**• Testing and Quality Assurance Strategy**

o Explain how you assured the quality of your application

o Explain your testing methodology

Testing was critical in the development of StoragePal as it assisted the team in quality assurance and helped us eliminate potential bugs from the final product. We did UI tests and unit testing, as well as regularly compiling testing the application manually using the emulator for both iOS and Android.

For UI tests, we started a new project, named ‘StoragePalUITests.sln’, which is where the automated user interface testing is done for the StoragePal application. These tests are cross-platform, as they successfully test for both iOS and Android platforms. The test follows the *Arrange-Act-Assert* pattern, where firstly, before each test, the specified conditions will be set up, or *‘Arranged’*, and initialises things dependent on its platform, allowing for the test to be seamlessly actioned. The next step in the pattern is *‘Act’*, as the test interacts with the application, pushing button, entering texts etc. Once these two steps are done, the test will *‘Assert’* and examine the results of the actions performed in the previous step to ensure the test passes successfully. If the test fails, an error message is displayed explaining what went wrong, and we would consequently amend either the application or the tests accordingly.

The unit testing only tested the functions relating to user validation upon registering for an account. The test would, for example, create a string, assigned the value of an email address, and ensure that this would pass the validation test. The validation function matches the input with a regular expression, or regex, and passes the result as a Boolean; i.e. if the validation passes, or is successful, it will pass as true. Once this is run in the testing, we assign the result of the validation to a variable, which we then assert to the expected result, and then run the test. If the test fails, an error message is displayed explaining what went wrong, and we would consequently amend either the application or the tests accordingly until the tests are successful.

Manually testing the application constantly while making the application was vital in the development of StoragePal. Testing each new function, variable, element, image, query etc. as it is written enables robust code, and helps identify errors quickly, thus allowing us to eliminate them efficiently and effectively.

• Reflection on Learning

o Elaborate on what you learned during this semester as a team

o Summarize the faced challenges and difficulties and how your team resolved them