Assessment – Manual Testing

Introduction

We recommend reading all given tasks before answering those. Please note that results should be made in form of a detailed and clear report – as it is required by Task 3. Take this into account while composing answers.

Please attempt Task 1 & Task 2 if you are having 2-4 years of experience.

Please attempt complete assessment from Task to Task 3 if you are having 4+ years of experience.

Please read the information for each task carefully. All the tasks below are expected to be completed. In case you face some difficulties with tasks understanding and are not sure about interpretation correctness, please write down assumptions you were using for a task.

Please make sure you reflect all things that matter to understand decisions you made while completing the task.

We would love to receive your input on these to understand the approach/strategies you have been using in the industry per your role.

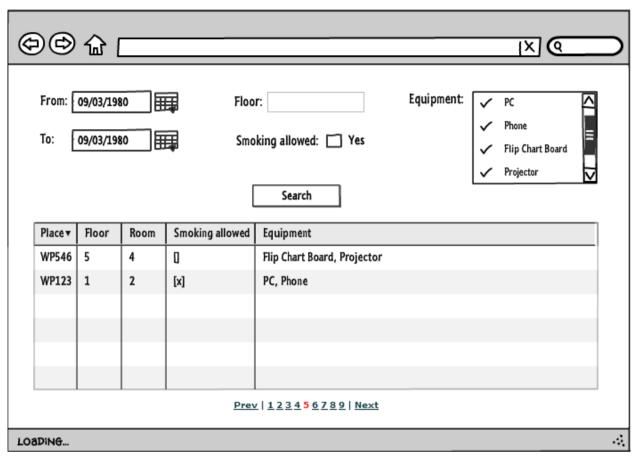## Task 1: Requirements Analysis and Coverage

Description: Please propose the optimal test data and set of test cases required to check the functionality. Make sure that proposed approach is efficient and effective in terms of required time and effort. Please use the mockup and requirements below as input.

Bonuses: Identify bad requirements and to which criteria they don't satisfy.

Assessment Criteria: Since the task is aimed at requirements analysis, test data and test cases creation skills, it is expected that you will come up with reasonable assumptions, test cases format and proper coverage of requirements with tests.

Task 1 Input: Overview

The web-form below is used for searching of available workplaces in an organization. Each workplace has the following attributes: date, floor, list of equipment and smoking restrictions. These attributes are also used as search criteria. Mock-up of the search form is provided below.

Task 1 Input: Requirements

1	System shall allow use to perform search, set search criteria and filter workplaces, and also to sort and navigate by search results.
2	System shall allow searching without setting search parameters.
3	System shall allow searching workplaces by provided parameters.
4	System shall allow searching only for the date range that is not in the past.
5	System shall allow sorting search results by all available fields.
6	System shall validate provided data before search.
7	System shall provide search results without delay.
8	System shall provide flexible navigation between results.
9	System shall provide user friendly interface.
10	Search result table shall be read only

Task 1:

As per the above image certain assumptions are:

1. WP under Place column is considered as Work Place.
2. In WP546 > WP(Work Place) > 5 is the floor > 4 is the room number.
3. [ ] is considered as Yes and [X] is No for smoking allowed.
4. When there is no parameter set, system will provide All results including 'Smoking Allowed' and 'Smoking Not Allowed'.
5. Considering 5 records per page to check pagination.
6. Assuming that the workplaces can be booked for entire month.
7. Assuming Equipment filter to follow 'Contains' logic, meaning, If a Room1 is assigned to PC and Room3 is assigned to PC and Phone, upon filtering results and checking only PC filter will show both Room1 and Room3.

Test Data:

As of now I am assuming a building of 5 floors with each consisting of 5 rooms.
Rooms ending with 6 are 'Smoking Allowed' and Rooms ending with 3 are 'Smoking Not Allowed'

First Floor - WP116, WP123, WP136, WP143, WP156.
Second Floor - WP216, WP223, WP236, WP243, WP256.
Third Floor - WP316, WP323, WP336, WP343, WP356.
Fourth Floor - WP416, WP423, WP436, WP443, WP456.
Fifth Floor - WP516, WP523, WP536, WP543, WP556.

Equipment Assigned to rooms:

1. First Floor >> WP116 – PC, WP123 - Phone, WP136 – Flip Chart Board, WP143 - Projector, WP156 – Flip Chart Board and Projector.
2. Second Floor >> WP216 - PC, WP223 - Phone, WP236 – Flip Chart Board, WP243 - Projector, WP256 – PC and Phone.
3. Third Floor >> WP316 - PC, WP323 - Phone, WP336 - Flip Chart Board, WP343 - Projector, WP356 - Flip Chart Board and Projector.
4. Fourth Floor >> WP416 - PC, WP423 - Phone, WP436 - Flip Chart Board, WP443 - Projector, WP456 - PC and Phone.
5. Fifth Floor >> WP516 - PC, WP523 - Phone, WP536 - Flip Chart Board, WP543 - Projector, WP556 – PC, Phone, Flip Chart Board and Projector.

Date Range for availability:

Assuming today's date to be 30th December 2022.

1. First floor will be available for January
2. Second floor will be available for February
3. Third floor will be available for March
4. Fourth floor will be available for April
5. Fifth floor will be available for May

Test Cases:

Requirement	Scenario	Steps	Expected Results	Status
1. System shall allow searching without setting search parameters.	Check UI of the page upon landing on first	1. Login to app 2. Click 'Book Workplace'	Verify that All data should appear	
	Check pagination	1. Click Next button at the bottom of the page	Verify 5 records per age should be displayed	
	Check UI elements on the page	1. Login to app and click 'Book Workplace'	1. Verify Date range field From and To 2. Verify Floor field 3. Verify Smoking Allowed Checkbox 4. Verify Equipment selection field 5. Verify Search button	
	Incorrect Data search	In search field Enter: 1. !@@#!# 2. QPLO 3. {{}{}	Verify in all such cases system should show 'No Results'	
	Check WP	1. In search Enter 'WP' and click Search button	Verify that all the data appears, since all Data contains WP	
2. System shall allow sorting search results by all available fields	Sort Place	1. Click Place column 2. Click Place column again	Verify data should sort in descending order. WP556 on top to WP116 at bottom Verify data should again sort in	

			Ascending order. – WP116 on top to WP556 at bottom	
	Sort Floor	1. Click Floor column 2. Click Floor column again	Verify data sorting form 5 floor to 1st floor Verify data sorting from 1st to 5th Floor	
	Sort Room	1. Click Room column 2. Click Room column again	Verify all rooms number 5 on top to room no 1 at bottom Verify all rooms number 1 on top to room no 5 at bottom	
3. System shall allow searching workplaces by provided parameters.	Search specific WP	In search enter: 1. WP5 2. WP4 3. WP3 4. WP2 5. WP1	Verify : 1. WP516, WP523, WP536, WP543, WP556. 2. WP416, WP423, WP436, WP443, WP456. 3. WP316, WP323, WP336, WP343, WP356 4. WP216, WP223, WP236, WP243, WP256. 5. WP116, WP123, WP136, WP143, WP156.	
4. System shall allow searching only for the date range that is not in the past	Check validation on past date	1. Enter From date: 2/2/2015 2. Enter To date : 3/4/2018	Verify validation error upon providing past date	

	Check past date validation	1. Enter From date: 2/2/2015 2. Enter To Date: 2/4/2025	Verify validation error upon providing past date	
	Check Date Range result	1. Enter from Date: 5/1/2023 2. To Date: 21/1/2023	Verify : WP116, WP123, WP136, WP143, WP156.	
5. System shall validate provided data before search.	Check Date Range result	1. From : 15/1/2023 2. To:15/2/2023	Verify validation error should appear (refer assumption point 6 mentioned above, since date range should fall under a month)	
	Check Date Range	1. From : 15/2/2023 2. To: 27/2/2023	Verify WP216, WP223, WP236, WP243, WP256.	
6. System shall allow user to perform search, set search criteria and filter workplaces, and also to sort and navigate by search results.	Search with Phone Equipment	1. When All results are displayed. 2. Click Equipment dropdown and select Phone 3. Click search	Verify: WP123, WP223, WP323, WP423, WP523, WP556, WP456, WP256	
	Search with PC Equipment	1. When All results are displayed. 2. Click Equipment dropdown and select PC 3. Click search	Verify: WP116, WP216, WP316, WP416, WP516, WP556, WP456, WP356	
	Search with Flip Chart Board and Projector Equipment	1. When All results are displayed. 2. Click Equipment dropdown and select Project and Flip Chart Board 3. Click search	Verify: WP136, WP143, WP156, WP236, WP243, WP336, WP343, WP356, WP436, WP443, WP536, WP543, WP556	
	Search on basis of floor	1. When all results appear 2. Enter – 5 in floor field	Verify: WP516, WP523, WP536, WP543, WP556.	
		1. When all results appear 2. Enter – 3 in floor field	WP316, WP323, WP336, WP343, WP356.	
	Check validation for floor not present	1. When all results appear 2. Enter – 9 in floor field	Verify app should throw a validation message 'Building contains floor 1 to 5, Please enter a valid	

			data'	
	Search if smoking allowed	1. Enter WP in search and click Search. All results will appear 2. Select check Smoking Allowed – Yes	Verify Result: WP116, WP136, WP156, WP236, WP256, WP316, WP336, WP356. WP416, WP436, WP456, WP516, WP536, WP556.	
7 System shall provide search results without delay.	Verify performance	1. For any search system should not take more than 3 seconds	Verify All data should appear for every filter within 3 seconds	
8 System shall provide flexible navigation between results.	Verify Navigation	1. In search field enter – WP. All results will appear. 2. Now click yes check box for 'Smoking Allowed'	Verify that the transition of results should be smooth and system should not lag. Also verify that UI should corrupt in such process.	
9 System shall provide user friendly interface.	UI check	1. Click on From and To Date 2. Click Equipment dropdown 3. Check table	Verify that UI of drop down, table results and date range should not overlap and corrupt upon closing and opening of any element	
10 Search result table shall be read only	Check read only	1. Double click on any value in results 2. Try editing or removing values	Verify that system should appear as read only and user should not able to edit any value displayed in the app	

Task 2 – Estimation

Description: Please provide rough estimate with WBS for test activities planned in the previous task. Provide information about what you suggest to include and what the customer gets as a result of planned activities.

Bonuses: Make a high-level description of how estimated test activities sum up in a process

Assessment Criteria: The pair of current and previous tasks is aimed to evaluate skills on strategy elaboration and estimation, you should enlist all the assumptions used in planning/estimation and provide clear vision on what level of quality is expected as a result of proposed activities.

Task 2 Input: Increment Description

The new increment of an application described in previous task will contain many new features that will extend already existing functionality. The following features are added to the project plan for a new version:

- User registration
- Booking of the office place
- User roles (user and office manager roles)
- Native mobile application

Task 2 Input: User Stories

The following set of user stories were received from the Customer as description of planned features:
1. As a user, I want to book available working places for future so that nobody could take the place.
2. As a user, I want to have ability to cancel booking so that another user could book it instead.
3. As a user, I want to register into the system so that I can view working places I have booked.
4. As a user, I want to use mobile application for system usage so that I can do it any time.
5. As an office manager, I want to manage working places so that system provide valid up-to-date information to system users.
6. As an office manager, I want to create new working places so that users could have ability to find and book them.

Task 2:

Requirement Analysis of planned activities and Test Strategy:

Once the requirement is gathered there are some key areas which needs to be identified as testing team.

1. **Project Initiation**
   Understand Business Requirements

2. **Plan**
   Review Business requirements
   Prepare Test Plan and Strategy

3. **Test Design**
   Test plan update
   Test plan review and sign off
   Develop detailed system test cases
   Prepare RTM
   Test case review and sign off
   Test Data preparation and setup (test cases)

4. **Smoke – Pre QA test execution**
   Execute Pre system test in cycles (until stable env is achieved)
   Defect logging and Fixing

5. **System – Test Execution**
  Execute system test cases (until defects are fixed)
  Defect logging and Fixing

6. **Regression Testing**
  Execute Regression test cases
  Defect logging and Fixing

7. **Sign Off**
  Test results consolidation and Defect Report
  Project Activities

Estimating Testing hours:

We need 3 major Parameters to calculate estimated Testing time:

1. Resource Skill Parameter
2. Calculation of Days
3. Rework

Resource Skill Parameter:
Usually there is pre-defined set of points in 3 categories:
1.0 = Person with extensive experience and skills
1.5 = Person with some experience and skills
2.0 = Person with no experience and skills

Person with extensive experience will come at a higher cost then the person with little experience.
To ensure that the Budget is at least spent, companies recruit mixed staff meaning people with extensive, some and little experience/skills.

For New Requirement: 3 resources are hired. Ui, API and Database testing person. Since, Database testing needs good technical skills it is assumed that the company hires a person with Extensive technical skills.

Database person = 1.0
API person = 1.5
UI person = 2.0

For all the above-mentioned activities, dedicated SCRUM Poker is conducted in which complexity of the task is rated and based on its complexity, Estimated days to complete task is calculated.

User stories are created based on requirement and separate testing tasks are created in JIRA.

A team meeting is conducted where everyone provides complexity of the task on their respective systems.

Calculation of Days:

Complexity – 1,2,4,8,10
Complexity X 0.5 = No. of Days

For example, if majority of team members in SCRUM Poker rates task 'Task1' as 4.
4 X 0.5 = 2 Days

Estimation of New Requirement:

User Story	Tasks	Sub Task	Complexity	No. of Day(s)
User Registration	UI Testing	Test Cases	2	1
		Execution	1	0.5
	API Testing	Test Cases	1	0.5
		Execution	1	0.5
	Database Testing	Test Cases	2	1
		Execution	1	0.5
Booking Office Place	UI Testing	Test Cases	8	4
		Execution	4	2
	API Testing	Test Cases	4	2
		Execution	2	1
	Database Testing	Test Cases	4	2
		Execution	2	1
User Roles	UI Testing	Test Cases	4	2
		Execution	4	2
	API Testing	Test Cases	8	4
		Execution	4	2
	Database Testing	Test Cases	4	2
		Execution	2	1
Native Mobile Application	UI Testing	Test Cases	8	4
		Execution	4	2
	API Testing	Test Cases	8	4
		Execution	8	4
	Database Testing	Test Cases	4	2
		Execution	2	1
Total			**92**	**46**

UI Testing Days = 17.5
API Testing Days = 18
Database Testing Days = 10.5

Rework parameters:

When there is team with mixed experience, it is assumed that rework will be medium.

Categorizing rework on 3 parameter:
Rework is low = 1.0
Rework is medium = 1.5
Rework is high = 2.0

Final Calculation of estimated work time = (UI Staff X UI Days) + (API Staff X API Days) + (DB Staff X DB Days)

$$(2.0 \times 17.5) + (1.5 \times 18) + (1.0 \times 10.5) = 35 + 27 + 10.5 = 72.5 \text{ Days}$$

Estimating a medium rework which is 1.5.

Estimated time after rework = 1.5 X 72.5 Days = 109 Days

Task 3 – Complex Reporting

Description: Please put all the results on all the tasks performed in scope of this evaluation into a structured report.

Assessment Criteria: Please make sure the report is clear and covers everything needed for results understanding. Make sure that Project Manager or Test Lead who will review this report will have no additional questions.

Task 3:

Reporting:

Browser used for testing –

Browser version –

Smoke Testing Completion Date –
Date of testing completion –
Regression Testing completion Date -

File Name	Tested By	Total scenarios	Passed Scenarios	Failed Scenarios	Total Bugs Reported	Fixed Bugs	Comments
Search Workplace	Himanshu Sharma						
User Registration	Arvind Bhalla						
Book Workplace	Amit Kumar						
User Roles	Roshni Awasthi						
Native Mobile Application	James Rodrigues						