Research Findings: Quality Assurance Practices

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1. Background

Quality assurance is a fundamental aspect of delivering a successful product. By understanding quality assurance practices, we can be sure that we are developing a product that meets our client's requirements.

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2. Objectives

To research templates and common quality assurance practices in order to produce artefacts that will aid us in developing a successful product to meet our client's needs.

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3. Approach

General online research.

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4. Findings

4.1. Requirements Gathering and Analysis

4.1.1. Requirements gathering: to elicit requirements from the client/stakeholder through methods such as stakeholder interviews, questionnaires, and other suitable means.

4.1.2. Requirements analysis: to determine whether they are clear, concise, non-conflicting, consistent and unambiguous.

4.1.3. These may be recorded as lists, use cases, user stories etc.

4.2. UML Use Case Diagrams

4.2.1. A type of behaviour diagram used to describe actions that a system should or can execute with users of the system. Actions being 'use cases', users being 'actors'.

4.2.2. They are used to capture what a system should do and how actors can interact with the system.

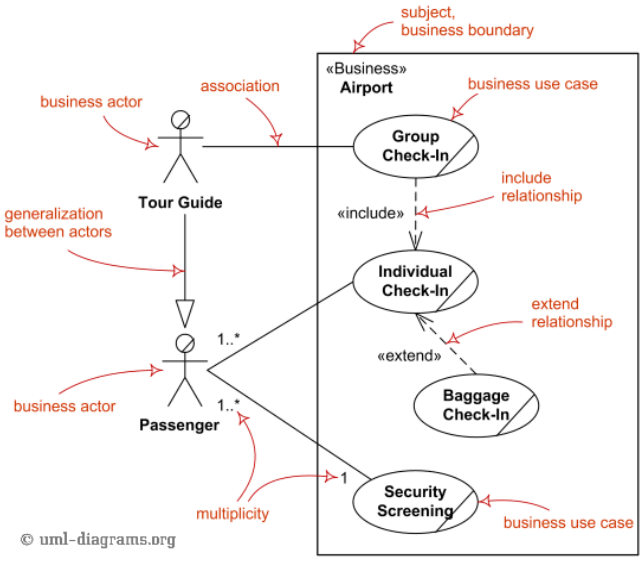

Fig 1. An example of a use case diagram.

4.3. User Stories

4.3.1. They are brief sentences – typically written on small cards or post-it notes – about what the typical user of the system/product expects to be able to do. This allows the work to be divided into smaller chunks of work and ranked in terms of importance. The most important user stories should be implemented before less important user stories. User stories also allows for a better estimation of time for each chunk of work.

4.3.2. Benefits of user stories:

1. Briefness: they are small chunks of work.
2. Allows project being broken into smaller increments.

4.3.3. Limitations:

1. Vague, informal and incomplete – due to the brief nature of user stories, and are often regarded as 'conversation starters', they may lack detail and may be misinterpreted.
2. Lacks non-functional requirements – when writing user stories no requirements are explicitly stated or recorded.

4.3.4. User stories are similar to use cases.

4.3.5. Usually in the format: "As a <actor>, I want <action/goal> so that <benefit>."

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5. Further Investigation

5.1. Look into other artefacts of quality assurance and their relevance to our project

5.1.1. Behavioural diagrams i.e. activity diagrams

5.1.2. Structure diagrams i.e. class diagrams

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6. Recommendations

6.1. Gather and formalise requirements as soon as possible.

6.2. Produce user stories from interviews with client and express visually through means of use case diagrams.

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7. References

Cohn, M. (2004). User stories applied: For agile software development. Boston: Addison-Wesley.

Agile Alliance and Institut Agile. (2013). Guide to Agile Practices. Retrieved August 3, 2015, from http://guide.agilealliance.org/guide/user-stories.html

Fakhroutdinov, K. (2010). UML Use Case Diagrams. Retrieved August 3, 2015, from www.uml-diagrams.org/use-case-diagrams.html