Testing Environment:
Dev Environment: Local Machine
Testing : Local Machine
Staging: CUBoulder Server
Production: CUBoulder Server

Feature 1 : **User Authentication**

Test cases:
- The user can login with valid credentials (valid form of data)
- The user cannot login with invalid credentials
- The user can register new credentials (valid form of data)

Test Data:
- Login: Stored in User Database
    - Username - more than 3 characters less than 15 characters
    - Password - at least 8 characters, one capital letter, one special character, one number
- Register: Stored in User Database
    - Username - more than 3 characters less than 15 characters
    - Password - at least 8 characters, one capital letter, one special character, one number
    - Email - valid email , domain name(.com.edu.net.whatever) & @

Test Results:
- Login:
    - Positive Result - If the user logins with valid credentials, it redirects the user to the game page and posts 200 success to the console

    - Negative Result - If the user logins with invalid credentials, it redirects the user to the login page, displays to the user an error stating "Invalid credentials" and posts 400 error to the console
- Register:
    - Positive Result - If the user registers with valid credentials it redirects to the login page, saves the credentials in the users database, and posts 200 success to the console

    - Negative Result - If the user registers with an invalid format for credentials it redirects to the register page, displays to the user an error stating the requirements of the format, and posts 400 error to the console

Testers:
- Y Person During 4th Week Review (Internal or external)
- Z Person During 4th Week Review
- X Person During 4th Week Review

Feature 2 : **Card Management**

    Test cases:
- Proper Number of Cards in Game (52 cards)
- Proper Suits (13 cards per suit)
- Proper Value Attribution
- Proper Win Conditions
- Player Deck Management

Test Data:
- Sum of Cards in Game:
    - There should be 52 cards in the game available at every point in time
- Suits of Cards:
    - There should be 13 cards of each suit
- Value of Cards:
    - Numerical Cards are worth the card number displayed (2-10) on the card and the values of the face cards are (J-11, Q-12,K-13 & A-14).

Test Results:
- There should be 52 cards in the game at any point in time, 13 of each suit
    - Positive Test:
        - If there are 52 cards in the game at the end of every round, then the game continues
    - Negative Test:
        - If there are 52 cards in the game at the end of every round, then the game stops and an alert of "Improper Game Start over" pops up.
- A higher valued card should always beat a lower ranked card
    - Positive Test:
        - If a higher ranked card beats a lower ranked card, then the draw pile should go to the winning players deck.
    - Negative Test:
        - If a higher ranked card loses to a higher ranked card, then the game stops and an alert of "Improper Game Start over" pops up.
- A tie should result in the increase of the available draw pile
    - Positive Test:
        - If there is a tie, then the game continues.
    - Negative Test:
        - If there is a tie and the draw pile is not increased or either player's deck is increased, then the game stops and an alert of "Improper Game Start over" pops up. .

- Every time a card is played, that card should be removed from the particular player's deck
    - Positive Test:
        - If the card each player is removed from the deck and placed in the draw pile, then the game continues.

- Negative Test:
    - If the cards are played then the game stops and an alert of "Improper Game Start over" pops up.

Testers:
- Y Person During 4th Week Review
- Z Person During 4th Week Review
- X Person During 4th Week Review

Feature 3 : **Account stats - leaderboard**

Test cases:
- After user completes game leaderboard should be updated
- User should be able to view the leaderboard with all the other users in the database
- Leaderboard should display correct rankings between users

Test Data:
- Ranks:
    - Create two users with different rankings, swap the rank

Test Results:
- Leaderboard reflects the correct order of the ranks of the two users before and after the rank is swapped

Testers:
- Y Person During 4th Week Review
- Z Person During 4th Week Review
- X Person During 4th Week Review