UserAPIControllerIntegration Functionality:

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| Test ID | createUserTest() |
| Purpose of Test | To test if a user object can be created and inserted into database successfully |
| Test Environment | The environment used is  JUnit because we wrote our unit tests in IntelliJ IDE Java platform with Windows OS |
| Test Steps | Tester must import the code from our github directory : backend/src/test/java/pw/wp6/avocado\_toast/  api/UserApiControllerIntegrationTest.java  into a Java IDE to proceed running the test |
| Test Input | CreateUserObject body = new CreateUserObject();  body.setName("John Doe");  body.setUsername("jdoe1");  body.setAccountType(AccountType.*CUSTOMER*);  body.setPassword("pass123");  body.setSsn("123456");  Name: John Doe  Username: jdoe1  Account Type: Customer  Password: pass123  Ssn: 123456 |
| Expected Result | Test passed: 1  The test uses an .assertEquals() methods that checks if two objects are equals or not. If they are not, an AssertionError without a message is thrown. It checks if the createUser() method returns "HttpStatus.NOT\_IMPLEMENTED", meaning the server does not support the functionality required to fulfill the request. |
| Likely Problems/Bugs Revealed | Vulnerability to SQL injections in username and password field to bypass user authentication  Vulnerability to SQL injections in username and password field to data manipulation (inserting, deleting, changing data, etc) |

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| Test ID | loginUserTest() |
| Purpose of Test | To test if a user object’s username and password can be used to access system functionalities. |
| Test Environment | The environment used is  JUnit because we wrote our unit tests in IntelliJ IDE Java platform with Windows OS |
| Test Steps | Tester must import the code from our github directory : backend/src/test/java/pw/wp6/avocado\_toast/  api/UserApiControllerIntegrationTest.java  into a Java IDE to proceed running the test |
| Test Input | LoginParameters body = new LoginParameters();  body.setUserName("jdoe1");  body.setPassword("pass123");  Username: jdoe1  Password: pass123 |
| Expected Result | Test passed: 1  The test uses an .assertEquals() methods that checks if two objects are equals or not. If they are not, an AssertionError without a message is thrown. It checks if the loginUser() method returns "HttpStatus.NOT\_IMPLEMENTED", meaning the server does not support the functionality required to fulfill the request. |
| Likely Problems/Bugs Revealed | Vulnerability to SQL injections in username and password field to bypass user authentication  Vulnerability to SQL injections in username and password field to data manipulation (inserting, deleting, changing data, etc) |

**3 Test Documentation:**

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| Bug | The test uncovered the bug | Description of the bug | Action was taken to fix the bug |
| Vulnerability to SQL injections to bypass user authentication | loginUserTest() | A user could bypass our authentication software and enter the website without a valid username and password | Change the permission and privileges so user does not have privilege to login if its invalid |
| Vulnerability to SQL injections in username, password, and SSN ID field to data manipulation (inserting, deleting, changing data, etc) | loginUserTest()  createUserTest() | A user could bypass manipulate our data and insert, delete, or update the data in the username, password, and SSN ID field | Change permission and privilege so user does not have privilege to change data |