**Testing functionalities of a Python Banking System**

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The following test cases were recorded in Python’s Spyder version 3.7 console running bank\_system.py file.

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|  | Test Case | Input | Expected result | Actual result |
| 1 | Insert invalid input to Admin login method | 1, password | Crash | Login failed. Loops back to Admin login |
| 2 | Login as a customer | Smith, 1234 | Login successful | Customer logged in and customer menu available |
| 3 | Insert invalid inputs to Transfer money method | False, #342, foo, !5 | Crash | Invalid input, but loops back after each invalid input |
| 4 | Searching for non-existent customers | Carl | Invalid input | Method returns the invalid input and goes back to previous page |
| 5 | Creating new customers | Harrison, Marsden, 4418, McKinley Avenue, Denver, CO 80202, 1200, 2.36, 600, 3.65, 800 |  |  |
| 6 | Deleting customers | Smith | Delete customer | Removed customer White from accounts list |
| 7 | Updating admin name | John, Lindquist | Successful update | Admin name changed to John Lindquist |
|  | Insert invalid input for updating admin address | Sweden, 64, 116TBC, Stockholm | Crash | The program did not crash but replaced the previous values with the given values |
| 8 | Producing management report | Input not required | Prints details of accounts | Calculates yearly interest rate on all accounts, sums total customers, balance and all overdraft limits |
| 9 | Save customers and admins into a file | Input not required | Saves data to file | Program saves data into a file when a login or logout occurs |
| 10 | Load customers and admins from a file | Input not required | Loads data to program | Program loads data from a file before user input |
| 11 | Login to a customer account as admin | Smith | Login successful | Login successful and displayed customer main page |
| 12 | Insert invalid values to Customer depositing money option | 1/3 | Crash | Program loops until an integer is inserted |
| 13 | Customer withdrawing money | 12 | Successful transfer | Amount was withdrawn: 12 and updated balance |
| 14 | Insert invalid input for updating customer name | 34.3, f6h! | Crash | The program did not crash but replaced the previous values with the given values |
| 15 | Updating customer address | 16, Lawn Street, Austin, 61145PS | Update address | Customer address was updated successfully |
| 16 | Invalid input to admin or account menu | 15 | Crash | While loop prevents the program from crashing |
| 17 | Testing overdraft limits on customer accounts | 5500 (customer Smith’s balance:5000, overdraft limit:300) | Decline withdraw | Declined. Withdraw method calculates the limit before removing amount |