Project Test Plan & ICD

CMSC 495 6380

6/18/2021

Group 5

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**Revision History**

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| --- | --- | --- |
| **Date** | **Name** | **Description** |
| 6/18 | Summer | Created document with cover page, revision history table, and outline. |
| 6/21 | Sean | Added Authentication module related Test Cases and ICD |
| 6/21 | Keith | Added Transaction module test cases and ICD |
| 6/22 | Summer | Added Interest Accrual test cases and ICD. Combined formatting for test cases. |
| 6/22 | Keith | Adjusted formatting for transaction subsystem and misspelled methods |
| 6/22 | Summer, Sean , Keith | Final review |
| 7/11 | Keith | Added test cases for Transactions |
| 7/11 | Sean | Added test cases for Registration, Login, Logout, and Authentication |

**Test Cases**

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| **Test case #** | **Requirement Number** | **Test Description** | **Expected Result** | **Actual Result** | **Pass/ Fail** |
| 1 | 1, 3 | User attempts to register with valid username, password, and email | Registration success message, database file updated with new record | Data entered:    Result: | Pass |

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| 2 | 1, 3 | User attempts to register with invalid username | Registration username exists failure message | Data entered:    Result: | Pass |

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| 3 | 1, 3 | User attempts to register with valid username, invalid password | Registration password complexity failure message | Data entered:    Result: | Pass |
| 4 | 1, 3 | User attempts to register with valid username and password, invalid email syntax | Registration invalid email failure message | Data entered:    Result: | Pass |

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| 5 | 1, 3 | User attempts to register with valid username and password, valid email syntax that already is in user | Registration email exists failure message | Data entered:    Result: | Pass |
| 6 | 1, 3 | User attempts to register with valid, username, password, and email, password confirmation does not match | Registration passwords do no match failure message | Data entered:    Result: | Pass |

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| 7 | 1, 2, 4 | User attempts to login with valid username and password | Login success message, log file success record added | Data entered:    Result: | Pass |

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| 8 | 1, 2, 4 | User attempts to login with invalid username | Login username does not exist failure message, log file failure record added | Data entered:    Result: | Pass |

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| 9 | 1, 2, 4 | User attempts to login with valid username, invalid password | Login password does not match failure message, log file failure record added | Data entered:    Result: | Pass |

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| 10 | 1, 2 | Logged in user attempts to logout | Logout success message | Result: | Pass |

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| 11 | 1, 2 | Non-logged in user attempts to access restricted page (/home, /logout) | Cannot access webpage message | Data entered (note: access to restricted pages by non-logged in users can only by attempted by directly invoking the URLs):   * “127.0.0.1:5000/logout” * “127.0.0.1:5000/home”   Result: | Pass |

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| 12 | 5, 11 | Logged in user chooses checking and deposit. User is prompted for amount. User enters $20 dollars and $20 dollars is added to the balance. The user then is shown the balance of their checkings and savings. | Web page refreshes and balance of checkings and savings shows. $20 is added to checkings. | Initial Status    Deposit | Pass |
| 13 | 5, 11 | Logged in user chooses savings and deposit. User is prompted for amount. User enters $20 dollars and $20 dollars is added to the balance. The user then is shown the balance of their checkings and savings. | Web page refreshes and balance of checkings and savings shows. $20 is added to savings. |  | Pass |

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| 14 | 5, 11 | Logged in user chooses checkings and deposit, user enters “cat”. Then chooses savings and deposit and user enters “dog”. Then chooses savings and deposit and enters -100. | Web page does not allow non-numerical numbers to be inputted | Web page does not allow non-numerical numbers to be inputted | pass |

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| 15 | 6, 11, 12, 13, 14 | Logged in user chooses checkings and withdrawal. Balance of 100 shows and user enters 105. The web page prompts to show there is an overdraft fee of $20. User selects yes, 120 is subtracted from the balance and a negative balance shows. | A negative balance shows after withdrawal is complete | Initial Status    Withdrawal | pass |
| 16 | 6, 11, 12, 13, 14 | Logged in user chooses savings and withdrawal. Balance of 100 shows and user enters 105. The web page prompts to show there is an overdraft fee of $20. User selects yes, 120 is subtracted from the balance and a negative balance shows. | A negative balance shows after withdrawal is complete | Withdrawal status | pass |
| 17 | 8 | There is no add account option | No add account options is on web page |  | pass |

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| 18 | 9, 11 | Logged in user selects transfer from checkings to savings. Balance of checkings and savings shows. User enters $20 to transfer from checkings to savings | $20 dollars is subtracted from checkings and added to savings. New balances are shown. | Initial status    Confirmed transfer | pass |
| 19 | 9, 11 | Logged in user selects transfer from checkings to savings. Balance of checkings and savings shows. User enters $20 to transfer from checkings to savings | $20 dollars is subtracted from savings and added to checkings. New balances are shown | Initial Status    Confirmed status | pass |
| 20 | 9, 11, 12, 13, 14 | Logged in user selects transfer from checkings to savings. Balance of checkings and savings shows. User enters $20 more than balance from checkings to transfer from checkings to savings | Overdraft alert shows. withdrawal amount + 20 dollars is subtracted from checkings and added to savings | Initial status:    Overdraft fee alert | pass |

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| 21 | 10 | User logs out on February 1, 2021 and does not log back in till February 10, 2021. Balance of interest is updated to reflect interest earned over past 9 days. APY for account is 0.05%. | Savings is $100 on February 1 and interest is $0. On February 10, savings is $100, interest is $0.01. (0.005 / 365 \* 100 \* 9 = 0.012319) |  |  |
| 22 | 10 | User logs out on February 1, 2021 and logs back in later that same day on February 1, 2021. Balance of interest does not change because it is only updated once a day. | Savings is $100 and interest is $10 after first log in. User logs out and back in, balances do not change. |  |  |

**ICD**

Data between user and Registration Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Values | Default |
| Registration webpage username input form | Registration Subsystem | request.form(‘username’); NOTE: framework feature | String | Any String | N/A; NOTE: HTML form forces user input |
| Registration webpage password input form | Registration Subsystem | request.form(‘password’); NOTE: framework feature | String | Any String | N/A; NOTE: HTML form forces user input |
| Registration webpage email input form | Registration Subsystem | request.form(‘email’); NOTE: framework feature | String | Any String | N/A; NOTE: HTML form forces user input |
| Registration Subsystem | Registration webpage | flash(message); NOTE: framework feature | String | Username exists failure message | N/A |
| Registration Subsystem | Registration webpage | flash(message); NOTE: framework feature | String | Password complexity failure message | N/A |
| Registration Subsystem | Registration webpage | flash(message); NOTE: framework feature | String | Email exists failure message | N/A |
| Registration Subsystem | Registration webpage | flash(message); NOTE: framework feature | String | Registration success message | N/A |

Data between database and Registration Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Database file | Registration Subsystem | database.query.filter\_by(filter criteria).first(); NOTE: Database API | Database API Query object | Query object containing the database record data | None if no results |
| Registration Subsystem | Database file | database.session.add(new record)  database.commit; NOTE: Database API | Database API Model object | Model object containing kwargs assigning values to record fields | N/A |

Data between user and Logon Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Values | Default |
| Login webpage username input form | Logon Subsystem | request.form(‘username’); NOTE: framework feature | String | Any String | N/A; NOTE: HTML form forces user input |
| Login webpage username input form | Logon Subsystem | request.form(‘password’); NOTE: framework feature | String | Any String | N/A; NOTE: HTML form forces user input |
| Logon Subsystem | Login webpage | flash(message); NOTE: framework feature | String | Username does exist failure message | N/A |
| Logon Subsystem | Login Webpage | flash(message); NOTE: framework feature | String | Password does not match failure message | N/A |
| Logon Subsystem | Login Webpage | flash(message); NOTE: framework feature | String | Login success message | N/A |
| Logout Webpage | Logon Subsystem | HTML GET request; NOTE: framework implementation | N/A; NOTE: GET request alone is sufficient data | N/A | N/A |
| Logon Subsystem | Logout Webpage | flash(message); NOTE: framework feature | String | Logout success message | N/A |

Data between database and Logon Subsystem

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Database file | Logon Subsystem | database.query.filter\_by(filter criteria).first(); NOTE: Database API | Database API Query object | Query object containing the database record data | None if no results |
| Logon Subsystem | Database | Database API Query object field assignment,  database.session.commit(); NOTE: Database API | Datetime | Datetime of login | Current datetime (YYYY-MM-DD HH:MM:SS) |

Data between Interest Accrual Subsystem and Logon Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Logon Subsystem | Interest Accrual Subsystem | session.get(‘user\_id’); NOTE: framework feature global | String | User ID string for authenticated user session | None (if no authenticated user session) |

Data between Interest Accrual Subsystem and database

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Database | Interest Accrual Subsystem | database.fetchall(SQL query); NOTE: Database API | Datetime | Datetime of last login | Current datetime (YYYY-MM-DD HH:MM:SS) |
| Database | Interest Accrual Subsystem | database.fetchall(SQL query); NOTE: Database API | float | Balance of account’s interest | 0.0 |
| Interest Accrual Subsystem | Database | database.execute(SQL query); NOTE: Database API | float | New balance of account’s interest | 0.0 |

Data between log file and Logon Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Logon Subsystem | Database log table | database.session.add(new record)  database.commit; NOTE: Database API | Database API Model object | Model object containing kwargs assigning values to record fields | N/A |

Data between session global and Logon Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Logon Subsystem | Session global | session[‘user\_id’]; NOTE: framework feature global assignment | String | User ID string for authenticated user logged in | N/A |
| Logon Subsystem | Session global | Session.clear(); NOTE: framework feature | N/A; clear request alone is sufficient data | N/A | N/A |

Data between session global and Session Authentication Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Session global | Session Authentication Subsystem | session.get(‘user\_id’); NOTE: framework feature global | String | User ID string for authenticated user session | None (if no authenticated user session) |

Data between Transaction Subsystem and Session Authentication Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Session Authentication Subsystem | Transaction Subsystem | Session\_Authenication.verify() | String | User ID string for authenticated user session | None (if no authenticated user session) |

Data between User and Transaction Subsystem

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Web Page | Transaction Subsystem | Transaction.chooseAcctType() | String | [“Checkings”, “Savings”] | “Checkings” |
| Web Page | Transaction Subsystem Show balance | Transaction.showBalance() | String,  integer | [“Checkings”, “Savings”], 7 digit | “Checkings”,  0000000 |
| Web Page | Transaction Subsystem Withdrawal | Transaction.withdrawal() | float | 0-9999 | 0 |
| Web Page | Transaction Subsystem Deposit | Transaction.deposit() | float | 0-9999 | 0 |
| Web Page | Transaction Subsystem Transfer | Transaction.transfer() | Float, String, String | 0-9999,  [“Checkings”, “Savings”], [“Checkings”, “Savings”] | 0, “Checkings”, “Savings” |

Data between Transaction Subsystem and database

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| --- | --- | --- | --- | --- | --- |
| From | To | Name | Type | Value | Default |
| Transaction Subsystem Show balance | Database | database.fetchall(SQL query); NOTE: Database API | String,  integer | [“Checkings”, “Savings”], 7 digit | “Checkings”,  0000000 |
| Transaction Subsystem | database | database.execute(SQL query); NOTE: Database API | float | 0-9999 | 0 |

Data between Transaction Subsystem and User

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| --- | --- | --- | --- | --- | --- |
| Transaction Subsystem - Alerts | Web Page | flash(message); NOTE: framework feature | String | Withdrawal Amount over Balance | N/A |
| Transaction  Subsystem - Alerts | Web Page | flash(message); NOTE: framework feature | String | Transaction Failed | N/A |
| Transaction  Subsystem - Alerts | Web Page | flash(message); NOTE: framework feature | String | Confirm transaction | N/A |