

Test Planning Document

TaskX - “Get organized. Work smarter. Stay Motivated”

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1. References

The list of documents referenced for forming this test plan are:

- Project Plan
- Software Requirements Specifications
- Design Document

2. Project Background

The scheduling system, 'TaskX' is a web-application which can help the users to create and maintain schedules for certain tasks in a smart and effective manner. TaskX is a free to use web-application which can be accessed through any web-browser like Firefox, Chrome, etc.. The main functionality being 'create schedules', TaskX helps the user to create schedules for certain tasks which include all sorts of activities like: homework, assignments, exams, deadlines, meetings and so on depending on the profession of the individual. It also provides several functionalities which can provide motivation to the user to follow the schedule that an individual has created.

The objective of the scheduling system is to schedule the tasks of an individual in such a manner that he/she is not exhausted/tired/bored by the schedule created and to maintain the consistency of the work done (tasks completed) by an individual at the end of the day. This would prevent the user from avoiding the work to be done on the tasks that he/she has planned/scheduled. Satisfaction, improvement in the way of managing the tasks, relief from the stress of pending tasks are some of the advantages that the project team wishes to provide to the users through the system. The system should be user-friendly, easy to use, able to improve the efficiency of the work and have high customer satisfaction.

3. Introduction

The main purpose of the test plan document for the TaskX project is to discuss the testing details of the use cases of the TaskX system. The objective of the Test Plan is to define the various Testing strategies and testing tools used to complete the Testing life cycle of this project. This Test Plan is designed to describe the scope, approach, resources, deliverables, environment, and schedule of all testing activities of the TaskLogs. The plan identifies the items to be tested, the features to be tested, the types of testing to be performed, the personnel responsible for testing, the resources and schedule required to complete testing, and the risks associated with the plan. The design, development, and testing of these reports will be based on the TaskX project. Throughout the testing process, we will be applying the standard test documentation specifications.

4. Purpose

The main purpose of the test plan of the TaskX project is as listed below:

- Identify the features of the project that will be observed and tested
- To state or list down all the activities or procedures necessary to be undergone for conducting the testing process for the TaskX system.
- To declare the Pass/Fail criteria for each functionality that will be tested.
- Identify the deliverables during the testing phase.
- To assess and manipulate the testing techniques being implemented for the testing purpose.

5. Scope

5.1 Functions to be Tested :

<u>Function</u>	<u>Applicable role</u>	<u>Description</u>
Login	User	A user must log in by using Gmail ID i.e Google authentication and a session is created.
Choose Tags	User	A user can select tags which are used for user-targeted motivation.
Add Tasks	User	A user can add task details which he/she needs to schedule.
Edit Tasks	User	A user can update his/her tasks
Track Tasks	User	A user can track his/her tasks.
Motivational Posts	User	A user can view motivational posts subject to his tags selection.
Scheduler	Server	The user entered tasks would be scheduled according to his/her preferences.
Edit Profile	User	User can edit his/her profile example: tags
Logout	User	A user can end his/her session.

5.2 Functions Not to be Tested:

- Google Authentication Login: Here the Google Login will not be tested as the functionality is provided and already tested by the google services so there is no need for validating it.
- UI Components of the website: Each of the UI Components are independent of each other and have self-supporting Cascading style sheet files which are needed while displaying the content. They don't rely on any of the global style sheets available on the internet.
- React Router: The React router is a standard routing library provided by the React services. The router helps us in keeping the User Interface in synchronization with the URL. It provides a simple API with the features like dynamic route matching, lazy code loading and many more.
- React-Router-Dom: The React Router service contains a DOM binding facility for the router. It contains the Router components which are required.
- All the above mentioned functions or the modules are directly obtained from the standard libraries which have already been tested and verified.

6. Testing Approach

According to the requirements-based strategy, the approach where the analysis of the requirements specifications helps in building the basis for the planning, estimation and the designing tests. The project is using a RAD approach along with the weekly iterations. So in this case, at the end of every week the requirements are identified for that particular iteration and it will be reviewed and tested upon. The approach followed here for the TaskX system is under the condition that all the features or the functionalities of the project are tested adequately. The testing would be conducted on the basis while the user logs into the system or the admin of the system.

7. Entry and Exit Criteria

7.1 Entry Criteria

The Entry criteria for the testing system are a set of specific conditions that must be met before the process can begin. The required Entry Criteria for the software testing life cycle is specified during the testing phase. The list of requirements which needs to be fulfilled for the entry criteria for the testing phase includes the following things:

- Availability of the complete or the partial code for testing
- Proper and well organized test plans
- Test Cases and the test data
- Appropriate test tools for the testing purpose
- Suited environment for the testing purpose with all the necessary tools

7.2 Exit Criteria

The Exit criteria for the testing system can be considered as a single document which helps in commemorating the end of the phase life cycle. They can be viewed as specific conditions which need to be fulfilled before completing the testing life cycle. The list of the exit criteria which should be considered for the completion of the testing phase are as listed below:

- Making sure that all the test cases are executed and approved
- Maximizing the functions coverage
- Fixing all the high priority defects
- Generation of the Test logs
- Re-Examining all the high priority defects for executing the corresponding regression scenarios successfully
- Generating the Test report summary.

8. Suspension Criteria and Resumption Requirements

8.1 Suspension Criteria

The suspension criteria in the field of software testing can be considered as suspending the complete or some parts of the testing activities

- If the function created contains large number of serious defects which limits the testing process
- The case where more than 40% of the test cases fail or doesn't provide desirable results.
- Requirements updation by the client
- Hardware or the Software errors encountered

8.2 Resumption Requirements

The resumption criteria is aimed at resuming the previously suspended processes or the activities. The component testing will resume after all the issues incorporated in suspension criteria have been solved.

9. Test Deliverables

The list of documentations which could be generated are :

- Test Plan - This document provides information regarding what needs to be done
- Test Cases
- Unit and Integration Test Cases
- Requirements Traceability matrix
- Testing report - Summary of testing processes

10. Testing Strategy

10.1 Test Process

The test process is a list of processes which needs to be applied and are considered to have 4 steps : First is the Develop Test followed by the Prepare to Test, Running the test and reviewing the results obtained.

10.1.1 Understanding Requirements:

- The requirements specifications which are obtained from the stakeholders of the system
- Understanding the requirements and looking for what is missing and is inconsistent from what is actually required or desired.

10.1.2 Developing the Tests:

- Deriving the acceptance criteria - As soon as the previous two processes or the tasks are completed or are under execution then the questionnaire for matching the system capabilities are prepared.
- Constructing the Test Cases : The test cases can be considered as a set of specific inputs having an expected result which helps in proving one or more Acceptance criterias.

10.1.3 Preparing the Text Matrix:

- The Matrix helps in mapping the test cases to their respective requirements which will ensure the coverage of the requirements.

10.1.4 Reviewing Test Cases and the Matrix:

- It is considered as a key quality process of checking all the documentation which is produced during the development phase of the system.
- A Peer review is organized for the generated test cases and the test matrix
- The Comments on the test cases regarding the upgradation is provided by reviewing respective test cases and the matrix
- The suggestions or the improvements asked to enforce will be re-worked by the author and it will be sent for approval
- The Re-worked suggestion would be reviewed and approved by the receiver.

10.1.5 Preparing for test:

- Preparing the environment for running the tests and making sure that all the objects and the entities are in proper place in order for the testing to take place.
- The next step includes building the data files which are required for running the test cases.

10.1.6 Running the Tests:

- Running the tests uses the input and the desired result of each of the test cases and works by applying the test functions or the scripts for running them
- Recording the results obtained in a file called the test - log where all the activities which happened in which order and the list of events that occurred are stored/recorded. If in any case the actual obtained result differs from the expected result then the information about it is recorded in the Incident report.

10.1.7 Reviewing the test results:

- The Acceptability of the system is considered and evaluated after all the tests which are required to be performed are completed. One of the simple methods of doing this is by checking how many differing incidents are present along with their severity. Although as we know that simply counting the Incidents does not provide a clear idea regarding their impact on what needs to be achieved by the system.

10.2 Testing Types

Testing Type	Test Objective	Technique used	Completion Criteria
Unit Testing	Testing all the individual modules for determining if any issues are present or not	Manual	Passed status if all the modules pass all the test cases stated for it.
Integration Testing	Putting several units together we conduct integration test to make sure that integrating these units have not introduced any errors	Manual	If after integrating all the modules, they work without introducing any errors, it is considered to have passed the tests
Regression Testing	Some subsets of the tests are re-executed to ensure that the changes have not propagated any unintended side effects	Manual	While integrating the various modules, the changes which are incorporated with it are taken care of in depth to ensure that no additional errors are introduced
Smoke Testing	It comprises a set of tests which ensure that the most important functions work properly. It helps in deciding if the build is stable enough to proceed with the further testing. It ponders upon the functions of the system.	Manual	When the functions are integrated, the incorporated changes are taken care so that there are no additional errors

10.3 Test Environment

- Windows 10 : Chrome (latest), Firefox (latest)
- Linux Ubuntu : Mozilla(latest)

10.4 Testing Schedule

<u>Task ID</u>	<u>Task_Name</u>	<u>Date</u>
TC_001	Web application run in laptop view	02-05-2021
TC_002	Web application run in mobile view	02-05-2021
TC_003	Web application run in tablet view	02-05-2021
TC_004	Login/Sign-up Security	02-05-2021
TC_005	Field Validation- G-mail ID	03-05-2021
TC_006	Field Validation- Password	03-05-2021
TC_007	If new user, add task	03-05-2021
TC_008	If old user, add task taking into consideration of already scheduled task	03-05-2021
TC_009	Checking free slots of all the attendees	04-05-2021
TC_010	One Field is changed	04-05-2021
TC_011	More than one field is changed	04-05-2021
TC_012	No fields changed	04-05-2021
TC_013	Scheduled Tasks Deleted	05-05-2021
TC_014	No Scheduled slots/ past history cannot be edited	05-05-2021

TC_015	Response when selecting the tags	05-05-2021
TC_016	Checking slots of sessions divided from a particular task	05-05-2021
TC_017	Analysing the progression of ongoing/completed tasks	05-05-2021
TC_018	Making surity of Valid Links	06-05-2021
TC_019	Links are fetched according to tags	06-05-2021

10.5 Test Cases

<u>Test Cases</u>	<u>Description</u>
TC_001	Web-Application run in Laptop/Desktop View
TC_002	Web-Application run in Mobile View
TC_003	Web-Application run in Tablet View
TC_004	Login/Sign-Up Security
TC_005	Field Validation: Gmail ID
TC_006	Field Validation: Password
TC_007	If new user, add task without constraints
TC_008	If old user, add task taking into consideration of already scheduled task
TC_009	Checking Free Slots of all the attendees for scheduling a meeting
TC_010	One Field is Changed for editing a task
TC_011	More than one field is changed for editing a task
TC_012	No fields changed for editing a task
TC_013	Schedule task deleted
TC_014	No Scheduled slots/Past History cannot be edited.

TC_015	Response when selecting the tags.
TC_016	Checking the valid slots of sessions divided from a particular task.
TC_017	Analysing the progression of an ongoing/completed task
TC_018	Making surety of Valid Links
TC_019	Links are fetched according to the area of interests/tags suggested by the user

11. Risk, Assumptions and Dependencies

11.1 Risks

Number	Description	Status	Severity	Mitigation Type	Details of the mitigation action
1	Classes in the database are not linked properly	Closed	Medium	Avoidance	Testing the relations in the database
2	Continuously changing requirements	Work in progress	High	Acceptance	Continuous adaptation to the changing requirements
3	Evolving technology	Open	Low	Acceptance	Making the software compatible
4	Development of the wrong feature	Closed	High	Reduction	Improving the wrong features by feedbacks
5	Test data is	Closed	Medium	Reduction	Verifying the

	inadequate				suitability of the test data
6	Inadequate resources during the testing process	Closed	Medium	Avoidance	Ensuring constant supply of resources during testing
7	Lack of Knowledge in team members regarding the tasks	Closed	Medium	Avoidance	Ensuring all the members have satisfactory knowledge in their respective domains

11.2 Assumptions

Number	Description	Status	Reason for Assumption	Actions to validate	Impact
1	Active Internet Connection	Closed	The server can only be accessed while having an internet connection	Hosting the system on the server	The user is not able to access the system
2	User can move freely throughout the website	Closed	The user will be able to plan his day	Ability for the user to navigate	The user won't be able to plan his tasks
3	Availability of sufficient memory for the system	Closed	Non working of the system if the memory is not sufficient	Having sufficient storage space	System not working properly

11.3 Dependencies

Number	Description	Status	Priority
1	System dependency on the Google Authentication for Login function	Closed	High
2	System Dependent on the internet based servers	Closed	Medium
3	Database dependent on the MongoDB servers	Closed	Medium