**Testing and documentation**

All test cases will provide a failed or success message upon operation

Insertion:

* Test case 1:
  + check to see if user inserted correct type of data(date created, comments, title, etc.)
    - can’t put a string type into a int field (title of research into a dateCreated)
* Test case 2:
  + check to see if user filled out all required data(no blank input fields)
* Test case 3:
  + check to see if user has correct permissions(researchers)
* Test case 4:
  + check to see if data was successfully inserted(backend testing)

Deletion

* Test case 1:
  + check to see if user has correct permissions. Only the researcher of the project can delete items from their own project.
* Test case 2:
  + check to see if data was deleted correctly and fully in database(backend testing)

Updating

* Test case 1:
  + check to see if user updated correct type of data(date created, comments, title, etc.)
  + can’t put a string type into a int field (title of research into a dateCreated)
* Test case 2:
  + check to see if user has correct permission(researcher can update)
* Test case 3:
  + check if data was deleted(backend testing)

User testing

* Gather around 10 people, and give them a demo to use.
* Have them provide feedback.

Integration Test

* All integration testing will be done every sunday.
* The group will present their code and explain the changes they made
* The group will then discuss if the project is ready for integration
* Once the group agrees everything is good to go, the project leader will merge the project
* If any conflicts happen here, they should be fixed.
* To prevent conflicts, we developed a sandbox, so all testing occurs here.
  + This occurs on a site is a sub domain of the main site.
  + once completed testing, we will integrate it with the main site

Verification and validation

* Login/logout
  + We will have code the checks for a user credentials(username/password)
    - present a success message on correct validation
    - user has to be in database
    - user upon first time to website will need to register themselves
    - can assign themselves as an admin of the project, and can invite students/data scientist
* user privilege
  + There will be several levels of privileges
    - System Admin-level 1 in database
      * has all privileges; reading, writing, updating, deleting, inserting, user account management, manipulating UI elements, download/upload
    - researcher-level 2 in database
      * has all privileges; reading, deleting, updating, inserting, writing, upload/download
    - student-level 3 in database
      * has all privileges; reading, download
    - data scientist-4 in database
      * has all privileges; reading, download

Future testing:

* Upload/download
* browsing/searching