Testing Plan
Team Deepcourse

1. High Level Overview
   a. Our testing plan consists of two parts: frontend and backend testing. For the backend, we are going to use Postman to create automated tests, and for the frontend, we are going to conduct manual testing based on the use cases and all the features.
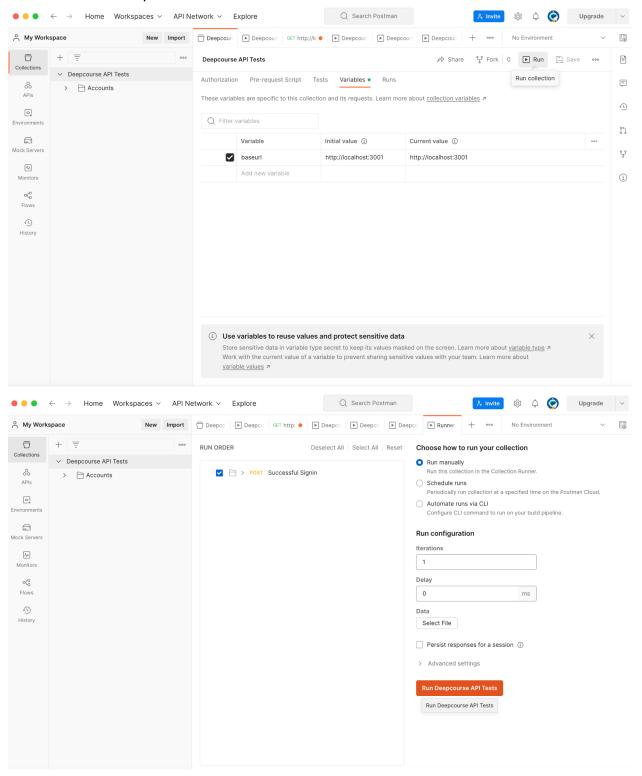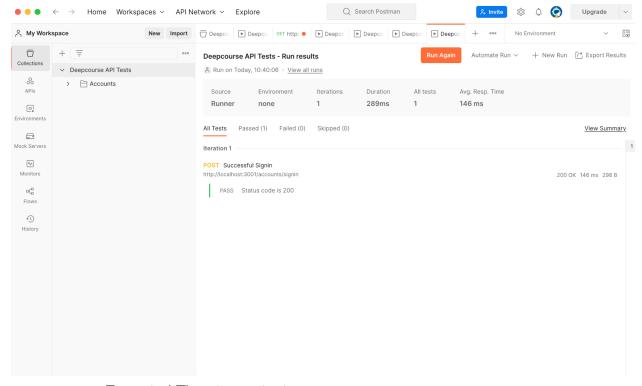2. Prerequisites for testing
   a. Install Postman https://www.postman.com/
   b. Create Postman account
   c. Contact maxwell.panec@sjsu.edu asking for access to the Postman collection. Include your email you used to create your Postman account.
   d. Know how to build the frontend and backend of our project https://github.com/maxpanec/Deepcourse/blob/main/docs/expert_users/expert_user_guide.md
3. Backend
   a. Test cases for features
      i. API for creating an account
      ii. API for signing into an account
      iii. API for resetting username
      iv. API for resetting password
      v. API for creating flashcard set
      vi. API for getting all different flashcard sets for a user
      vii. API for getting individual flashcards in a set
      viii. API for generating a quiz
      ix. API for storing quiz score
      x. API for for getting all quiz scores for a flashcard set
      xi. If unforeseen APIs are created (in the future) they will also be included in the test cases
   b. What test cases will cover
      i. API is successful (200 return code)
      ii. API is given invalid or wrong parameters/body (400 return code)
   c. How to run test cases
      i. Build the backend of the project
      ii. Open postman
      iii. Go to the Deepcourse API Tests collection
      iv. Select run
      v. Click "Run Deepcourse API Tests"
      vi. Verify that all tests passed

d. Example of how to run below

  e. Expected Time to run test cases
    i. 5-10 minutes total
      1. Most time will be setting up environment to run test cases
      2. Actual run time of test cases will be less than 3 minutes

4. Frontend
  a. Features
    i. Signup/signin for accounts
      1. Go to create an account. Input incorrect email address, short username, and weak password. Verify error on form saying invalid information. Follow information given on the form to create an account with valid information. Signout of your account. Go to sign in to account. Input invalid login credentials. Input correct credentials and verify you are now logged in (home page should display sign out option in top right)
    ii. Reset username/password
      1. Sign out of your account if you're logged in. Go to sign in. Reset your username. Sign in with your new username. Sign Out. Go to sign in. Rest your password. Sign in with your new password.
    iii. Create Flashcard set

1. Go to create a flashcard set. Try to submit a flashcard set without any flashcards in it, and verify that you get an error message saying you cannot submit an empty set. Fill in a few flashcards. Try to submit with a flashcard missing a question or answer. Verify you get an error message saying both question and answer must be filled in. Fill in questions and answers for a few flashcards and submit.

iv. View your flashcard sets
   1. Created two flashcard sets for your account prior to this test case. Click view flashcards. Verify that the flashcard sets you made previously are listed with the correct set names.

v. View flashcards in a set
   1. Create a flashcard set prior to this testcase. When viewing your flashcards, select a flashcard set. Verify that all the flashcards that you had when creating the set are displayed and in the correct order. Verify that clicking on the flashcards hides/reveals the answers

vi. Take a generate quiz
   1. Create a flashcard set prior to this testcase and know which question corresponds to which answer before taking the quizzes. Go to view your flashcards and select a flashcard set. Take a quiz on the flashcard set for each of the three quiz options (multiple choice, fill in the blank, and true or false). For each quiz, verify that the questions being asked correspond to the selected quiz option. Verify that the number of questions is equal to the number of flashcards. Score a 50%, 75%, and 100% on the quizzes (prerequisite for this test case was knowing the question answer pairs on flashcards so you will be able to purposefully get these scores) and verify that the displayed score after submitting a quiz is correct.

vii. View score progression for a flashcard set
   1. Take at least 3 quizzes for the same flashcard set prior to this quiz and remember the order of the quiz score you got. For the flashcard set, click on view score timeline and verify that the scores for your quizzes are present and in the correct order.

b. How to run tests
   i. Frontend testing will be done manually, so run the frontend and backend of the project then follow test cases above

c. Expected time to run through test cases
   i.   30-60 minutes