**STP Document**

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**Planned Schedule**

|  |  |  |
| --- | --- | --- |
| A step in the project process | Start date | End date |
| Preparation of STP document | **26.02.2024** | **26.02.2024** |
| Preparation of STD document | **26.02.2024** | **26.02.2024** |
| Round of tests #1 | **27.02.2024** | **27.02.2024** |
| Round of tests #2 | **27.02.2024** | **27.02.2024** |
| Round of tests #3 | **27.02.2024** | **27.02.2024** |
| Round of tests #4 | **27.02.2024** | **27.02.2024** |
| Round of tests #5 | **28.02.2024** | **28.02.2024** |
| Round of tests #6 | **28.02.2024** | **28.02.2024** |
| Round of tests #7 | **28.02.2024** | **28.02.2024** |
| Round of tests #8 | **28.02.2024** | **28.02.2024** |
| Round of tests #9 | **28.02.2024** | **29.02.2024** |
| Round of tests #10 | **29.02.2024** | **29.02.2024** |

**Purpose Of This Document**

The purpose of the document is to define a framework program for testing This framework plan will include all relevant topics for planning and performing the tests, such as the test topics and types of tests, the schedule, and the planned work method for testing the system.

The document will also be used for writing a detailed test plan (STD) in which the various tests will be detailed step by step. After that, the tests will be carried out according to the instructions in this document.

**Description Of the YouTube**

YouTube is a globally renowned online video-sharing platform that serves as a dynamic ecosystem for content creators, viewers, and advertisers. Established in 2005, its primary purpose is to enable users to upload, share, and discover a vast array of videos, ranging from entertainment and education to news and personal vlogs. This platform has evolved into a multifaceted system, fostering creativity, connecting communities, and offering diverse content to a global audience.

**Purpose:** YouTube's primary purpose is to provide a user-friendly platform for content creators to share videos with a broad audience. This includes individuals, businesses, and organizations aiming to communicate, entertain, educate, or share their unique perspectives. The platform facilitates a democratic approach to content distribution, allowing anyone with internet access to become a creator and build a following.

**Key Features and Functions:**

1. **Content Upload:** Users can upload videos, ranging from short clips to feature-length films, covering an extensive array of topics.
2. **Viewing and Streaming:** YouTube allows users to watch videos on-demand, providing a vast library of content across genres.
3. **Subscription and Notifications:** Viewers can subscribe to channels, enabling them to receive notifications about new content from their favorite creators.
4. **Interaction and Engagement:** Users can like, dislike, comment, and share videos, fostering interaction between creators and their audience.
5. **Monetization:** Content creators have the opportunity to monetize their videos through ad revenue, channel memberships, and Super Chat during live streams.
6. **Live Streaming:** Creators can engage with their audience in real-time through live streaming, enhancing the sense of community.
7. **Analytics and Insights:** YouTube provides detailed analytics for creators to track the performance of their content, audience demographics, and engagement metrics.

**Community Features:** Creators can use community posts, stories, and other features to connect with their audience beyond videos.

**Stakeholders:**

1. **Content Creators:** Individuals, influencers, businesses, and organizations creating and uploading videos to share their expertise, creativity, or entertainment.
2. **Viewers:** People of all ages and interests who consume content on YouTube for entertainment, education, information, and social connection.
3. **Advertisers:** Businesses and marketers leverage YouTube's extensive reach to promote products and services through ads displayed before, during, or after videos.
4. **Educators:** Teachers and educational institutions use YouTube as a supplementary tool for delivering educational content.
5. **Entertainment Industry:** Musicians, filmmakers, and artists utilize YouTube as a platform to showcase their talents and connect with a global audience.

**Glossary and Abbreviations**

**Glossary**

* GUI (Graphical User Interface): The design of user interfaces based on specified requirements.
* Functional Testing: Verification that fundamental system functions operate correctly.
* Maintenance Testing: Examination of the functionality of a modified system following changes, updates, or alterations in the working environment.
* STP (System Test Plan): A comprehensive project planning document encompassing strategy, schedule, and topic tree.
* STD (System Test Design): Detailed documentation outlining the testing plan.
* STR (System Test Results): A concise document summarizing test results after three cycles.
* Traceability Matrix: A document that correlates any two baselined documents that require a many-to-many relationship to determine the completeness of the relationship.

**Abbreviations**

* QA: Quality Assurance
* CEO: Chief Executive Officer
* HR: Human Resources

**Testing Plan**

The testing team will communicate the requirements to the development team based on the planned tests. The development team will work according to these requirements to maximize efficiency.

**Resources:** 1 tester will be assigned to this project.

**Hardware Needs:**

1. **Computers:**

* High-performance desktops or laptops to run test scripts and perform manual testing.

1. **Network Equipment:**

* Routers and switches to simulate different network conditions for testing YouTube's performance under various network scenarios.

1. **Virtual Machines:**

* Set up virtual machines for testing on different operating systems and browser combinations.

**Software Needed:**

1. **Operating Systems:**
   * Install and configure operating system for testing, : Windows.
2. **Browsers:**
   * Latest versions of popular browsers (Google Chrome, Microsoft Edge, Safari) for cross-browser compatibility testing.
3. **Mobile Emulators/Simulators:**
   * Emulators or simulators to test YouTube’s mobile app on different devices and screen sizes.
4. **Automation Testing Tools:**
   * Selenium and Selenium Grid for automating functional tests across web platforms.
5. **Database Management System:**
   * Database systems (MySQL, PostgreSQL) for testing YouTube's data handling and retrieval functionality.
6. **Test Management Tools:**
   * Test case management tools (e.g., **TestRail, Jira**) to organize, execute, and track test cases.

Before the start of testing rounds, **functional tests** will be performed, including:

1. **Unit Testing:** To test individual units or components of a software application.
2. **Sanity Testing:** To verify that the most important functionalities of a software application work correctly.
3. **Integration Testing:** To verify the interactions and interfaces between different components or systems within the application.
4. **Regression Testing:** To ensure that new code or changes do not affect the existing functionality of the software.
5. **API Testing:** To validate the functionality of an API by testing its endpoints and request-response mechanisms.
6. **UI Testing:** To validate that the user interface elements and interactions function correctly according to the design.
7. **End-to-End Testing:** To evaluate the entire software system's functionality from start to finish, simulating real user scenarios and interactions.

Afterwards, the following **non-functional tests** will be conducted including:

1. **Performance Tests (Load + Stress + Volume):** they assess how well a system performs under various conditions, including heavy loads, stressful situations, and large data volumes.
2. **Upgrade and Installation Test:** Upgrade and installation tests verify the smooth installation of software upgrades and updates, ensuring that the system remains stable and functional.
3. **Recovery Tests:** they assess how well a system can recover from failures including data loss or system crashes.
4. **Localization and Globalization Testing:** Localization testing verifies that a software application adapts to specific regional or cultural requirements, while globalization testing ensures its compatibility with diverse international settings.
5. **Usability Testing:** evaluates the user friendliness and overall user experience of a software application to ensure it meets user expectations.
6. **Compatibility Testing:** Compatibility testing ensures that a software application works seamlessly across different devices, browsers, operating systems.

**Starting and exiting Criteria**

* **Criteria for starting the tests:**
* 100% of planned sanity tests were carried out and passed successfully.
* 100% of planned functional and non-functional test cases have been created and reviewed.
* A traceability matrix is established, linking each test case to specific requirements.
* The testing environment is prepared and verified.
* Sufficient and accurate test data for both positive and negative scenarios is available.
* The test plan has been reviewed and approved.
* **Completion/Release Criteria:**
* 100% of planned functional and non-functional tests have been executed, and results have been documented.
* 100% of test cases passed successfully.
* All critical bugs have been fixed.
* The remaining bugs are at low severity levels, with no high-severity issues affecting functionality.

|  |  |  |
| --- | --- | --- |
| **Test Case ID** | **Test Case** | **Functionalities Covered** |
| 1 | test\_video\_playback | Video Playback |
| 2 | test\_full\_screen\_mode | Add Connections |
| 3 | test\_sound\_toggle | Sound Toggle |
| 4 | test\_theme\_change\_to\_dark | Theme Change (Dark) |
| 5 | test\_theme\_change\_to\_light | Theme Change (Light) |
| 6 | test\_miniplayer\_mode | Miniplayer Mode |
| 7 | test\_share\_video\_to\_whatsapp | Share Video to WhatsApp |
| 8 | test\_share\_video\_to\_facebook | Share Video to Facebook |
| 9 | test\_add\_videos\_to\_queue | Add Videos to Queue |

**Traceability table**

**Test Tree**

1. Video Playback

- Functional Testing:

a. Start Video

i. Verify successful start of the video.

ii. Verify ability to start the video multiple times.

- Non-Functional Testing:

b. Performance Testing:

i. Test the responsiveness of video playback under varying network conditions.

ii. Test video loading time.

2. Full Screen Mode

- Functional Testing:

a. Activate Full Screen

i. Verify successful activation of full screen mode.

b. Deactivate Full Screen

i. Verify successful deactivation of full screen mode.

- Non-Functional Testing:

c. Usability Testing:

i. Ensure user can easily toggle between full screen and normal mode.

ii. Test user satisfaction with full screen mode experience.

3. Sound Toggle

- Functional Testing:

a. Mute Video

i. Verify successful muting of the video.

b. Unmute Video

i. Verify successful unmuting of the video.

- Non-Functional Testing:

c. Accessibility Testing:

i. Ensure video controls are accessible to users with disabilities.

4. Theme Change

- Functional Testing:

a. Change Theme to Dark

i. Verify successful change to dark theme.

b. Change Theme to Light

i. Verify successful change to light theme.

- Non-Functional Testing:

c. Compatibility Testing:

i. Test theme change across different browsers and devices.

5. Miniplayer Mode

- Functional Testing:

a. Enter Miniplayer Mode

i. Verify successful activation of miniplayer mode.

b. Exit Miniplayer Mode

i. Verify successful exit from miniplayer mode.

- Non-Functional Testing:

c. Reliability Testing:

i. Test stability of miniplayer mode under heavy usage.

6. Share Video

- Functional Testing:

a. Share Video to WhatsApp

i. Verify successful sharing of video to WhatsApp.

b. Share Video to Facebook

i. Verify successful sharing of video to Facebook.

- Non-Functional Testing:

c. Security Testing:

i. Ensure user's privacy is maintained during video sharing.

1. Add Videos to Queue

- Functional Testing:

a. Add Videos to Queue

i. Verify successful addition of videos to the queue.

- Non-Functional Testing:

b. Scalability Testing:

i. Test performance when adding a large number of videos to the queue simultaneously.

**Hazard Table**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **#** | **Hazard** | **Chance** | **Damage** | **Risk Level** | **Hazard Description** | **Action** | **Description** | **Responsible** |
|  |  | The probability of the hazard occurring, ranging from 0 to 1. | 1-10 | Chance  Multiplied by  Damage | What will happen in case of the hazard | Enclose  Monitoring  Acceptance | -Description  Of prevention method |  |
| **1** | Bad Internet Connectivity | 0.5 | 10 | 5 | Unable to connect as a user | Monitoring | NA | System |
| **2** | New Testers | 0.2 | 8 | 1.6 | Bad testing and coverage | Enclose | Finding a tester for the project length |  |
| **3** | Server Crash | 0.5 | 7 | 7 | Unable to login and retrieve info from the DB | Monitoring |  | System |
| **4** | Vacations | 1.0 | 7 | 7 | Vacations | Enclose | Postponing / finding replacement |  |
| **5** | Weak Server | 0.5 | 10 | 5 | System Crash | Enclose | Adding servers | System |
| **6** | Employee quitting | 0.5 | 10 | 5 | Lowering Team Morale | Monitoring | Hiring a stable worker | HR |
| **7** | Inexperienced Testers | 0.1 | 10 | 1 | Failure to meet the schedule | Enclose | Hiring Experienced Testers | QA Lead |
| **8** | Contract Termination | 0.3 | 10 | 3 | No income for the company | Monitoring | More flexible customer | CEO |
| **9** | Failure to meet the schedule | 1 | 10 | 10 | Unsatisfied Customer | Enclose | QA Lead bad Management | CEO |
| **10** | Customer requirements document changes frequently during the project | 0.5 | 7 | 3.5 | Failure to be prepared for changes by the customer will not ensure a professional, accurate and correct inspection | Monitoring | An appointment must be made with the customer and it should be noted to him that it will not be possible to make changes after the system is established | CEO |