**!failing**

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* **System Requirements**

Functional Requirements

**Input**

1. IN-001: User shall input whether they want to register an account or login to an existing account.
2. IN-002: User shall input username/email and password for login.
3. IN-003: User shall input username, email, password, full name, biography, interests, courses (name and Course ID), and optionally GPA for initial registration.
4. IN-004: User shall upload profile image for initial registration.
5. IN-005: User shall be able to delete their account.
6. IN-101: User shall be able to edit parts of their profile (profile image, password, courses, biography, email, GPA, interests).
7. IN-102: User shall be able to pick “match” or “pass” on another student.
8. IN-201: User shall be able to send messages to matched students in chat section.
9. IN-202: User shall be able to set up reminder (alert) at an inputted time for a Study Session.
10. IN-203: User shall be able to block a student they are matched with.
11. IN-301: User shall be able to rate the focus, engagement, productivity, and environment of a past Study Session (x/5 stars for each category).
12. IN-302: User shall be able to set account status (active/inactive).
13. IN-401: User shall be able to filter chats by user or course name.

**Task/Database**

1. TK-101: System shall show users all other non-matched and non-passed users for a given course in the user’s inputted courses
2. DB-101: System shall store user information (username, password, email, full name, biography, interests, GPA, courses) in a database.
3. DB-102: System shall record “match” or “pass” for each user on other users.
4. TK-201: System shall use Scaledrone to transfer messages.
5. TK-202: System shall not show students blocked by a user as potential matches.
6. DB-201: System shall store previous chat messages in a database
7. DB-202: System shall remove user information (username, password, email, full name, biography, interests, GPA, courses) from database when user deletes account.
8. TK-301: System shall send in-app reminder alert for Study Sessions
9. TK-302: System shall update user’s rating after Study Sessions as the average of the user’s focus, engagement, productivity, and environment ratings (as inputted in IN-301).
10. TK-401: System shall generate filtered list of matches (as inputted in IN-401).

**Output**

1. OT-101: System shall display Login Screen.
2. OT-102: System shall display Registration Screen.
3. OT-103: System shall display User Profile Screen including profile picture, name, courses, biography, interests, (optionally) GPA, and current average rating.
4. OT-104: System shall display list of courses to match in.
5. OT-105: System shall display un-matched and un-passed users one at a time to the User for a single course.
6. OT-201: Matched Users will be able to see the other user in their “Chat” section.
7. OT-202: System shall display messages in chat.
8. OT-301: System shall display active/inactive status for users in the “Chat” section.
9. OT-302: System shall send in-app reminder alerts for upcoming Study Session at the requested time of the alert.
10. OT-401: System shall display filtered results of matches.

* 1. Non-Functional Requirements (NF)

1. User matches should appear within 3 seconds of the user opening the matches page of the app.
2. The system should operate as an Android application on an Android mobile phone.
3. The application should be usable only to students at Rutgers University.
4. The system shall support at most 20 users chatting concurrently.
5. The system should determine whether given email/username (during login) matches the password within 5 seconds.
6. The system shall display each student card within 5 seconds.
7. The system shall filter and displays matches within 2 seconds per match that Student has (e.g., if Student has 4 matches, Bindr must filter and display filtered matches within 8 seconds).

* **Test Design**

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| Test Case ID | T01 |
| Purpose | Allow User to Login |
| Pre-conditions | On login screen |
| Inputs | User clicks login button |
| Expected Outputs | If invalid login info, error message notifying invalid username and password |
| Post-conditions | On Home screen for the User if valid info or on Login Screen otherwise |
| Design Technique | State Transition Testing |

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| --- | --- |
| Test Case ID | T02 |
| Purpose | Allow User to Register |
| Pre-conditions | On login screen |
| Inputs | User clicks create new account text |
| Expected Outputs | N/A |
| Post-conditions | On Registration screen |
| Design Technique | State Transition Testing |

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| --- | --- |
| Test Case ID | T03 |
| Purpose | Validate Username/Email and Password on Login within 5 seconds |
| Pre-conditions | On login screen and User clicks Login button |
| Inputs | String from Username/Email field and String from Password field |
| Expected Outputs | Alert saying invalid username and password if input does not match database data |
| Post-conditions | Clear fields if invalid input, on Home screen if valid input |
| Design Technique | Equivalence Class |

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| --- | --- |
| Test Case ID | T04 |
| Purpose | Validate that User can input registration info (username, email, password, profile image, full name, biography, interests, and GPA) |
| Pre-conditions | On Registration Screen and User clicks Next Button |
| Inputs | String username, String email, String password, Image profile image, String full name, String biography, String interests, and double GPA from EditText and upload image fields |
| Expected Outputs | Alert saying invalid username or email if those are taken, Alert user if email is not a Rutgers email, Alert user if data failed to upload to database |
| Post-conditions | On Edit Courses Page and User data in Database if valid info is uploaded, on Registration Screen otherwise |
| Design Technique | Equivalence Class |

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| Test Case ID | T05 |
| Purpose | Verify that all matched students will be displayed in User’s Chat List Screen |
| Pre-conditions | User has matched with at least one student |
| Inputs | User opens the Chats List Screen |
| Expected Outputs | Chats List Screen displays all the students that the user has matched with |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T06 |
| Purpose | Check filtering of chats of matched students by course name.  Filtering and displaying must be done within 2 seconds per match that User has. |
| Pre-conditions | -Chats List screen is open.  -User selected the filter by course name option |
| Inputs | User selects the course “Data Structures” |
| Expected Outputs | All the matched students who are in “Data Structures” is displayed in the Chats List Screen |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

|  |  |
| --- | --- |
| Test Case ID | T07 |
| Purpose | Check filtering of chats of matched students by student name.  Filtering and displaying must be done within 2 seconds per match that User has. |
| Pre-conditions | -Chats List screen is open  -User selected the filter by student name option |
| Inputs | User inputs “Bobby Blue” |
| Expected Outputs | All the matched students with the name “Bobby Blue” displayed in the Chats List screen |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T08 |
| Purpose | Check that User’s message has been sent to the matched student |
| Pre-conditions | -Chatbox screen between User and the matched student is open  -User has a message in the input box |
| Inputs | User sends the message “Hello” |
| Expected Outputs | -If there are more than 20 students chatting concurrently, the message will be sent after one of them stops chatting.  -A chat bubble with the message “Hello” is displayed in User’s Chatbox screen  -A chat bubble with the message “Hello” and User’s name is displayed in the matched student’s Chatbox screen. |
| Post-conditions | -User’s input box is cleared  -The message “Hello”, with User marked as the sender, is saved into the database |
| Design Technique | Equivalence class |

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| Test Case ID | T09 |
| Purpose | Check that the previous messages are displayed when User opens up the Chatbox for a matched student who User has chatted with before. |
| Pre-conditions | User and the matched student have exchanged messages before. |
| Inputs | User clicks the matched student’s chat. |
| Expected Outputs | - Previous messages between User and the matched student are displayed in the Chatbox with chat bubbles.  -Messages sent by the matched student are labeled with the matched student's name |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T010 |
| Purpose | Check that there are no messages displayed when User opens up the Chatbox for a matched student who User has not chatted with before. |
| Pre-conditions | User and the matched student have not exchanged messages before. |
| Inputs | User clicks the matched student’s chat. |
| Expected Outputs | No messages will be displayed in the Chatbox |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T011 |
| Purpose | Check that a Study Session is created when User selects the date and time and inputs the reminder time. |
| Pre-conditions | Set Up Study Session Screen is open between User and the matched student. |
| Inputs | -User selects date 11/19/2019  -User selects a time 12:30 PM  -User inputs 15 minutes for reminder time. |
| Expected Outputs | -A Study Session with the reminder time set is created |
| Post-conditions | -Confirmation that Study Session has been successfully set up  -Chatbox between User and the matched student is displayed  -The Study Session is saved into the database |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T012 |
| Purpose | Check that a Study Session is created when User selects the date and time but does not input the reminder time. |
| Pre-conditions | Set Up Study Session Screen is open between User and the matched student. |
| Inputs | -User selects date 11/19/2019  -User selects a time 12:30 PM  -User does not put a reminder time |
| Expected Outputs | -A Study Session is created |
| Post-conditions | -Confirmation that Study Session has been successfully set up  -Chatbox between User and the matched student is displayed  -The Study Session is saved into the database |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T013 |
| Purpose | Check that a Study Session is not created if User does not select a date and selects a time, regardless of the reminder input. |
| Pre-conditions | Set Up Study Session Screen is open between User and the matched student. |
| Inputs | -User does not select a date  -User selects a time 12:30 PM  -User inputs 15 minutes for reminder time. |
| Expected Outputs | Study Session is not created |
| Post-conditions | -Error that the Study Session has not been set up because of invalid input  -Set Up Study Session Screen remains open between User and the matched student. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T014 |
| Purpose | Check that a Study Session is not created if User selects a date and does not select a time, regardless of the reminder input. |
| Pre-conditions | Set Up Study Session Screen is open between User and the matched student. |
| Inputs | -User selects date 11/19/2019  -User does not select a time  -User does not put a reminder time |
| Expected Outputs | Study Session is not created |
| Post-conditions | -Error that the Study Session has not been set up because of invalid input  -Set Up Study Session Screen remains open between User and the matched student. |
| Design Technique | Equivalence class |

|  |  |
| --- | --- |
| Test Case ID | T015 |
| Purpose | Check that a Study Session is not created if User does not select a date and does not select a time, regardless of the reminder input. |
| Pre-conditions | Set Up Study Session Screen is open between User and the matched student. |
| Inputs | -User does not select a date  -User does not select a time  -User inputs 15 minutes for reminder time |
| Expected Outputs | Study Session is not created |
| Post-conditions | -Error that the Study Session has not been set up because of invalid input  -Set Up Study Session Screen remains open between User and the matched student. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T016 |
| Purpose | Verify that User will not be able to see the matched student after User blocked the matched student. |
| Pre-conditions | -Chatbox screen between User and the matched student is open  -User clicked “Block” and a confirmation message is displayed asking User if they are sure that they want to block the matched student. |
| Inputs | User selects “Yes” |
| Expected Outputs | The blocked student is removed from the user’s matches |
| Post-conditions | -Confirmation that the matched student has been blocked  -The Chats List Screen is displayed. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T017 |
| Purpose | Verify that User will still be able to see the matched student after User decides not to block the matched student. |
| Pre-conditions | -Chatbox screen between User and the matched student is open  -User clicked “Block” and a confirmation message is displayed asking User if they are sure that they want to block the matched student. |
| Inputs | User selects “No” |
| Expected Outputs | The matched student remains in User’s matches |
| Post-conditions | Chatbox between User and the matched student is displayed |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T018 |
| Purpose | Check that the Bindr application runs on an Android mobile phone. |
| Pre-conditions | User has Bindr downloaded on their Android mobile phone |
| Inputs | User clicks on Bindr application icon |
| Expected Outputs | Bindr application opens, showing the Login Screen |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T019 |
| Purpose | Verify that User can delete their account. |
| Pre-conditions | -User is in edit mode on their own profile  -User clicked “Delete Account” and a confirmation message is displayed asking User if they are sure they want to delete their account |
| Inputs | User selects “Yes” |
| Expected Outputs | “Account Deleted” is displayed to the user and they are taken to the login screen. |
| Post-conditions | The User is no longer in the database. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T020 |
| Purpose | Verify User can cancel deleting their account |
| Pre-conditions | -User is in edit mode on their own profile  -User clicked “Delete Account” and a confirmation message is displayed asking User if they are sure they want to delete their account |
| Inputs | User selects “No” |
| Expected Outputs | “Cancelled” is displayed to the user. |
| Post-conditions | The User is still in the database. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T021 |
| Purpose | Verify User can edit profile image, password, biography, email, GPA, and interests |
| Pre-conditions | -User is in edit mode on their own profile |
| Inputs | User selects “Confirm” |
| Expected Outputs | “Successfully edited” is displayed to the user and the user’s own profile is displayed--not in edit mode anymore--with the user’s updated information displayed. |
| Post-conditions | The User document in the database has the updated information. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T022 |
| Purpose | Verify User can cancel editing profile image, password, biography, email, GPA, and interests |
| Pre-conditions | -User is in edit mode on their own profile |
| Inputs | User selects “Cancel” |
| Expected Outputs | “Edit cancelled” is displayed to the user and the user’s own profile is displayed--not in edit mode anymore--with the user’s updated information displayed. |
| Post-conditions | The User document in the database has the same information as before the User entered edit mode. |
| Design Technique | Equivalence class |

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| Test Case ID | T023 |
| Purpose | Verify User can edit courses |
| Pre-conditions | -User is in the Edit Courses screen |
| Inputs | User selects “Confirm” |
| Expected Outputs | “Successfully edited” is displayed to the user and they are taken to the home screen |
| Post-conditions | The User is in any added courses’ respective MongoDB documents in the database and not in any removed courses’ respective MongoDB documents in the database. |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T024 |
| Purpose | Verify User can edit courses |
| Pre-conditions | -User is in the Edit Courses screen |
| Inputs | User selects “Cancel” |
| Expected Outputs | “Edit cancelled” is displayed to the user and they are taken to the home screen |
| Post-conditions | The User is still in the courses that the user had previously been in in their respective MongoDB documents in the database and not in the MongoDB documents of any courses that were added during this edit session |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T025 |
| Purpose | Verify User can match with another student |
| Pre-conditions | -User is in the Match screen  -The card of another student in the course the User is finding matches for is displayed |
| Inputs | User selects “Match” |
| Expected Outputs | “Match Request sent” is displayed the user and they are shown another student in the course that they have not yet selected match or pass on within 5 seconds, if one exists. |
| Post-conditions | The student that the User requested to match with is in the User’s list of requested matches in the User’s MongoDB document |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T026 |
| Purpose | Verify User can match with another student |
| Pre-conditions | -User is in the Match screen  -The card of another student in the course the User is finding matches for is displayed |
| Inputs | User selects “Match” |
| Expected Outputs | “Match Request sent” is displayed the user and they are shown another student in the course that they have not yet selected match or pass on within 5 seconds, if one exists. |
| Post-conditions | The student that the User requested to match with is in the User’s list of requested matches in the User’s MongoDB document |
| Design Technique | Equivalence class |

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| Test Case ID | T027 |
| Purpose | Verify that the user can set account status |
| Pre-conditions | User is in their own profile screen and currently has status “Active” |
| Inputs | User taps on account status switch |
| Expected Outputs | Account status is displayed as inactive |
| Post-conditions | The status field in the User’s MongoDB document has value “Inactive” |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T028 |
| Purpose | Verify that the user can set account status |
| Pre-conditions | User is in their own profile screen and currently has status “Inactive” |
| Inputs | User taps on account status switch |
| Expected Outputs | Account status is displayed as active |
| Post-conditions | The status field in the User’s MongoDB document has value “Active” |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T029 |
| Purpose | Verify that the user’s own User Profile Screen including profile picture, name, courses, bio, interests, GPA, and current average rating along with edit button is displayed |
| Pre-conditions | User has navigation bar open |
| Inputs | User taps on “My profile” |
| Expected Outputs | User’s profile Screen including profile picture, name, courses, bio, interests, GPA, and current average rating along with edit button is displayed |
| Post-conditions | N/A |
| Design Technique | State transition |

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| --- | --- |
| Test Case ID | T030 |
| Purpose | Verify that another user’s User Profile Screen including profile picture, name, courses, bio, interests, GPA, and current average rating is displayed |
| Pre-conditions | Another student’s user card is displayed |
| Inputs | User taps on the other student’s user card’s profile picture |
| Expected Outputs | The other student’s profile Screen including profile picture, name, courses, bio, interests, GPA, and current average rating is displayed |
| Post-conditions | N/A |
| Design Technique | State transition |

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| Test Case ID | T031 |
| Purpose | Verify that the matches are displayed within 3 seconds of opening the match screen |
| Pre-conditions | User is on the home screen and has at least one course that has other users in it |
| Inputs | User taps on a course that has other users in it |
| Expected Outputs | The match screen and the card of another user in the selected course is displayed within 3 seconds |
| Post-conditions | N/A |
| Design Technique | State transition |

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| --- | --- |
| Test Case ID | T032 |
| Purpose | Verify that User can rate the focus, productivity, engagement, and environment of a past study session. |
| Pre-conditions | User is on the Study Sessions page of the application |
| Inputs | User selects one of the existing study sessions to enter a rating |
| Expected Outputs | The user is able to enter ratings for productivity, engagement, focus, and environment of the selected study session |
| Post-conditions | The subsequent user’s profile rating is updated in the database. |
| Design Technique | Equivalence class |

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| Test Case ID | T033 |
| Purpose | verify that blocked students do no appear in the list of potential matches for the user |
| Pre-conditions | User should block a previously matched student in the chats screen s |
| Inputs | User opens the homepage and selects the course that the blocked student is from |
| Expected Outputs | The blocked student should not appear in the list of potential matches |
| Post-conditions | The blocked student is the blocked list for the user |
| Design Technique | Equivalence class |

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| --- | --- |
| Test Case ID | T034 |
| Purpose | Verify that the system sends an in-app reminder alert for Study Sessions |
| Pre-conditions | User has not yet set up a reminder for the selected study session. |
| Inputs | User inputs a reminder for a selected study session |
| Expected Outputs | The selected study session has a reminder set in a database. System alerts the user of an upcoming study session at a specified amount of time prior to the study session. |
| Post-conditions | N/A |
| Design Technique | Equivalence Class |

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| --- | --- |
| Test Case ID | T035 |
| Purpose | Verify that the system displays the proper list of matches for the user |
| Pre-conditions | The user has a list of courses that they could look for matches in |
| Inputs | The user prompts the list of courses by opening the home page |
| Expected Outputs | Only the courses that the user is registered for appear in the list of courses. Courses that the user is not registered for do not appear on the list. |
| Post-conditions | N/A |
| Design Technique | Equivalence class |

* **Traceability**

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| Test Case Number | List of the Requirements tested |
| T01 | IN-001, OT-101 |
| T02 | IN-001, OT-102 |
| T03 | IN-002, NF-5 |
| T04 | IN-003, IN-004, DB-101, NF-3 |
| T05 | OT-201 |
| T06 | IN-401, TK-401,OT-401, NF-7 |
| T07 | IN-401, TK-401,OT-401, NF-7 |
| T08 | IN-201, OT-202, TK-201, DB-201, NF-4 |
| T09 | OT-202 |
| T010 | OT-202 |
| T011 | IN-202 |
| T012 | IN-202 |
| T013 | IN-202 |
| T014 | IN-202 |
| T015 | IN-202 |
| T016 | IN-203 |
| T017 | IN-203 |
| T018 | NF-2 |
| T019 | IN-005 |
| T020 | IN-005 |
| T021 | IN-101 |
| T022 | IN-101 |
| T023 | IN-101 |
| T024 | IN-101 |
| T025 | IN-102, TK-101, DB-102, OT-105, NF-6 |
| T026 | IN-102, TK-101, DB-102, OT-105, NF-6 |
| T027 | IN-302, OT-301 |
| T028 | IN-302, OT-301 |
| T029 | OT-103, IN-101 |
| T030 | OT-103 |
| T031 | NF-1 |
| T032 | IN-301, TK-302 |
| T033 | TK-202 |
| T034 | TK-301, OT-302 |
| T035 | OT-104 |