**About the exercises:**

The exercises contained in this document are to be completed within a week’s time before the technical round of the interview. These exercises are of varying difficulty, and it is up to you whether you approach an exercise you feel is well within your capability or have a go at a more difficult exercise. Your approach to solving these exercises will be assessed and it’s entirely up to you how many you complete but we suggest at least two.

For code and automation related scenarios you can use any technical tool available as free or whatever you have available in your PC / laptop.

Solutions must be submitted in your own Git repository and the repository information must be sent via an email. Following submission, we shall assess the solution and your approach towards solving these and will invite you for technical discussion.

**Please find below Six scenarios, provide your proposed solution for one scenario from section A and one from section B.**

**Section A - Testing techniques and concept related scenarios:**

***Scenario A1:***

The web page has 3 distinct sections (Section1, Section2 and Section3), the levels are only 2 (published and hidden) and an array type = L4(23) how do you effectively write test cases which will have high coverage?

**Solution:**

*The aforementioned scenario can be achieved using the Orthogonal Array Testing (Pairwise Testing), one of the Test design Techniques.*

*array type = L4(23) – represents an Orthogonal Array, 4 indicates no of combinations, 2 indicates number of input values, 3 indicates the number of variables.*

*To elaborate, the number of test combinations for the given scenario would be 2\*2\*2=8, but using orthogonal arrays we can reduce the number of test combinations to 4,that optimises the test coverage.*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Section1 | Section2 | Section3 |
| TC1 | published | published | published |
| TC2 | published | hidden | hidden |
| TC3 | hidden | published | hidden |
| TC4 | hidden | hidden | published |

**S*cenario A2:***

What are the different Quality gates you have come across in a Project and explain what is done in each to ensure high quality with an example:

*Quality gates are the checklists/prerequisites that we follow to proceed to the next level in the project delivery. It’s essential to ensure all the steps in each Quality gate are implemented/answered before moving ahead.*

*Our Quality gate document had a list of activities which were checked before proceeding to next stage.*

*For example, a quality gate check is done prior starting test plan and design viz.*

*Requirement document review is completed*

*Acceptance criteria review is completed*

*All the pertinent queries are answered*

*These are documented and should be verified and checked before advancing to the next phase which provides transparency and ensures the project delivery is according the standards and expectations.*

and

What are the different types of test data you have used and explain the challenges in each of those with an example:

*Most of our projects test data is crafted using the techniques like Equivalence partitioning, Boundary Value Analysis. Whilst we source the sample data from the production, it is often a challenge to generate the test data for the new functionalities.*

*For example, if the discount rate on a total bill of 2000-3000(inclusive) is 10%*

*Boundary values for total bill are considered as follows:*

*1999,2000,2001,2500,2999,3000,3001*

*The valid data here would be 2000,2001,2500,2999,3000 and invalid data would be 1999,3001*

*And a user login into application with the mobile number which is a 10-digit number*

*Equivalence partitioning, the input data is divided into equivalent classes*

*9 numbers, 10 numbers, 11 numbers*

*Valid class = 9678567463*

*Invalid class = 954678533, 9707789567*4

* *Albeit using different data design techniques, the test data generation becomes strenuous if the requirements are not clear, improper documentation, when there are data dependencies, miscommunication with compeers/other work mates (developers), no data access to the production env’s, at times sample data from production is inadequate.*

***Scenario A3:*** Write test cases for below scenario:

* Scenario: Make Minimum due payment
* Given user is on Pay with credit card page
* When user fills all details and select Minimum amount option (full amount, other amount)
* And User clicks on Pay button
* Then Credit card confirmation page is displayed
* And if reference number is displayed
* But error message is not displayed

Solution: All details information is ambiguous.

*Possible test cases for the precursory scenario:*

*TC1 Validate if user is on pay with credit card page*

*TC2 Validate the pay with credit card page title, page URL and Page heading*

*TC3 Validate user fills all details*

*TC4 Validate user selects “Minimum amount option”*

*TC5 Validate “Minimum amount option” is selected*

*TC6 Validate pay button is enabled*

*TC7 Validate pay button is clickable*

*TC8 Validate user clicks on pay button*

*TC9 Validate Credit card confirmation page is displayed*

*TC10 Validate the Credit card confirmation page title, page URL and Page heading*

*TC11 Validate reference number is displayed*

*TC12 Validate error message is not displayed*

*TC13 Validate the reference number text message*

*TC14 Validate the reference number is according to the requirements*

*TC14 Validate the UI & spellings on Credit card payment page*

*TC15 Validate the dimensions of the elements on Credit card payment page*

*TC16 Validate the placeholder values if any*

*TC17 Validate the colours and fonts of the elements*

**Section B - Test automation / script related scenarios:**

***Scenario B1:***

How do you parametrize in tools like TestNG or any automation tool for below scenario?

User name = A, B, C and D and password = 1, 2, 3 and 4

This can be done using the TestNG annotation @dataProvider

***Scenario B2:***

Automate [www.pearson.com](http://www.pearson.com) , you can select at least 2 pages either from Register or navigate from Home page to other pages.