

Test Plan and Execution.

1. Main Menu

Test Case	Result	
Input a valid choice. (1 – main menu)	Execute the run transaction function.	PASS
Empty input.	The message “Invalid input, please try again.” displayed and asked to enter the choice again.	PASS
Input an out-of-range number as the choice. (7)	The message “Invalid choice, please try again.” displayed and asked to enter the choice again.	PASS
Input a string value as the choice. (a)	The message “Invalid input, please try again.” displayed and asked to enter the choice again.	PASS

2. Add Transaction

Test Case	Amount	Category	Type	Date	Result	
Transaction with a positive amount, valid category, type, and date	1000	Health	2 (Expense)	2024-03-17	The transaction was added to the transactions list and saved to the JSON file.	PASS
Adding a transaction with a negative amount.	-1000				The message “Please enter a valid transaction amount.” displayed and asked to enter the amount again.	PASS
Adding a random number with 3 decimal points.	245.684	Health	2 {expense}	2024-03-17	The transaction was added to the transactions list and saved to the JSON file.	Failed The program should prompt the user to say the transaction value is invalid.

A new function called amountInput() was created to validate the validity of the user's input for transaction amount.						
Adding a random number with 3 decimal points. (Same as failed test 3 except now the code changed to fix the issue.)	245.684	Health	2 {expense}	2024-03-17	The message "Please enter a valid transaction amount." displayed and asked to enter the amount again.	PASS
Adding a transaction with an empty category	1000				The message "You can't keep transaction category empty." displayed and asked to enter the category again.	PASS
Adding a transaction with an invalid type format	1000	Health	0		The message "Input is not valid, check and try again. Input should be 1 or 2." displayed and asked to enter the type again.	PASS
Adding a transaction with an invalid date format	1000	Health	2 (Expense)	2024-51-35	The message "Invalid input, please enter valid transaction date formatted as 'yyyy-mm-dd'" displayed and asked to enter the date again.	PASS
Adding a transaction when without the JSON file in the folder	2000	Interest	1 (Income)	2024-03-18	The message "Saved transactions data file does not exist, Adding a new transaction will create one." is displayed and	PASS

					saved into a newly created transactions.json file.	
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3. View Transaction.

Test Case	Result	
Viewing transactions when JSON file is not available	Messages "Saved transactions data file does not exist, Adding a new transaction will create one." And "There are no saved transactions, You need to have saved transactions to complete this action." Displayed and asked the user whether to exit the menu or to exit from the program.	PASS
Viewing transactions when the JSON file is empty.	Messages "Error decoding existing JSON file." And "There are no saved transactions, You need to have saved transactions to complete this action." Displayed and asked the user whether to exit the menu or to exit from the program.	PASS
Viewing transactions when there is only one transaction.	Transaction gets displayed with ID no 1. After the transaction message "All saved transactions loaded." displayed and asked the user whether to exit the menu or to exit from the program.	Passed with a bug. Although the initial test passed, the transaction amount of 500.50 was shown as 500.5.
Instead of adding the float value straight to the list, it will be formatted to a string with 2 decimal values.		
Viewing transactions when there is only one transaction. (Same as test case 2 except now the code stores the transaction amount as a string with two decimal values.)	Transaction gets displayed with ID no 1. After the transaction message "All saved transactions loaded." displayed and asked the user whether to exit the menu or to exit from the program.	PASS
Viewing transactions when there are multiple transactions.	Transactions are displayed with respective IDs. After all the transactions, the message "All saved transactions loaded." is displayed and	PASS

	asks the user whether to exit the menu or to exit from the program.	
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4. Update Transactions

Test Case	Data Updated	Result	
Updating the amount in a transaction	Old amount = 500 New amount = 5000	The transaction amount changes from 500 to 5000 for the transaction the user chooses at the beginning of the update transaction option after the user selects yes in the confirmation message asking whether to update the transaction. In that case, it will update the transaction and ask the user whether they want to change another data type in the selected transaction.	PASS
Updating the type of transaction	Old type - Income New type - Expense	The transaction type changes from Income to Expense for the transaction the user chooses at the beginning of the update transaction option after the user selects yes in the confirmation message asking whether to update the transaction. In that case, it will update the transaction and ask the user whether they want to change another data type in the selected transaction.	PASS
Updating multiple data items in a transaction at once	Old amount = 200 New amount = 2000 Old date – 2024-02-03 New date – 2024-03-02	The transaction amount changes from 200 to 2000 for the transaction the user chooses at the beginning of the update transaction option after the user selects yes in the confirmation message asking whether to update the transaction. In that case, it will update the transaction and ask the user whether they want to change	PASS

		another data type in the selected transaction. After selecting yes and selecting data type data to change it will change the date from existing one to the new one after the user selects yes in the confirmation message asking whether to update the transaction. In that case, it will update the transaction and ask the user whether they want to change another data type in the selected transaction.	
Updating nonexistent transaction ID	None	If the user enters a nonexistent ID, the program shows the message "Please enter a valid transaction ID." and asks for the ID to be entered again.	PASS

5. Delete Transaction

Test Case	Result	
Test deleting a transaction.	First, the program shows all the saved transactions and then asks the user to choose a transaction ID from the saved transaction; when the user inputs an ID, the program shows that specific transaction and asks for the user's confirmation. If the user gives yes to the confirmation, the transaction gets deleted and asks the user whether to exit the menu or to exit from the program.	PASS
Test cancelling deletion of a transaction	First, the program shows all the saved transactions and then asks the user to choose a transaction ID from the saved transaction; when the user inputs an ID, the program shows that specific transaction and asks for the user's confirmation. If the user gives no to the confirmation, the program shows the message "Transaction not deleted." and asks the user whether to exit the menu or to exit from the program.	PASS
Test deleting nonexistent transaction ID.	If the user enters a nonexistent ID program shows the message "Please enter a valid transaction ID." and asks for the ID to be entered again.	PASS

6. Transaction Summary

Test Case	Result	
Test displaying summary when there are no transactions saved	Messages “There are no saved transactions, You need to have saved transactions to complete this action.” Displayed and asked the user whether to exit the menu or to exit from the program.	PASS
Test displaying summary when there is only one transaction	The total number of transactions is shown as 1, the income transaction count is 1, and the value of total income transactions is equal to a saved transaction. The expense transaction count is 0, and the total value is 0.	Passed with a bug. Although the initial test passed, the transaction amount of 150.50 was shown as 150.5.
Instead of adding and showing the sum of float values straight, it will be formatted to a string with 2 decimal values and shown to the user.		
Test displaying summary when various numbers of income and expense transactions saved	The total number of transactions is shown as 5, the income transaction count is 3, and the value of total income transactions is equal to the sum of the amount of income transactions, the expense transaction count is 2, and the value of total expenses transactions is equal to the sum of the amount of income expense transactions.	PASS

Test Summary.

Total Test Cases - 27

Passed test cases - 26

Failed test cases – 1

Adding a random number with 3 decimal points.	245.684	Health	2 {expense}	2024-03-17	The transaction was added to the transactions list and saved to the JSON file.	Failed The program should
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						prompt the user to say the transaction value is invalid.
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Solution - A new function called amountInput() was created to validate the validity of the user's input for the transaction amount.

Bugs found – 2

Viewing transactions when there is only one transaction.	Transaction gets displayed with ID no 1. After the transaction message “All saved transactions loaded.” displayed and asked the user whether to exit the menu or to exit from the program.	<p>Passed with a bug.</p> <p>Although the initial test passed, the transaction amount of 500.50 was shown as 500.5.</p>
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Solution - Instead of adding the float value straight to the list, it will be formatted to a string with 2 decimal values.

Test displaying summary when there is only one transaction	<p>The total number of transactions is 1, the income transaction count is 1, and the value of total income transactions is equal to a saved transaction.</p> <p>The expense transaction count is 0, and the total value is 0.</p>	<p>Passed with a bug.</p> <p>Although the initial test passed, the transaction amount of 150.50 was shown as 150.5.</p>
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Solution - Instead of adding and showing the sum of float values straight, it will be formatted to a string with 2 decimal values and shown to the user.