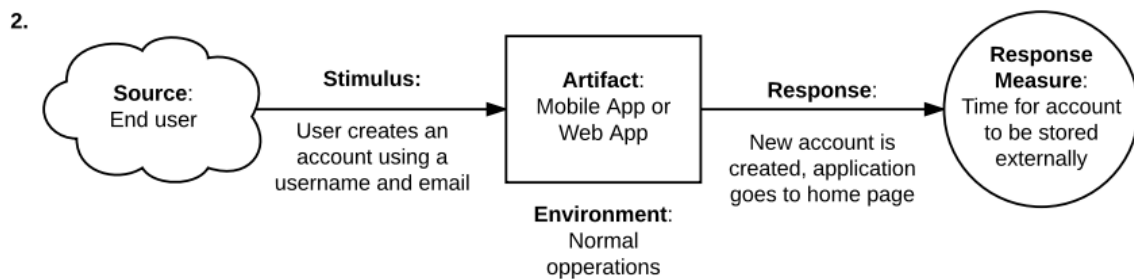**1.**

Risk: The actual system response may not fulfil the ASR requirement of < 1 sec when there is heavy load in the operating environment, high network latency or the search function is complex.

2.

Risk: Creating an account using both username and email is not a good security practise. Account should be created with username/email AND a password. And depending on security measures implemented at the external storage such as data at rest encryption and API authentication, the response time for account creation can be long.

3.
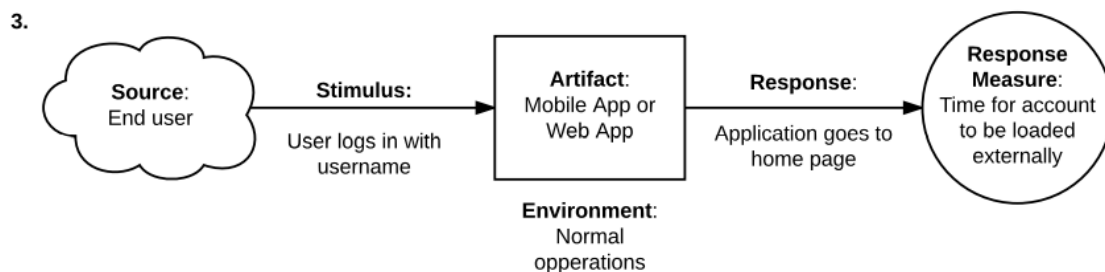
Sensitivity Point: The response time for the account to be loaded can be affected by the speed of authentication, which in turn is affected by the number of communications between the different web services. Also, the security of the authentication process must also be looked into.
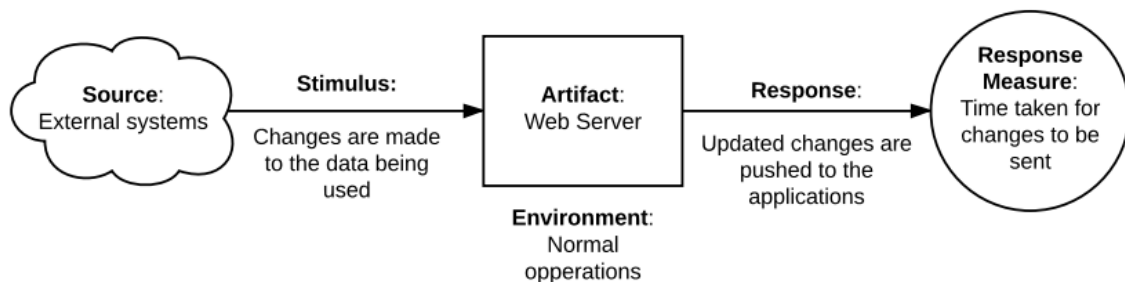
4.
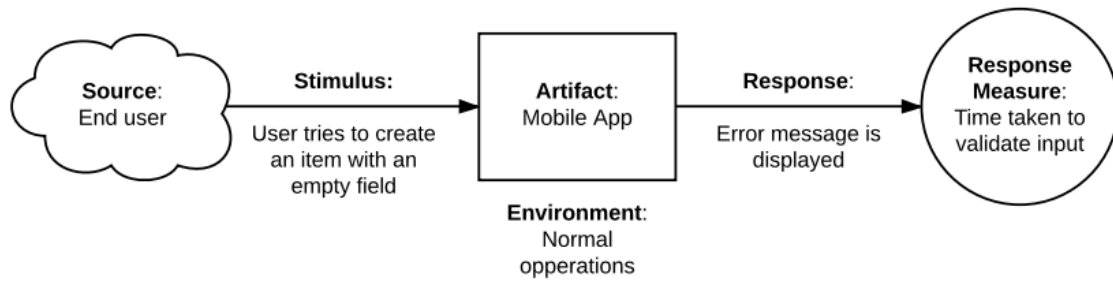
Non-risk: The operation is performing as expected where the application validates the input and display the appropriate message.

5.
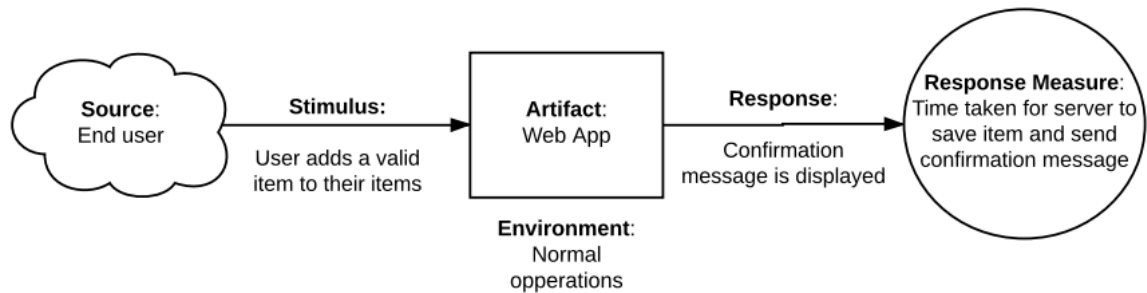
Non-risk: The operation is performing as expected where the application validates the input and display the appropriate message.

6.

Sensitivity Point: Consider enhancement the design to first ensure the changes are done on the latest data version. Hence, it's better for the data to be pulled from the server first before the changes are made at the external systems.

7.
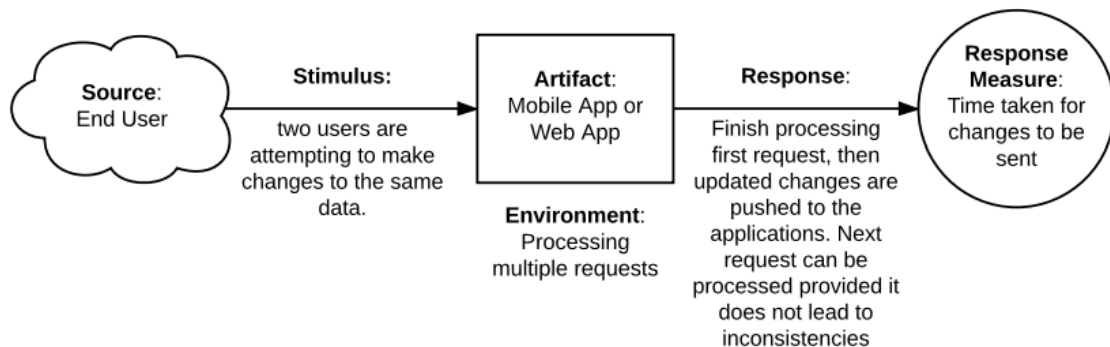
Risk: Concurrent update requests are actually handled sequentially as described and the later data change request will almost certainly take >1 seconds to complete processing.

Updated Utility Tree

Quality Attribute

- Performance
- Security
- Interoperability
- Usability

Quality Refinement
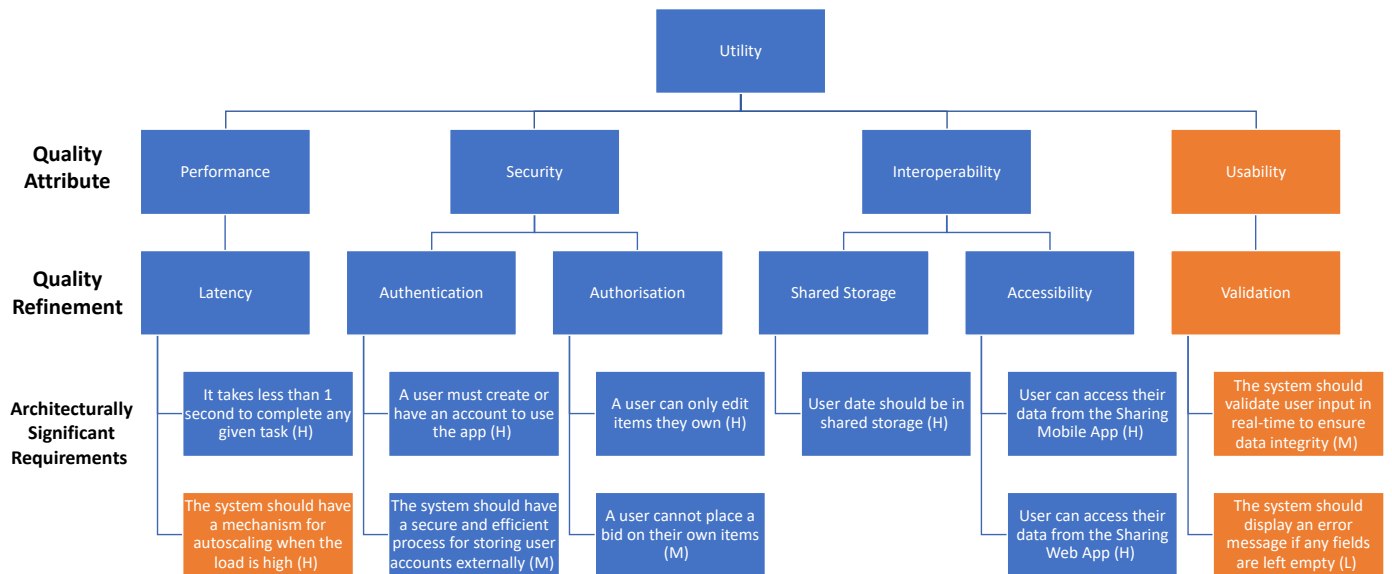
- Latency
- Authentication
- Authorisation
- Shared Storage
- Accessibility
- Validation

Architecturally Significant Requirements

- It takes less than 1 second to complete any given task (H)
- The system should have a mechanism for autoscaling when the load is high (H)
- A user must create or have an account to use the app (H)
- The system should have a secure and efficient process for storing user accounts externally (M)
- A user can only edit items they own (H)
- A user cannot place a bid on their own items (M)
- User date should be in shared storage (H)
- User can access their data from the Sharing Mobile App (H)
- User can access their data from the Sharing Web App (H)
- The system should validate user input in real-time to ensure data integrity (M)
- The system should display an error message if any fields are left empty (L)

Note: Boxes in orange colour are edits to the original Utility Tree.