Requirements

Functional requirements include:
- Inventory being updated to reflect what the store has in stock so that customers can't order something that isn't there.
  - An automated test could be made to test the database with valid and invalid data to make sure that the database with stock is updated as expected and throws errors when incorrect data is added in.
  - This may not cover how the system will work in the real world especially if there are multiple orders being made at the same time.
- Customers details should be stored securely
  - This could be tested by attempting to inject malicious SQL queries into input fields to see if these type of attacks are prevented by the system.
  - SQL injection testing may not thoroughly cover scenarios where stored procedures or functions are used in the database.

Measurable Quality's include:
- The time taken for customers to place an order should be less than 3 seconds for an efficient user experience, as people tend to disengage with a website after 3 seconds [1].
  - This could be tested by creating test scripts that can then be timed, making sure that the orders are added in a short amount of time.
  - Once again this may not hold up under lots of orders being placed at the same time as the system will run slower if being used by many different customers.
- The system should have an easy to understand interface or customers will also be put off of purchasing from the fictional shop.
  - This would be best to test with moderated testing so it can be seen how real users would use the system and see where they may struggle with the system.
  - This would only have a small testing group so would probably not make the system perfect for all users.

Qualitive Requirements:
- The system should be able to handle and process multiple orders simultaneously.
  - Set up a test environment that can mimic the infrastructure and multiple customers ordering at once – this would also help with the testing of some of the previous requirements
  - This is still not the same as when the system will be used in real life.
- The code should be maintained and should be commented well for people to work on it in the future.
  - This can be done just by checking over the code and making sure there is an appropriate amount of comments
  - This won't be 100% full proof as there will be a lot more room for human error

While these are tests are good for making sure that the system will work for a few users it still doesn't realistically show how the system will work under actual users of the system as there is no real-world user data. This suggests there should be some beta testing in the future in order to understand the system while it is being used by would be customers.

1. Datadome.co. [cited 2024 Jan 26]. Available from: https://datadome.co/learning-center/how-to-reduce-server-response-time/#:~:text=So%3A,acceptable%2C%20but%20should%20be%20improved.