Test Plan

FDM05

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1. Test Strategy

The project will take a Test-Driven Development (TDD) approach through a variety of methods.

Initial functionality will be created through the passing of automated unit tests to ensure each piece of functionality works as intended. This allows for fast detection and response of test failures in subsequent changes before spending time in the manual testing phase.

To accompany this, there will also be automated component testing on the server API to highlight issues of high-level interoperability of lower-level code. It will be much less focused and robust than unit testing but provides more cover for the whole software solution and its architecture. Combining the two approaches will reinforce the benefits provided by both, indicating any issues as they arise immediately upon making code changes.

End-to-end test coverage will be provided by manually testing each functional requirement in detail. The test cases can be run throughout development upon completion of the associated requirement, for fast validation of the functionality. This can be made simple by working on a Kanban board, where each requirement can be tested and tracked as appropriate through user stories. Upon project completion, each test case can be run again as a form of regression testing, to ensure end-to-end reliability for the application before submission.

The manual test cases are outlined in section 2, whereas the unit tests and component tests will be determined in the development process where appropriate. depending on the chosen technical approach.

2. Functional Test Scripts

2.1. Authentication

Test Case	Details
ID & Name	1.01. Account Creation
Related Requirement(s)	UA01, UA11
Pre-requisites	User must not be logged in.
Execution Steps	Navigate to the account creation page.
	2. Fill the form with valid details for a new account.
	3. Submit the form.
Expected Outcome	An activation link is sent to the email address used for registration.

Test Case	Details
ID & Name	1.02. Account Activation
Related Requirement(s)	UA02
Pre-requisites	User must not be logged in.
Execution Steps	Create a new account.
	2. Await arrival of the activation email.
	3. Click the link in the aforementioned email.
Expected Outcome	The user is subsequently directed to the application, logged in, and
	redirected to the dashboard.

Test Case	Details
ID & Name	1.03. Log In – Non-Activated Account
Related Requirement(s)	UA03
Pre-requisites	User must not be logged in.
Execution Steps	Create a new account.
	2. Immediately navigate to the login page.
	Attempt to login with the newly created details.
Expected Outcome	The user is prompted with a message informing them to activate their
	account.

Test Case	Details
ID & Name	1.04. Log In – Activated Account
Related Requirement(s)	UA03
Pre-requisites	User must not be logged in.
Execution Steps	Create a new account.
	Follow the activation process in the subsequent email.
	3. Log out to end the resulting session.
	4. Attempt to login with the newly created details.
Expected Outcome	The user is subsequently logged in and redirected to the dashboard.

Test Case	Details
ID & Name	1.05. Log Out
Related Requirement(s)	UA04
Pre-requisites	User must be logged in to an active session.
Execution Steps	Log in to a pre-existing test account.
	Confirm a new session is created by observing the redirect to the dashboard.
	Attempt to end the current session by selecting 'log out' from the navigation bar.
Expected Outcome	The user's session is ended and they are redirected to the home page.

Test Case	Details
ID & Name	1.06. Change Email Address
Related Requirement(s)	UA09
Pre-requisites	User must be logged in to an active session.
Execution Steps	1. Navigate to the user details page.
	2. Fill in the email field with a new email address.
	3. Submit the form.
Expected Outcome	A confirmation link is sent to the new email address.

Test Case	Details
ID & Name	1.07. Log In – Super User Account
Related Requirement(s)	UA10
Pre-requisites	User must not be logged in.
Execution Steps	 Navigate to the login page,
	2. Provide details for the super user account email and password.
	3. Submit the login form.
Expected Outcome	The user is subsequently logged in and redirected to the dashboard
	with admin privileges.

Test Case	Details
ID & Name	1.08. Request Data Removal
Related Requirement(s)	UA16
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Navigate to the user details page.
	2. Select the 'Delete' button.
Expected Outcome	The user is logged out and login is now disallowed for this account.

Test Case	Details
ID & Name	1.09. Request Data Removal
Related Requirement(s)	UA17
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Navigate to the admin dashboard page.
	2. Select an account from the delete requests.
	3. Delete the account.
Expected Outcome	The user should be removed from the delete requests, and all data
	should be removed from the database.

2.2. Input Validation

Test Case	Details
ID & Name	2.01. Registration – Invalid Name Format
Related Requirement(s)	IV01
Pre-requisites	User must not be logged in.
Execution Steps	Navigate to the account creation page.
	2. Fill in the form with valid details.
	3. Provide an invalid value for the name field.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them of the correct
	name format.

Test Case	Details
ID & Name	2.02. Registration – Invalid Email Format
Related Requirement(s)	IV01
Pre-requisites	User must not be logged in.
Execution Steps	 Navigate to the account creation page. Fill in the form with valid details.
	3. Provide an invalid value for the email field.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them of the correct email format.

Test Case	Details
ID & Name	2.03. Registration – Invalid Password Format
Related Requirement(s)	IV01
Pre-requisites	User must not be logged in.
Execution Steps	 Navigate to the account creation page.
	2. Fill in the form with valid details.
	Provide an invalid value for the password field.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them of the correct
	password restrictions.

Test Case	Details
ID & Name	2.04. Registration – Invalid Username Format
Related Requirement(s)	IV01
Pre-requisites	User must not be logged in.
Execution Steps	 Navigate to the account creation page.
	2. Fill in the form with valid details.
	Provide an invalid value for the username field.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them of the correct
	username format.

Test Case	Details
ID & Name	2.05. Registration – Reserved Email
Related Requirement(s)	IV01
Pre-requisites	User must not be logged in.
Execution Steps	Navigate to the account creation page.
	2. Fill in the form with valid details.
	3. Provide an email address that is already registered in the
	database.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them that the email
	provided is already in use.

Test Case	Details
ID & Name	2.06. Registration – Reserved Username
Related Requirement(s)	IV01
Pre-requisites	User must not be logged in.
Execution Steps	Navigate to the account creation page.
	2. Fill in the form with valid details.
	3. Provide a username that is already registered in the database.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them that the
	username provided is already in use.

Test Case	Details
ID & Name	2.07. Log In – Invalid Username
Related Requirement(s)	IV02
Pre-requisites	User must not be logged in.
Execution Steps	1. Navigate to the log in page.
	2. Provide a username that is not registered in the database.
	3. Submit the form.
Expected Outcome	The user is prompted with a message informing them that the
	username provided is not in use.

Test Case	Details
ID & Name	2.08. Log In – Incorrect Password
Related Requirement(s)	IV02
Pre-requisites	User must not be logged in.
Execution Steps	Navigate to the log in page.
	2. Provide a username that is already registered in the database.
	3. Supply a password that does not match the one stored in the
	database for the given username.
	4. Submit the form.
Expected Outcome	The user is prompted with a message informing them that the
	password provided is incorrect.

Test Case	Details
ID & Name	2.09. Create / Edit Company – Invalid Company Name Format
Related Requirement(s)	IV03
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Open the 'create' modal or the 'edit' modal for a company.
	2. Supply an invalid company name.
	3. Submit the form.
Expected Outcome	The admin is prompted with a message informing them of the correct
	company name format.

Test Case	Details
ID & Name	2.10. Create / Edit Company – Invalid Company Symbol Format
Related Requirement(s)	IV03
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Open the 'create' modal or the 'edit' modal for a company.
	Supply an invalid company symbol.
	3. Submit the form.
Expected Outcome	The admin is prompted with a message informing them of the correct
	company symbol format.

Test Case	Details
ID & Name	2.11. Create / Edit Company – Reserved Company Name
Related Requirement(s)	IV03
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Open the 'create' modal or the 'edit' modal for a company.
	2. Supply a company name that is already in use.
	3. Submit the form.
Expected Outcome	The admin is prompted with a message informing them that a company
	already exists with the given name.

Test Case	Details
ID & Name	2.12. Create / Edit Company – Reserved Company Symbol
Related Requirement(s)	IV03
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	3. Open the 'create' modal or the 'edit' modal for a company.
	4. Supply a company symbol that is already in use.
	5. Submit the form.
Expected Outcome	The admin is prompted with a message informing them that a company
	already exists with the given symbol.

2.3. Broker Account Verification

Test Case	Details
ID & Name	3.01. Not Verified – Account Restrictions
Related Requirement(s)	UA06
Pre-requisites	User must be logged in to a non-verified user account.
Execution Steps	1. Observe the account balance on the navigation bar.
	2. Observe the companies in the dashboard.
Expected Outcome	The account balance should be £0.
	 The buy button should be disabled for company shares.

Test Case	Details
ID & Name	3.02. Not Verified – Credit Card Details
Related Requirement(s)	UA06, UA07
Pre-requisites	User must be logged in to a non-verified user account.
Execution Steps	1. Navigate to the user details page.
	Observe the stored credit card information.
Expected Outcome	The stored credit card details should be empty.

Test Case	Details
ID & Name	3.03. Verification Process
Related Requirement(s)	UA06, UA08
Pre-requisites	User must be logged in to a non-verified user account.
Execution Steps	 Navigate to the user details page.
	2. Fill in the credit card form with valid details.
	3. Submit the form.
	4. Observe the account balance on the navigation bar.
Expected Outcome	The account balance should be £50,000.

2.4. Stock Trading

Test Case	Details
ID & Name	4.01. View Share Pricing
Related Requirement(s)	ST01
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Navigate to the dashboard.
	2. Observe the list of companies.
Expected Outcome	Each company should display unique information for the following:
	• Close
	Open
	High
	• Low
	Volume
	Gains

Test Case	Details
ID & Name	4.02. Purchase Shares
Related Requirement(s)	ST02
Pre-requisites	User must be logged in to a verified user account with sufficient available funds to purchase shares.
Execution Steps	 Navigate to the dashboard.
	Observe the current available funds and portfolio value.
	3. Observe the currently held shares for any given company.
	4. Open the 'buy' modal for the company.
	5. Purchase single / multiple shares.
	6. Submit the modal.
	7. Observe the currently held shares for the company.
	8. Observe the current available funds and portfolio value.
Expected Outcome	The available funds should have decreased by the current share
	price (multiplied by the number of shares purchased).
	The portfolio value should have increased by the current share
	price (multiplied by the number of shares purchased).
	The currently held shares for the company should have
	increased by the number of shares purchased.

Test Case	Details
ID & Name	4.03. Sell Shares
Related Requirement(s)	ST03
Pre-requisites	User must be logged in to a verified user account with a sufficient
	portfolio size.
Execution Steps	1. Navigate to the dashboard.
	2. Observe the current available funds and portfolio value.
	3. Observe the currently held shares for any given company,
	where the value is greater than 0.
	4. Open the 'sell' modal for the company.
	5. Sell single / multiple shares.
	6. Submit the modal.
	7. Observe the currently held shares for the company.
	8. Observe the current available funds and portfolio value.
Expected Outcome	The available funds should have increased by the current share
	price (multiplied by the number of shares purchased).
	The portfolio value should have decreased by the current share
	price (multiplied by the number of shares purchased).
	The currently held shares for the company should have
	decreased by the number of shares purchased.

Test Case	Details
ID & Name	4.04. Share Sales Disabled
Related Requirement(s)	ST03
Pre-requisites	User must be logged in to a verified user account.
Execution Steps	 Navigate to the dashboard.
	2. Find a company where the currently held shares is 0.
	Observe the 'sell' option for the given company.
Expected Outcome	The 'sell' button should be disabled.

Test Case	Details
ID & Name	4.05. Transaction History
Related Requirement(s)	ST07
Pre-requisites	User must be logged in to a verified user account with sufficient
	transaction history.
Execution Steps	 Navigate to the transactions page.
	2. Observe the latest transactions.
	3. Navigate to the dashboard page.
	4. Make any valid transaction.
	5. Return to the transaction page.
	6. Observe the latest transactions.
Expected Outcome	The new transaction should have appeared in the transaction history.

Test Case	Details
ID & Name	4.06. Admin - View Share Pricing
Related Requirement(s)	ST08
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	1. Navigate to the dashboard.
	2. Observe the list of companies.
Expected Outcome	Each company should display unique information for the following:
	• Close
	Open
	High
	• Low
	Volume
	Gains

Test Case	Details
ID & Name	4.07. Edit Company – Company Name
Related Requirement(s)	ST09
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Open the 'edit' modal for a company.
	2. Supply a valid company name that is not already in use.
	3. Submit the form.
	4. Observe the list of companies.
Expected Outcome	The old company name should have been replaced by the new given
	name.

Test Case	Details
ID & Name	4.08. Edit Company – Company Symbol
Related Requirement(s)	ST09
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Open the 'edit' modal for a company.
	2. Supply a valid company symbol that is not already in use.
	3. Submit the form.
	4. Observe the list of companies.
Expected Outcome	The old company symbol should have been replaced by the new given
	symbol.

Test Case	Details
ID & Name	4.09. Create Company
Related Requirement(s)	ST10, ST11
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	1. Navigate to the dashboard.
	2. Open the 'create' modal.
	3. Fill in the form with a valid company name and symbol.
	4. Submit the form.
	5. Observe the company list.
Expected Outcome	The new company should be found in the company list with the
	following values generated:
	• Close
	Open
	High
	• Low
	Volume
	Gains

Test Case	Details
ID & Name	4.10. Delete Company
Related Requirement(s)	ST12
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	 Open the 'edit' modal for a company.
	2. Select the 'delete' option.
	3. Observe the list of companies.
Expected Outcome	The given company should not be found in the company list.

Test Case	Details
ID & Name	4.11. Search Company Name (Full) - Existing
Related Requirement(s)	ST04
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Type an existing company name in full into the search field.
	2. Observe the list of companies.
Expected Outcome	The given company should be the only stock visible in the company list.

Test Case	Details
ID & Name	4.12. Search Company Name (Partial) - Existing
Related Requirement(s)	ST04
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Type the first 3 letters of an existing company name into the search field. Observe the list of companies.
Expected Outcome	The given company should visible in the company list.

Test Case	Details
ID & Name	4.13. Search Company Name - Non-Existing
Related Requirement(s)	ST04
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Type a non-existing company name in full into the search field.
	2. Observe the list of companies.
Expected Outcome	The company list should be empty.

Test Case	Details
ID & Name	4.14. Search Company Symbol (Full) - Existing
Related Requirement(s)	ST04
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Type an existing company symbol in full into the search field. Observe the list of companies.
Expected Outcome	The given company should be the only stock visible in the company list.

Test Case	Details
ID & Name	4.15. Search Company Symbol (Partial) - Existing
Related Requirement(s)	ST04
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Type the first 1 letter of an existing company symbol into the search field. Observe the list of companies.
Expected Outcome	The given company should visible in the company list.

Test Case	Details
ID & Name	4.16. Search Company Symbol - Non-Existing
Related Requirement(s)	ST04
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Type a non-existing company symbol in full into the search field. Observe the list of companies.
Expected Outcome	The company list should be empty.

Test Case	Details
ID & Name	4.17. Filter Company List – Gains
Related Requirement(s)	ST05
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Select 'gains' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should only show stocks which have increased in
	value over the past trading day.

Test Case	Details
ID & Name	4.18. Filter Company List – Losses
Related Requirement(s)	ST05
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'losses' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should only show stocks which have decreased in
	value over the past trading day.

Test Case	Details
ID & Name	4.19. Sort Company List – Symbol (Ascending)
Related Requirement(s)	ST06
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'Symbol (Asc)' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should be sorted alphabetically ascending by symbol.

Test Case	Details
ID & Name	4.20. Sort Company List – Symbol (Descending)
Related Requirement(s)	ST06
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'Symbol (Dsc)' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should be sorted alphabetically descending by
	symbol.

Test Case	Details
ID & Name	4.21. Sort Company List – Price (Ascending)
Related Requirement(s)	ST06
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'Price (Asc)' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should be sorted ascending by price.

Test Case	Details
ID & Name	4.22. Sort Company List – Price (Descending)
Related Requirement(s)	ST06
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'Price (Dsc)' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should be sorted descending by price.

Test Case	Details
ID & Name	4.23. Sort Company List – Gains (Ascending)
Related Requirement(s)	ST06
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'Gains (Asc)' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should be sorted ascending by gains over the last
	trading day.

Test Case	Details
ID & Name	4.24. Sort Company List – Gains (Descending)
Related Requirement(s)	ST06
Pre-requisites	User must be logged in to a user account.
Execution Steps	1. Select 'Gains (Dsc)' from the filter list.
	2. Observe the list of companies.
Expected Outcome	The company list should be sorted descending by gains over the last
	trading day.

2.5. User Account Activation / De-Activation

Test Case	Details
ID & Name	5.01. De-Activate User Account (Admin)
Related Requirement(s)	UA12
Pre-requisites	User must be logged in to the admin 'super user' account.
Execution Steps	Navigate to the admin dashboard page.
	2. Search for the user by email or username.
	3. Select a re-activation time and date.
	4. Provide a de-activation reason.
	5. De-activate the account.
	6. Log out
	7. Attempt to log in with the de-activated user's credentials.
Expected Outcome	A message should appear on screen including the selected de-
	activation reason and re-activation date.

Test Case	Details
ID & Name	5.02. De-Activate User Account (No Funds)
Related Requirement(s)	UA13
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Empty the account balance by buying shares.
	2. Only sell shares for a loss.
	3. Repeat steps 1 and 2 until the account balance has completely depleted.
Expected Outcome	The user should be logged out and subsequently unable to login again.

Test Case	Details
ID & Name	5.03. Request User Account Re-Activation
Related Requirement(s)	UA14
Pre-requisites	User must be logged out.
Execution Steps	1. Navigate to the login page.
	2. Select 'trouble logging in'.
	3. Complete the form with details of a de-activated account.
	4. Login to the admin 'super user' account.
	5. Navigate to the admin dashboard page.
Expected Outcome	The activation request for the given account should be present in the
	're-activation' list.

Test Case	Details
ID & Name	5.04. Re-Activate User Account
Related Requirement(s)	UA15
Pre-requisites	Complete Case 5.03.
	User must be logged in to the admin 'super user' account.
Execution Steps	1. Navigate to the admin dashboard page.
	2. Re-activate an account in the 're-activation' list.
	3. Log out.
	4. Login using the re-activated account details.
Expected Outcome	The user should be logged in to the newly re-activated account.

2.6. Reports

Test Case	Details
ID & Name	6.01. Held Shares Report (.xml)
Related Requirement(s)	RT01
Pre-requisites	User must be logged in to a user account.
Execution Steps	Buy any share of any stock.
	Open the portfolio menu from the navigation bar.
	3. Select 'download user report'.
	4. Select '.xml'.
	5. Select 'download'.
Expected Outcome	A browser download should begin for a .xml file containing the desired
	report information for the recently bought stock.

Test Case	Details
ID & Name	6.02. Held Shares Report (.csv)
Related Requirement(s)	RT01
Pre-requisites	User must be logged in to a user account.
Execution Steps	Buy any share of any stock.
	Open the portfolio menu from the navigation bar.
	3. Select 'download user report'.
	4. Select '.csv'.
	5. Select 'download'.
Expected Outcome	A browser download should begin for a .csv file containing the desired
	report information for the recently bought stock.

Test Case	Details
ID & Name	6.03. Custom Stock Report (.xml)
Related Requirement(s)	RT02
Pre-requisites	User must be logged in to a user account.
Execution Steps	Select 'download stock report' from below the stock list.
	2. Select the desired stocks from the list.
	3. Select '.xml'.
	4. Select 'download'.
Expected Outcome	A browser download should begin for a .xml file containing the desired
	report information for the selected stocks.

Test Case	Details
ID & Name	6.04. Custom Stock Report (.csv)
Related Requirement(s)	RT02
Pre-requisites	User must be logged in to a user account.
Execution Steps	Select 'download stock report' from below the stock list.
	2. Select the desired stocks from the list.
	3. Select '.csv.
	4. Select 'download'.
Expected Outcome	A browser download should begin for a .csv file containing the desired
	report information for the selected stocks.

Test Case	Details
ID & Name	6.05. Full Stock Report (.xml)
Related Requirement(s)	RT03
Pre-requisites	User must be logged in to a user account.
Execution Steps	 Select 'download stock report' from below the stock list.
	2. Check the 'select all' box.
	3. Select '.xml'.
	4. Select 'download'.
Expected Outcome	A browser download should begin for a .xml file containing the desired
	report information for all stocks.

Test Case	Details
ID & Name	6.06. Full Stock Report (.csv)
Related Requirement(s)	RT03
Pre-requisites	User must be logged in to a user account.
Execution Steps	Select 'download stock report' from below the stock list.
	2. Check the 'select all' box.
	3. Select '.csv'.
	4. Select 'download'.
Expected Outcome	A browser download should begin for a .csv file containing the desired
	report information for all stocks.