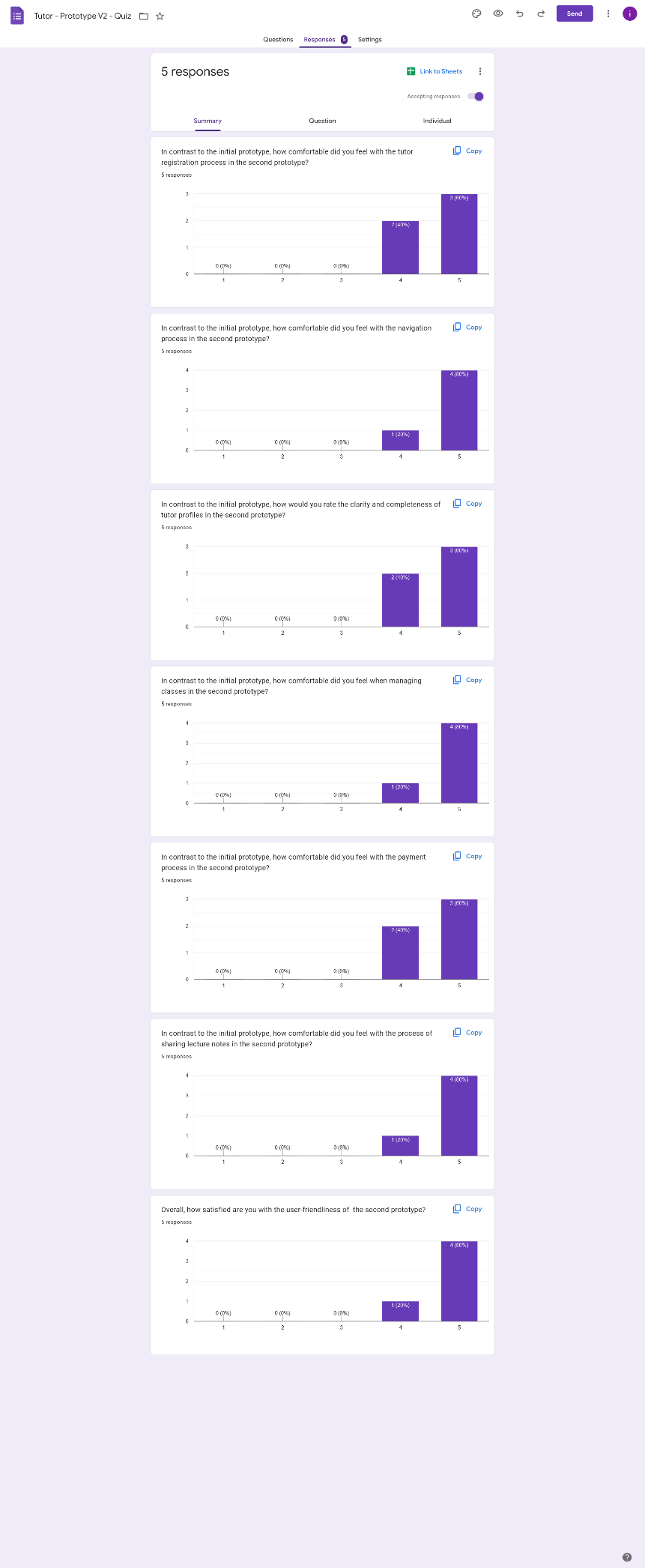


**Student Questionnaire**

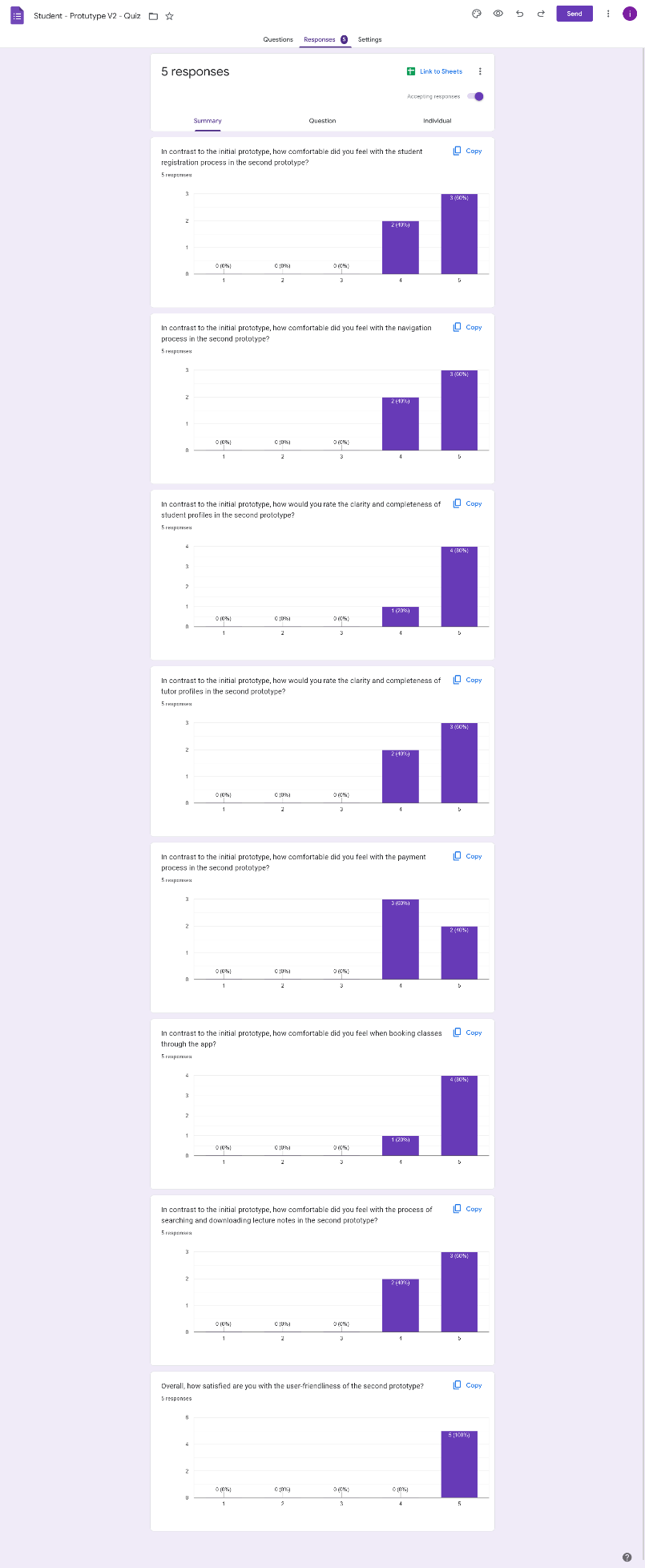


**Plan for Data Analysis**

**Tutor Questionnaire - Results**



**Student Questionnaire - Results**



**Test Plan**

1. **Introduction**

* **Purpose**: To ensure the reliability, functionality, and performance of the application.
* **Scope**: This test plan covers functional, usability, security, and performance testing.

1. **Test Objectives**

* Verify that the app functions as intended.
* Identify and rectify any usability issues.
* Ensure the app is secure and data is protected.
* Assess the app's performance under various conditions.

**3. Test Environments**

* Devices: Android and iOS smartphones
* Operating Systems: iOS 14 and later, Android 10 and later
* Network: Different network conditions (Wi-Fi, 4G, 3G)
* Various screen sizes and resolutions

**4. Test Cases**

**4.1. Functional Testing**

|  |  |
| --- | --- |
| **Function** | **Task** |
| Login and Registration | * Verify that users can register with valid credentials. * Ensure users can log in using registered credentials. * Test for password reset functionality. |
| Profile Management | * Check if users can update their profiles (name, profile picture, etc.). * Verify that profile information is displayed correctly. |
| Class Management | * Verify that tutors can create new classes, specifying details such as subject, date, time, and duration. * Verify that tutors can update class details or cancel classes if necessary. |
| Class Search and Selection | * Test search functionality based on subjects and categories. * Ensure tutors' profiles display accurate information (experience, reviews). |
| Session Booking and Management | * Confirm that users can schedule and manage sessions with tutors. * Verify that sessions are added to both user's and tutor's calendars. |
| Payment Integration | * Test payment process for session booking, including adding/removing payment methods. * Verify that tutors can initiate withdrawal requests for their earnings. * Ensure that tutors can view their withdrawal history, including approved, pending, and declined withdrawals. * Verify that payments are processed securely, and receipts are generated. |
| Feedback and Rating System | * Test the ability to provide feedback and ratings after sessions. * Verify that feedback and ratings are displayed on tutors' profiles. |
| Study Materials Management | * Verify that tutors can upload study materials (PDFs, documents) to the app. * Confirm that students can access study materials shared by tutors. * Test downloading and viewing of study materials to ensure compatibility. |
| Study Material Search | * Test the search functionality to find study materials by subject, topic, or tutor. * Verify that search results are accurate and relevant. |

**4.2. Usability Testing**

* Assess the user interface for intuitiveness and ease of use.
* Verify accessibility and compatibility with various devices.
* Evaluate the app's response time for different actions.
* Check if the app provides clear instructions and feedback to users.

**4.3. Security Testing:**

* Verify data encryption during transmission.
* Ensure secure storage of user data.
* Evaluate user authentication and authorization mechanisms.

**4.4. Performance Testing:**

* Measure app performance under normal network conditions.
* Test app responsiveness and loading times.
* Evaluate app behavior under heavy loads and concurrent users.
* Assess battery and memory usage during prolonged use.

**5. Test Execution**

|  |  |
| --- | --- |
| **Test case ID:** 001 | **Test designed by:** Rashen W.G.M |
| **Test title:** Testing the Tutor Registration functionality | **Test designed day:** 25/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Rashen W.G.M |
| **Module name:** Login and Registration | **Test executed day:** 27/10/2023 |
| **Description:** Tutor details are saved only if they pass all validations | |
| **Preconditions (if there are any):** None | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> New user? Sign up -> As Tutor -> Enter details -> Sign up | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 1.1 | First name: Dulaj  Last name: Rathnayake  Email: dulaj.r@gmail.com  Contact number: 0781231235  Password: dulaj123  Confirm password: dulaj12345 | Display an error message “Passwords do not match” | Display an error message “Passwords do not match” | Pass | All the fields are required, and passwords should match |
| 1.2 | First name: Dulaj  Last name: Rathnayake  Email: dulaj.r@gmail.com  Contact number: 0781231235  Password: dulaj123  Confirm password: dulaj123 | Registration successful and navigate to the tutor home | Registration successful and navigate to the tutor home | Pass | All the fields are required, and passwords should match |

|  |  |
| --- | --- |
| **Test case ID:** 002 | **Test designed by:** Rashen W.G.M |
| **Test title:** Testing the Tutor Update Profile functionality | **Test designed day:** 25/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Rashen W.G.M |
| **Module name:** Profile Management | **Test executed day:** 27/10/2023 |
| **Description:** Tutor details are saved only if they pass all validations | |
| **Preconditions (if there are any):** Tutor should be logged into the app with valid credentials | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Profile -> Edit Profile -> Enter details -> Update Profile | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 2.1 | First name: Dulaj  Last name: Rathnayake  Email: dulaj.r@gmail.com  Contact number: 0781231235  Gender: male  DOB: 12/12/2000  Address: 12/A, Galle  Student Id: BM13232243  Year: 3  Semester: 2  Faculty: Computing  Specialization: Data Science | Display an error message “Please enter a valid student ID number” | Display an error message “Please enter a valid student ID number” | Pass | All the fields are required |
| 2.2 | First name: Dulaj  Last name: Rathnayake  Email: dulaj.r@gmail.com  Contact number: 0781231235  Gender: male  DOB: 12/12/2000  Address: 12/A, Galle  Student Id: IT21246692  Year: 3  Semester: 2  Faculty: Computing  Specialization: Data Science | Display a successful toast message “Profile updated” | Display a successful toast message “Profile updated” | Pass | All the fields are required |

|  |  |
| --- | --- |
| **Test case ID:** 003 | **Test designed by:** Siriwardhana S.M.R.R. |
| **Test title:** Testing the Add Class functionality | **Test designed day:** 26/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Siriwardhana S.M.R.R. |
| **Module name:** Class Management | **Test executed day:** 28/10/2023 |
| **Description:** Class details are saved only if they pass all validations | |
| **Preconditions (if there are any):** Tutor should be logged into the app with valid credentials | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Home -> My Classes -> Add Class -> Enter details -> Submit | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 3.1 | Title: Object Oriented Programming  Description:  Category: Computing  Tags: oop, ooc  Price: 3000  Duration: 2  Time slots: Monday(12.30 – 2.30) | Display an error message “Class description is required” | Display an error message “Class description is required” | Pass | All the fields are required |
| 3.2 | Programming  Description: Unleash the power of OOP and take your coding skills to the next level with our new OOP class.  Category: Computing  Tags: oop, ooc  Price: 3000  Duration: 2  Time slots: Monday(12.30 – 2.30) | Display a successful toast message “Class added” | Display a successful toast message “Class added” | Pass | All the fields are required |

|  |  |
| --- | --- |
| **Test case ID:** 004 | **Test designed by:** Siriwardhana S.M.R.R. |
| **Test title:** Testing the Update Class functionality | **Test designed day:** 26/10/2023 |
| **Test priority (High/Medium/Low):** Medium | **Test executed by:** Siriwardhana S.M.R.R. |
| **Module name:** Class Management | **Test executed day:** 28/10/2023 |
| **Description:** Class details are saved during the update process only if they pass all validations | |
| **Preconditions (if there are any):** Tutor should be logged into the app with valid credentials | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Home -> My Classes -> Select Class -> Edit -> Enter details -> Update | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 4.1 | Title: Object Oriented Programming  Description: OOP for beginners.  Category: Computing  Tags: oop, ooc  Price: 3000  Duration: 2  Time slots: | Display an error message “One or more time slot is required” | Display an error message “One or more time slot is required” | Pass | All the fields are required |
| 4.2 | Programming  Description: OOP for beginners.  Category: Computing  Tags: oop, ooc  Price: 3000  Duration: 2  Time slots: Tuesday(14.30 – 16.30), Friday (13.30 – 15.30) | Display a successful toast message “Class updated” | Display a successful toast message “Class updated” | Pass | All the fields are required |

|  |  |
| --- | --- |
| **Test case ID:** 005 | **Test designed by:** Kumanayake I. A. |
| **Test title:** Testing the Request Session functionality | **Test designed day:** 26/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Kumanayake I. A. |
| **Module name:** Session Booking and Management | **Test executed day:** 28/10/2023 |
| **Description:** A session request can be made only if the user provides correct details | |
| **Preconditions (if there are any):** Student should be logged into the app with valid credentials | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Home -> Search -> Select class -> Request Session -> Enter details -> Submit | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 5.1 | Date: 31/10/2023  Time slot: 12.30 – 14.30  Reason:  Number of students: 2  Mode: Online | Display a red color asterisk in front of reason label to indicate it is required | Display a red color asterisk in front of reason label to indicate it is required | Pass | All the fields are required |
| 5.2 | Date: 31/10/2023  Time slot: 12.30 – 14.30  Reason: Need assistance with OOP concepts for the upcoming exam  Number of students: 2  Mode: Online | Display a successful toast message “Session request made” | Display a successful toast message “Session request made” | Pass | All the fields are required |

|  |  |
| --- | --- |
| **Test case ID:** 006 | **Test designed by:** Kumanayake I. A. |
| **Test title:** Testing the Make Payment functionality | **Test designed day:** 26/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Kumanayake I. A. |
| **Module name:** Session Booking and Management | **Test executed day:** 28/10/2023 |
| **Description:** A payment can be made only if the user provides valid card details | |
| **Preconditions (if there are any):** Student should be logged into the app with valid credentials. A previous session requested by the student should be accepted by the tutor. | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Profile -> My Sessions -> Filter by “accepted” status -> Select class -> Pay | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 6.1 | Card number: 4242424242424242  Expiration: 6/22  CVC: 333 | Display an error message “Your card’s expiration year is invalid” | Display an error message “Your card’s expiration year is invalid” | Pass | All the fields should be valid |
| 6.2 | Card number: 4242424242424242  Expiration: 8/24  CVC: 333 | Display a successful toast message “Payment successful” | Display a successful toast message “Payment successful” | Pass | All the fields should be valid |

|  |  |
| --- | --- |
| **Test case ID:** 007 | **Test designed by:** Kumarathunga S. A. D. S. |
| **Test title:** Testing the Add Study Material functionality | **Test designed day:** 26/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Kumarathunga S. A. D. S. |
| **Module name:** Study Materials Management | **Test executed day:** 28/10/2023 |
| **Description:** Study material can be added only if all the details are provided | |
| **Preconditions (if there are any):** Tutor should be logged into the app with valid credentials | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Profile -> Study Materials -> Add Study Material -> Enter details -> Submit | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 7.1 | Title: English Grammar  Description:  Category: English  Document: EnglishShortNote.pdf | Display an error message “Description is required” | Display an error message “Description is required” | Pass | All the fields are required |
| 7.2 | Title: English Grammar  Description: English grammar notes  Category: English  Document: EnglishShortNote.pdf | Display a successful toast message “Study Material added” | Display a successful toast message “Study Material added” | Pass | All the fields are required |

|  |  |
| --- | --- |
| **Test case ID:** 008 | **Test designed by:** Kumarathunga S. A. D. S. |
| **Test title:** Testing the Download Study Material functionality | **Test designed day:** 26/10/2023 |
| **Test priority (High/Medium/Low):** High | **Test executed by:** Kumarathunga S. A. D. S. |
| **Module name:** Study Materials Management | **Test executed day:** 28/10/2023 |
| **Description:** Study material can be downloaded only if the download location is selected. | |
| **Preconditions (if there are any):** Student should be logged into the app with valid credentials | |
| **Dependencies (if there are any):** None | |
| **Test steps:** Splash screen -> Login -> Home -> Study Materials -> Select Study Material -> Download | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Test Inputs** | **Expected Output** | **Actual Output** | **Result**  **(Pass/Fail)** | **Comments** |
| 8.1 | - | Display an error message “Please select a download location” | Display an error message “Please select a download location” | Pass | Download location should be selected |
| 8.2 | Select a download location | Display a successful toast message “Study Material downloaded” | Display a successful toast message “Study Material downloaded” | Pass | Download location should be selected |

**6. Test Results**

|  |  |  |
| --- | --- | --- |
| **User** | **Test case** | **Result** |
| Student | Registration | Checkmark with solid fill |
| Login | Checkmark with solid fill |
| Search class | Checkmark with solid fill |
| View class details | Checkmark with solid fill |
| Request Session | Checkmark with solid fill |
| View my sessions | Checkmark with solid fill |
| Filter sessions based on status | Checkmark with solid fill |
| View session details | Checkmark with solid fill |
| Edit session (only for pending sessions) | Checkmark with solid fill |
| Cancel session (only for pending sessions) | Checkmark with solid fill |
| Pay for accepted session | Checkmark with solid fill |
| Rate session (only for completed sessions) | Checkmark with solid fill |
| Search study materials | Checkmark with solid fill |
| Preview study material | Checkmark with solid fill |
| Download study material | Checkmark with solid fill |
| Edit profile | Checkmark with solid fill |
| Logout | Checkmark with solid fill |
| Tutor | Registration | Checkmark with solid fill |
| Login | Checkmark with solid fill |
| View my classes | Checkmark with solid fill |
| Add class | Checkmark with solid fill |
| Edit class | Checkmark with solid fill |
| Delete class | Checkmark with solid fill |
| Filter session requests | Checkmark with solid fill |
| View session request | Checkmark with solid fill |
| Accept session request (only for pending sessions) | Checkmark with solid fill |
| Reject session request (only for pending sessions) | Checkmark with solid fill |
| Send session information (location/link) (only for booked sessions) | Checkmark with solid fill |
| View personal calendar | Checkmark with solid fill |
| Add calendar event | Checkmark with solid fill |
| Edit calendar event | Checkmark with solid fill |
| Delete calendar event | Checkmark with solid fill |
| View my study materials | Checkmark with solid fill |
| Search study material | Checkmark with solid fill |
| Add study material | Checkmark with solid fill |
| View study material | Checkmark with solid fill |
| Edit study material | Checkmark with solid fill |
| Delete study material | Checkmark with solid fill |
| View wallet | Checkmark with solid fill |
| View payment methods | Checkmark with solid fill |
| Add payment method | Checkmark with solid fill |
| Edit payment method | Checkmark with solid fill |
| Delete payment method | Checkmark with solid fill |
| Make a withdrawal | Checkmark with solid fill |
| View past transactions | Checkmark with solid fill |
| Edit profile | Checkmark with solid fill |
| Logout | Checkmark with solid fill |

* The user interface of the app was intuitive and easy to use. Test users navigated through the app without significant issues, finding features and functions effortlessly.
* The app was accessible and compatible with a wide range of devices (iOS and Android smartphones). No major compatibility issues were identified.
* The app demonstrated satisfactory response times, with an average of 2 seconds, for various actions, such as loading pages, sending messages, and accessing study materials. Users did not experience excessive delays.
* The app provided clear and user-friendly instructions and feedback to users. Users received informative messages and prompts, enhancing their understanding of app features and actions.
* User data was securely stored, and no vulnerabilities related to data storage were identified. Data was protected against unauthorized access.
* User authentication and authorization mechanisms were effective and well-implemented. Users could access their accounts securely and only perform authorized actions.
* The app's performance under normal network conditions was satisfactory. Users experienced minimal issues related to network performance.
* The app performed well even under heavy loads and concurrent users. It showed scalability and maintained reasonable response times.
* The app's battery and memory usage during prolonged use were within acceptable limits. Users did not report excessive battery drain or memory-related issues.

**7. Conclusion**

Although the initial testing has yielded positive results in terms of functionality, usability, security, and performance, it's important to note that software testing is an ongoing process. Further testing can be performed to continually enhance and validate the app's functionality to ensure it meets the intended standards and requirements.