

# Testing Document

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# Test Plan

## Introduction

This document details the testing process we have undertaken to ensure the program functions as expected and requested in the client's specifications.

## Test strategy

The sections below outline how testing has been completed.

The tests cover most, if not all, sections of the project and highlight any issues that arose during testing.

## Objective

The primary objectives of this testing process are:

- To ensure the website completes the desired functions provided by the client
- To ensure the website is protected from unauthorized access
- To ensure that there is no critical bugs

## Scope

**Features to be tested:**

### 1. Authentication

- a. Registration
- b. Login - staff and candidate
- c. Logout - staff and candidate
- d. Page protection - only authorized users

### 2. Questionnaire

- a. Completion
- b. Saving of results
- c. Compiling of results in staff dashboard (charts)

### 3. Administrative Functions

- a. Adding / editing / Removing
  - i. Staff accounts
  - ii. Text answers
  - iii. Range questions
  - iv. Roles

## Tools

Bug reporting document

Test cases document

Performance: **Chrome DevTools**

Accessibility: **Lighthouse**

Portability: **Browser and Device Emulator, Chrome DevTools**

Usability: **Screen reader, Magnifier**

## Resource Allocation

To allocate testing we intend for each developer to focus on thoroughly testing a different component. We will record who is assigned to each test along with its status  
i.e. Authentication, Questionnaire, Administrative functions

## Risk Management

To ensure we provide high quality testing we have outlined the consequence of what may happen without adequate testing and potential risks we could have during testing to mitigate the likelihood of our system having severe bugs. After identifying the risks we can create a more structured plan to cover all risk categories along with more focus on the risks with higher severity.

### Risks could arise during testing of the software:

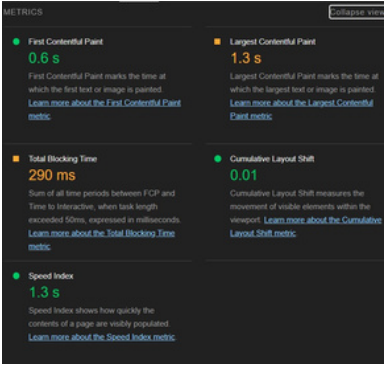
Risk Category	Risk	Strategy to manage risk	impact
Performance	Performance slower than expected	Measure the performance throughout to get an average for more accuracy	Medium
Security	Data loss or modified when testing security	Keep track of the changes made in the database and ensure any errors given are expected (e.g. Accessing a page when unauthorised)	High to Severe
All	Poorly defined test cases	Write out test cases covering all requirements	High
All	Missed bugs	Track the status of what is being tested so no test case is missed and report the bugs as soon as they are found	High

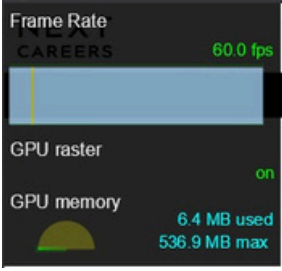
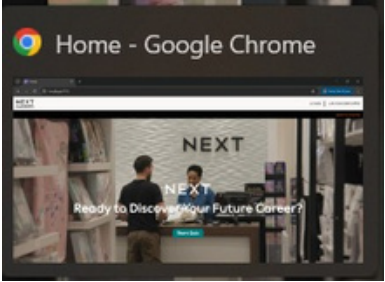
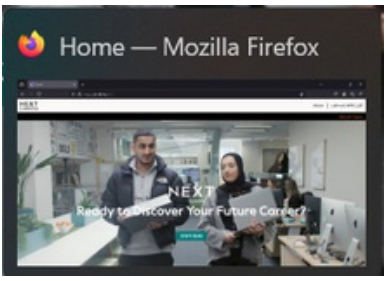
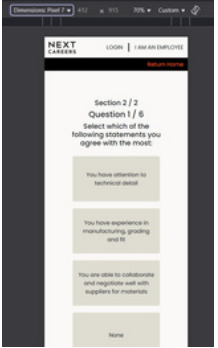

## Risks released software may have without adequate testing:

Risk Category	Risk	Strategy to manage risk	Response	impact
Security	Private data vulnerability	Test users need to be authenticated and authorised to view certain pages	Security testing	Severe
Performance	Poor software performance	Test and measure the performance to ensure it works as expected and nothing is too slow	Chrome Dev Tools	High
Usability	Unmet expectations & standards for client and candidates	Creating test cases for all requirements the client expects based on user stories and non functional requirements	Test cases	High
Usability Performance Security	Critical bugs	Multiple developers testing all components and reporting any issues in a shared bug reporting form.	Bug reporting	High
Usability	Accessibility requirements are not met	Using lighthouse tools to test accessibility	Lighthouse	Medium

## Testing

### Non Functional Requirements Testing

Test ID	Type	Description	Result	Evidence
001	Performance	The application must launch within 3 seconds on devices with at least 2GB of RAM	Page loads within 3 seconds. Tested through chrome dev tools using lighthouse throttling and 3g / 4g to test performance	 <p>The screenshot shows the Lighthouse performance metrics for a page. The metrics are as follows:</p> <ul style="list-style-type: none"> <li><b>First Contentful Paint:</b> 0.6 s. First Contentful Paint marks the time at which the first text or image is painted. <a href="#">Learn more about the First Contentful Paint metric.</a></li> <li><b>Largest Contentful Paint:</b> 1.3 s. Largest Contentful Paint marks the time at which the largest text or image is painted. <a href="#">Learn more about the Largest Contentful Paint metric.</a></li> <li><b>Total Blocking Time:</b> 290 ms. Sum of all time periods between FCP and Time to Interactive, when task length exceeded 50ms, expressed in milliseconds. <a href="#">Learn more about the Total Blocking Time metric.</a></li> <li><b>Cumulative Layout Shift:</b> 0.01. Cumulative Layout Shift measures the movement of visible elements within the viewport. <a href="#">Learn more about the Cumulative Layout Shift metric.</a></li> <li><b>Speed Index:</b> 1.3 s. Speed Index shows how quickly the contents of a page are visibly populated. <a href="#">Learn more about the Speed Index metric.</a></li> </ul>
	Performance	All in-app transitions (e.g. opening screens, submitting forms) must occur within 1 second	Most in-app transitions occur within 1 second this however can take longer due to internet speed, traffic and device specs	

	Performance	The application should consume less than 100MB of memory and maintain a frame rate of at least 60 FPS during all animations and interactions	Application does not exceed 100MB of memory and frame rate is 60 FPS	
	Performance	The system must provide immediate results within 1 second after the user has completed the questionnaire	Once the form is submitted the time it takes to load the result page is less than 1 second	
	Usability	The screen must be accessible for screen-readers, color blind friendly and use readable fonts	Screen reader works all pages Font is readable for color blind users	
	Portability	The system must be able to run on at least windows 10 and macOS	The system can run on windows 10 and macOS	Tested using windows 10 and macOS
	Portability	The system must be able to run Chrome, Edge, Safari	The system has been tested on all 3 browsers through the use of an emulator giving a successful result	
	Portability	The system could be run on Opera, Internet explorer, Firefox and other less used browsers	The system can run successfully on Opera, Internet explorer and Firefox	
	Portability	The system should be accessible via mobile devices	The website is not optimized for mobile particularly the dashboards however, mobile users can go through the questionnaire and see their results	
	Reliability	The system should not experience any critical failures or crashes	The system runs smoothly without any major errors	Viewed every page on multiple devices no critical failures or crashes
	Security	The system must be protected against attacks and all passwords must be hashed or encrypted.	All passwords are hashed and data is stored securely in addition to having authentication and authorisation	

## Test Cases

The test cases cover all functional requirements which are required to be tested.

## Lighthouse Testing

Below we have listed the changes required to improve our websites SEO, Accessibility and Best Practices

### Landing Page:

- Accessibility
  - Add Alt Attributes to Images
- Best Practices
  - Get rid of console.write & logs
- SEO
  - Add meta tag
  - Alt attribute to images
  - Links are not crawlable (a.dismiss)?

### Quiz & Results:

- Accessibility
  - Add Alt attributes to Images (NEXT LOGO)
- SEO
  - Add meta tag
  - Alt attribute to images
  - Links are not crawlable (a.dismiss)?

### Cookie Agreement:

- Alt attribute

### Dashboard:

- Accessibility:
  - Title tag
  - Alt image attribute

## **Defect Management**

For testing we have created a bug report document where a tester can report a bug which we can assign a developer to work on. The priority varies based on the severity of the issue. These bugs have been discovered by thorough testing of non-functional requirements and test cases.

# Bug Report #1

ID number	001
Name	Authorisation on all pages not fully implemented
Reporter	Jasmine W
Submit Date	28/03/2025
Summary	Any user can access some of the pages via url due to them not checking for authorisation. This is critical as it may expose sensitive data and can be modified by users who shouldn't have permission to do this.
Steps to reproduce	<ol style="list-style-type: none"><li>1. Ensure no account is currently logged in (cooke session)</li><li>2. Go to the url [ ]</li></ol>
Expected result	<ol style="list-style-type: none"><li>1. An error is displayed notifying the user they cannot access this page</li></ol>
Actual result	<ol style="list-style-type: none"><li>1. The user is directed to the url</li><li>2. They can view / edit / delete details they should not have access to</li></ol>
URL	
Screenshot	
Platform Operating	Windows
System Browser	Windows 11 Home
Severity	Chrome 135
Assigned to	Major
Priority	
Notes	High



## Bug Report #2

ID number	002
Name	Lack of mobile optimisation
Reporter	Jasmine W
Submit Date	29/03/2025
Summary	While some pages work on mobile [questionnaire and results page] a candidate cannot view their dashboard and other pages are not fully optimised for mobile. This reduces accessibility and portability.
Steps to reproduce	<ol style="list-style-type: none"> <li>1. Test on Mobile or change screen size through inspect element</li> <li>2. Login to a candidate account</li> <li>3. Navigate to the dashboard</li> </ol>
Expected result	The candidate should be able to view their results and the menu style should change type and position to be accessible to mobile users.
Actual result	The menu options cannot be seen and the text is not optimised for mobile users
URL	
Screenshot	
Platform Operating	N/A      N/A
System Browser	Chrome 135
Severity	Medium
Assigned to	
Priority	
Notes	High

# Test Cases

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## Guest

Test Case ID	001
Test Title	Complete questionnaire - Guest
Test Description	Begin and complete questionnaire without making an account
Pre-Conditions	The user is on the landing page
Steps to execute	<ol style="list-style-type: none"><li>1. Press start questionnaire</li><li>2. Go through questionnaire</li><li>3. View results after completing questionnaire</li></ol>
Expected Result	<ol style="list-style-type: none"><li>1. Guest can view recommended job roles based on answers</li><li>2. Results are added to database</li></ol>
Status	Pass

Test Case ID	002
Test Title	Register account - Guest
Test Description	Guest creating account to view saved results
Pre-Conditions	Must have just completed a questionnaire and be on the results page
Steps to execute	<ol style="list-style-type: none"><li>1. Click "sign up" on the results page</li><li>2. Fill out the provided form</li><li>3. Click submit</li></ol>
Expected Result	<ol style="list-style-type: none"><li>The guest's details are added to the database</li><li>2. They can view the results from their questionnaire</li><li>3. Otherwise display an error message that the form is not filled in correctly</li></ol>
Status	Pass

# Candidate

Test Case ID	003
Test Title	Candidate login
Test Description	Logging in as a candidate
Pre-Conditions	Must not be signed into the website
Steps to execute	<ol style="list-style-type: none"><li>1. Click “log in” on the top navigation bar or at the end of a questionnaire</li><li>2. Fill out the provided form with a matching email and password pair connected to a candidate account</li><li>3. Click submit</li></ol>
Expected Result	<ol style="list-style-type: none"><li>1. If the details submitted match those of a candidate in the database, redirect to the candidate dashboard</li><li>2. Otherwise, display an error message explaining that the details are incorrect.</li></ol>
Status	Pass

Test Case ID	004
Test Title	Candidate edit account
Test Description	A candidate can edit their details
Pre-Conditions	Must be signed into a candidate account
Steps to execute	<ol style="list-style-type: none"><li>1. Click “profile” in the left nav bar on the dashboard</li><li>2. Click “edit profile”</li></ol>
Expected Result	<ol style="list-style-type: none"><li>1. Candidate details are updated in the database</li><li>2. The new candidate details are displayed</li><li>3. Otherwise display an error message that the form is not filled in correctly</li></ol>
Status	Pass

Test Case ID	005
Test Title	Candidate delete account
Test Description	A candidate can decide to deactivate their account
Pre-Conditions	Must be signed into a candidate account
Steps to	<ol style="list-style-type: none"><li>1. Click “profile” in the left nav bar on the dashboard</li></ol>

<b>execute</b>	2. Click "edit profile" 3. TO BE ADDED
<b>Expected Result</b>	1. Candidate account is deactivated
<b>Status</b>	<b>Pass</b>

## Staff

<b>Test Case ID</b>	<b>006</b>
<b>Test Title</b>	<b>Staff login</b>
<b>Test Description</b>	Logging in as a staff member
<b>Pre-Conditions</b>	<b>Must not be signed into an account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "employee login" on the top navigation bar the landing page</li> <li>2. Fill out the provided form with a matching email and password pair connected to an employee account</li> <li>3. Click submit</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. If the details submitted match those of an employee account, redirect to the staff dashboard</li> <li>2. Otherwise, display an error message explaining that the details are incorrect.</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>007</b>
<b>Test Title</b>	<b>Staff change password</b>
<b>Test Description</b>	Changing password
<b>Pre-Conditions</b>	<b>Must have logged into a staff account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Select profile page from the nav menu</li> <li>2. Press button to edit details</li> <li>3. Change password</li> <li>4. Press submit</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. When the staff member login they access their account through the new password</li> <li>2. They can no longer access their account through their old password</li> </ol>
<b>Status</b>	<b>Pass</b>

Test Case ID	008
Test Title	Viewing Analytics
Test Description	Viewing analytical graphics on the staff dashboard
Pre-Conditions	Must have logged into a staff account and have been redirected to the staff dashboard
Steps to execute	1. Open the staff dashboard while signed into a staff account
Expected Result	1. Analytical charts and graphs appear
Status	Pass

## User Logout

Test Case ID	009
Test Title	Logout
Test Description	Logging out of an account
Pre-Conditions	Must be signed into an account
Steps to execute	1. Click log out in the side nav bar on the dashboard
Expected Result	1. Successfully log out of the account and have access to log in again
Status	Pass

## Admin

Test Case ID	010
Test Title	Add staff member - Admin
Test Description	The Admin can create accounts for staff members
Pre-Conditions	Must be logged into an admin account and on the staff index page
Steps to execute	1. Click add new staff 2. Type details of the staff member added to the system

	3. Submit details
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. The details are added to the database</li> <li>2. Otherwise display an error message that the form is not filled in correctly</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>011</b>
<b>Test Title</b>	<b>Delete staff member - Admin</b>
<b>Test Description</b>	The admin can delete staff accounts that are no longer in use
<b>Pre-Conditions</b>	<b>Must be logged into an admin account and on the staff index page</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click delete button for the staff member the admin wants to delete</li> <li>2. Confirm deletion</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. The staff member's details are deleted in the database</li> <li>2. The deleted staff member receives an error when attempting to login</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>012</b>
<b>Test Title</b>	<b>Add role</b>
<b>Test Description</b>	Adding a new role to the database
<b>Pre-Conditions</b>	<b>Must be signed into a staff account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "roles" in the side nav bar on staff dashboard</li> <li>2. Click "add"</li> <li>3. Fill out the form provided</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. A new role is added to the database</li> <li>2. Redirect to the previous page</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>013</b>
<b>Test Title</b>	<b>Add TextAnswer</b>
<b>Test Description</b>	Adding a new text answer

<b>Pre-Conditions</b>	<b>Must be signed into an admin account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "text answers" in side nav bar of the staff dashboard</li> <li>2. Click "add"</li> <li>3. Fill out the form provided</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. A new text answer should be added to the database</li> <li>2. Redirect to the previous page</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>014</b>
<b>Test Title</b>	<b>Edit text answer</b>
<b>Test Description</b>	<b>An admin can edit a text answer</b>
<b>Pre-Conditions</b>	<b>Must be signed into an admin account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "text answers" in the side nav bar on the dashboard</li> <li>2. Click "edit" on the right of a text answer row</li> <li>3. Alter the text answer fields</li> <li>4. Click "confirm"</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>2. Successfully log out of the account and have access to log in again</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>015</b>
<b>Test Title</b>	<b>Add RangeQuestion</b>
<b>Test Description</b>	Adding a new range question
<b>Pre-Conditions</b>	<b>Must be signed into an admin account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "range questions" in the side nav bar of the dashboard</li> <li>2. Click "add"</li> <li>3. Fill out the form provided</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. A new range question should be added to the database</li> <li>2. Redirect to the previous page</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>016</b>
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<b>Test Title</b>	<b>Edit RangeQuestion</b>
<b>Test Description</b>	Editing a range question
<b>Pre-Conditions</b>	<b>Must be signed into an admin account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "range question" in the side nav bar on the dashboard</li> <li>2. Click "edit" on the right of a range question row</li> <li>3. Alter the range question fields</li> <li>4. Click "confirm"</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. The range question is updated in the database</li> <li>2. Redirected to the previous page</li> </ol>
<b>Status</b>	<b>Pass</b>

<b>Test Case ID</b>	<b>017</b>
<b>Test Title</b>	<b>Delete RangeQuestion</b>
<b>Test Description</b>	Deleting a range question
<b>Pre-Conditions</b>	<b>Must be signed into an admin account</b>
<b>Steps to execute</b>	<ol style="list-style-type: none"> <li>1. Click "range question" in the side nav bar on the dashboard</li> <li>2. Click "Delete" on the right of a range question row</li> <li>3. Confirm deletion</li> </ol>
<b>Expected Result</b>	<ol style="list-style-type: none"> <li>1. The range question is deleted from the database</li> <li>2. Redirected to the previous page</li> </ol>
<b>Status</b>	<b>Pass</b>