

Politico - Test Plan

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Introduction

This document discusses the general approach taken to testing through the use of Test Driven Development and outlines the detailed test plan taken to ensure the application works as expected.

Test Driven Development

This project is being developed with testing as the most important factor as when an application/game gets large, it becomes increasingly more difficult to solve issues and to have confidence in the codebase when developing new features or changing an existing feature.

Test Driven Development (TDD) is the act of writing code in such a way so that it can be easily tested which, in turn, leads to more maintainable code that is also easier to reason about as it has to be verbose in order for tests to be written for it. This means that if functionality can be written more concisely so that it is harder to reason about, the preferred way of writing code will eventually occur as tests will need to be written which proves difficult when code is vague and hard to understand.

Unit Tests

The most common tests are unit tests whereby the smallest unit of functionality can have a test written for it that runs the functionality and checks that the result is as expected if the functionality is working; These tests are all then ran before new code can be committed, ensuring that old code isn't being broken by the new changes.

End To End Tests

The other kind of tests are end to end tests (E2E) which test functionality more literally by carrying out actions that a user would. These can be carried out within the code like unit tests using libraries such as Selenium, but can also be carried out by an actual person following a given test plan (outlined on the next page[s])

User Testing

Alongside TDD, a big part of the TDD methodology being followed will involve external user testing by users following a given test plan and giving feedback on their results, ensuring that they match the expected results and setting tasks for future sprints to resolve any issues the users' faced. Ideally this user testing would take place at the end of each sprint where new functionality was introduced, but would most likely take place at the end of an entire epic as it may be hard for people to find the time. As the developer, I will also carry out this testing myself.

Test Plan

The following section of the document provides a template table of test cases that a user would fill out whilst testing the project. It also contains some tests that have been completed by myself to demonstrate how the table will be used.

Test Case Table Template

The following table is a template to be followed by anybody who tests the game. [...] is used as a replacement for user input.

Tester: [...]	Date of Test: [...] / [...] / [...]	Device Used: [...]
Functionality being tested	Expected outcome	Actual outcome and Comments
Starting a new game	When the user launches the game they should be able to click a Start New Game button which will launch the game view.	[...]
Loading an existing game	Once the user has started a new game, upon refreshing the browser window, they should be presented with the option to continue that game.	[...]
Rendering the Game View	When the user has started a new game or continued an existing game, they should be presented with a game view that shows the following: <ul style="list-style-type: none">• A collection of attributes.• A map of the UK.• A "next turn" button.• A turn counter showing the number of turns that have passed.	[...]
Responsive Design	When the user resizes their browser window the user interface within the game should all scale and be usable.	[...]
Making a Decision	When the user clicks the Next Turn button, a modal should popup with a decision on it, allowing them to respond Yes or No. When the user responds to the decision, their attributes at the top of the screen should be adjusted accordingly.	[...]
Triggering the "End Screen" by losing	When the user's has made enough decisions for any of their attributes to fall below 0, an "End Screen" should appear on the screen giving the user the ability to exit back to the start screen and showing them the following: <ul style="list-style-type: none">• The number of decisions they made during their playtime• The last known state of each of their nation's attributes.	[...]
Triggering the "End Screen" by winning	When the user has made their maximum number of decisions and	[...]

	<p>still has each attribute above 0, an “End Screen” should appear on the screen giving the user the ability to exit back to the start screen and showing them the following:</p> <ul style="list-style-type: none"> • The last known state of each of their nation’s attributes 	
Exiting back to the start screen	<p>When the user has either won or lost the game, they should be able to click and “Exit” button which should take them to the start screen that only has the option to start a new game.</p>	[...]
Hovering over a region on the map	<p>When the user is using a mouse and hovers over a region on the map, that region should be highlighted to show the user that they can interact with it.</p>	[...]
Viewing information about a region on the map	<p>When the user clicks on a region on the map, a modal should pop up showing them the following:</p> <ul style="list-style-type: none"> • The population of the region • The statistics of the region that would influence how it leans on the political spectrum (These are subject to change and so haven’t been listed in the test plan) <p>It should also give the user the option of closing the modal which should return them to the normal game view.</p>	[...]

Test Results

The following table is an example of a user test performed by myself. Every bit of functionality that currently exists in the game is tested. This should also be replicated by end to end tests as mentioned on page 1 and any new functionality should be added to the table to ensure it is always up to date.

Tester: Joshua Jackson	Date of Test: 22/12/2019	Device Used: Windows 10 Laptop using the Chrome web browser
Functionality being tested	Expected outcome	Actual outcome and Comments
Starting a new game	When the user launches the game they should be able to click a Start New Game button which will launch the game view.	Clicking the New Game button launched the game view.
Loading an existing game	Once the user has started a new game, upon refreshing the browser window, they should be presented with the option to continue that game.	After starting a new game, refreshing the browser window prompted me with the option of continuing my previous game.
Rendering the Game View	When the user has started a new game or continued an existing game, they should be presented with a game view that shows the following: <ul style="list-style-type: none">• A collection of attributes.• A map of the UK.• A "next turn" button.• A turn counter showing the number of turns that have passed.	The game view was rendered as expected however the map of the UK seemed a bit small which left a lot of space.
Responsive Design	When the user resizes their browser window the user interface within the game should all scale and be usable.	When resizing the browser window, it resized successfully all the way down to a 320px device.
Making a Decision	When the user clicks the Next Turn button, a modal should popup with a decision on it, allowing them to respond Yes or No. When the user responds to the decision, their attributes at the top of the screen should be adjusted accordingly.	When clicking the next turn button I was presented with a modal that allowed me to click Yes or No. When I clicked Yes or No (tried with both) the modal closed, my turn count increased and my attributes were modified slightly.
Triggering the "End Screen" by losing	When the user's has made enough decisions for any of their attributes to fall below 0, an "End Screen" should appear on the screen giving the user the ability to exit back to the start screen and showing them the following: <ul style="list-style-type: none">• The number of decisions they made during their playtime• The last known state of each of their nation's attributes.	Upon making enough decisions to get a 0 on my financial attribute I was presented with an end screen that showed that I had lost and my relevant attributes/statistics.
Triggering the "End Screen" by winning	When the user has made their maximum number of decisions and still has each attribute above 0, an "End Screen" should appear on the screen giving the user the ability to	Upon making enough decisions to win the game I was presented with an end screen that showed that I had won the game.

	<p>exit back to the start screen and showing them the following:</p> <ul style="list-style-type: none"> The last known state of each of their nation's attributes 	
Exiting back to the start screen	When the user has either won or lost the game, they should be able to click and "Exit" button which should take them to the start screen that only has the option to start a new game.	Exiting back to the start screen in both of the above scenarios worked as expected.
Hovering over a region on the map	When the user is using a mouse and hovers over a region on the map, that region should be highlighted to show the user that they can interact with it.	Hovering over any region on the map highlighted said region a colour.
Viewing information about a region on the map	<p>When the user clicks on a region on the map, a modal should pop up showing them the following:</p> <ul style="list-style-type: none"> The population of the region The statistics of the region that would influence how it leans on the political spectrum (These are subject to change and so haven't been listed in the test plan) <p>It should also give the user the option of closing the modal which should return them to the normal game view.</p>	<p>When clicking on most of the regions, it worked as expected, I got a popup that showed the expected details about each region I clicked on and then when I clicked the back button the game view returned to normal.</p> <p>However when clicking on Ireland the next turn button disappeared (as with the other regions) but no region popup appeared.</p>