

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 | Date | Result | |
|--|---------|----------|------------|---|------|
| Transaction with a positive amount, valid category, and date | 1000 | Health | 2024-03-17 | The transaction was added to the transactions dictionary 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 | 2024-03-17 | The message “Please enter a valid transaction amount.” displayed and asked to enter the amount again. | PASS |
| Adding a transaction with a new category. | 500.00 | Salary | 2024-04-18 | A new key value called salary is created in the dictionary, and transaction details are saved inside | PASS |

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|--|--|----------|------------|--|------|
| | | | | the list as a value of the key. | |
| Adding a transaction with an existing category. | 250.00 | Health | 2024-04-18 | A new data set added to the existing key value called health | 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 date format | 1000 | Health | 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 | 2024-03-18 | The message “Saved transactions data file does not exist, Adding a new transaction will create one.” is displayed and saved into a newly created transactions.json file. | PASS |
| Adding transactions using bread_bulk_transactions_from_file function, When there is no file in the folder | The message “filename not found.” is displayed and asks the user whether to exit the menu or to exit from the program. | | | | PASS |
| Adding transactions using bread_bulk_transactions_from_file function When there are a couple of transactions in the file | The transactions were added to the transactions dictionary and saved to the JSON file. | | | | PASS |

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. | The transaction gets displayed with ID no 1 and its category. 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 and categories. After all the transactions, the message “All saved transactions loaded” is displayed and asks the user whether to exit the menu or exit from the program. | PASS |

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 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 | PASS |

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|---|------|--|------|
| | | 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. After selecting yes and selecting data type data to change, the date will be changed from the existing one to the new one. After the user selects yes in the confirmation message, the user will be asked 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 category | None | If the user enters a nonexistent category, the program shows the message "Please enter a valid transaction category." and asks for the category to be entered again. | PASS |
| 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 |

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| 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 category | If the user enters a nonexistent category, the program shows the message "Please enter a valid transaction category." and asks for the category to be entered again. | PASS |
| Test deleting nonexistent transaction ID. | 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 |

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 various numbers of income and expense transactions are 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 - 28

Passed test cases - 28

Failed test cases – 0