

Appendix C – Requirements Document

High Level Detailed Requirements

The aim of this project was to create a new system which improves the project management techniques used within the Group projects. Therefore it is important to understand what the students use to manage their projects and the methods behind the development of their systems so that a program can be created which supports this. Below are listed the high level requirements which have been derived from the students views of what their project management will entail.

Agile Methodology Requirements

Requirements detailing the information held within the Agile Manifesto to do with ease of change and client collaboration.

- *The system should allow for easy change of tasks and dates.*
- *Each task allocated should have a person responsible assigned to it in the relevant space.*
- *Each task allocated should have a estimated duration and amount of slack.*
- *Each task can be easily moved to change the order of the date of completion.*
- *The system will allow for recurring tasks for communication with the system.*

Explanation of Requirements

As stated within the agile manifesto, it is important to allow for easy change within the plan and to ensure that the client is happy. The agile manifesto states “responding to change over following a plan”. It is important to quickly respond to change but it is not less important to have a plan. Efforts should be taken to include plans which can be easily changed by adding amount of slack to each duration to allow plans not to overrun and to allow task durations to change simultaneously if a task runs over allocated time.

Team Communication

Requirements detailing the communication required in order to schedule tasks and assign responsibilities.

- *The team members should be able to communication with each other quickly and efficiently through multiple means.*
- *Each team member should have the same rights to communicate as their peers.*
- *The system should have the ability to post polls.*
- *The system should have the ability to post messages*

- *The system communication capability should have a limit of 300 words before it needs to become a document.*

Assigning Tasks

Requirements detailing the assigning of tasks to team members in the project plan.

- *The system should consider the available calendars of each team member.*
- *The system should total the amount of work each team member participates – such as sign in to program when working on the project.*
 - *Legal and Ethical Issues – This may be unsupported by the students and is a requirement in which further research needs to be undertaken due to the invasion of privacy into the student's work.*
- *The system will allow tasks to be assigned alongside the person responsible*
- *Every plan will not have in excess of more than 20 tasks before splitting into separate phases.*
- *Every plan will be displayed easily so that it can be viewed and printed clearly.*

Explanation of Requirements

The systems plan must not frustrate the user so that they are encouraged to follow it throughout the project. A way to do this is to implement a plan which has several calendars available so that each team member can import their available working times. Further to this the phase's functionality should involve a high level plan which is viewable to all which details the plan from start to finish only showing the major milestones. Then as each phase begins to reach the next nearest milestone a embedded more detailed plan can be made to show the steps that would need to be undertaken to reach that milestone. Once that milestone is reached the phase can be closed and forgotten about making the plan simpler and easier to read, print and manage.

Detailed Requirements

In order to get a detailed idea of what I want the system to do I think it is important to go deeper into the details of the functionality I want to portray. A software requirements document should look at many aspects not just the surface level. In order to understand and demonstrate what a software requirement document looked like, I looked at previous examples which have been used in order to understand what information should be included. The reference for this document is detailed at the bottom of the requirements.

Functional Requirements

What the system shall do. Specifying what functions a system must provide to meet stated and implied stakeholder needs.

- *The system must have a unique log in for each team member.*
- *The system must allow restricted access to the supervisor*
- *The system must allow restricted access to the client*
- *The system must allow documents to be uploaded.*
- *The system must allow documents to be marked as complete before they become readable to the supervisor and client.*
- *The system must allow for each team member to communicate with each other with non repudiation.*
- *The system must allow a plan to be viewed easily when logging into the system*
- *The system should notify the user when a deadline is nearing.*
- *The system should allow for the easy add of new tasks.*
- *The system should allow for the tasks to be easily modified*
- *The system should track who last modified a plan*
- *The system should notify the user on return log in that a document has been modified.*
- *The system should notify a user when a document has been opened for editing.*
- *The system should only let one copy of a document be edited at once.*
- *The system should allow for the scheduling of meeting*
- *The system should allow for the acceptance of meetings*
- *The system should have a marks area.*
- *The system should allow for a screen to show teams availability*
- *The system should allow for multiple calendars for team members.*

Data and Accuracy Requirements

Requirements about data the system shall use and the accuracy of that data.

- *The system will support popular file formats such as .doc.*
- *The system shall assign a username which is easily identifiable by the team members*
- *Each team member will log in to the system with a relevant password.*
- *Each document uploaded should display the date and time it was uploaded.*
- *Each document modified should display the user who last modified it.*
- *All marks uploaded by the supervisor will be percentages so that they are easily understood by the students.*
- *All marks uploaded by the client will be percentages so that they are easily understood by the students*

Interoperability Requirements

Requirements about relationships and interfaces of this system with external systems.

- *The system should take information from the university e-mail system.*
- *The login used to enter the system will be the same as the university system.*
- *The system should be supported by Cardiff University.*
- *The system could be accessible through Cardiff's Modern Working Environment.*

Responsibility Requirements

Requirements about who has the responsibility to perform specific system functions.

- *The system will give same access rights to all students.*
- *The system will give restricted access to supervisor and client.*
- *The supervisor/client will only be able to view documents which are marked as complete by the students*
- *The supervisor/client will not be able to see the team communication.*
- *The system will give the students the option to contact the supervisor/ client through the system.*
- *The system will give the students the option to allow the students to set a message topic readable to the supervisor/client.*
- *The supervisor/client can select who can view their comments of finished documents.*
- *The system will display the mark for finished documents but will restrict who can view the comments depending on who modified the data.*

Availability Requirements

Requirements about the availability of the system for operational use.

- *The system must be available to use 24 hours a day, 7 days a week.*
- *The system must be accessible across many platforms.*
- *The system must be available outside of the university campus.*
- *The system can only accessed through successful login.*
- *All documents must be available to be viewed at all times*
- *Only one document can be edited at any given time by a single team member.*
- *All team members must be able to access the plan at any single time no matter how many other team members are accessing it at once.*
- *The system shall recover from a crash within one minute.*
- *The system will allow users to report errors to university staff for maintenance.*

Performance

Requirements about the performances of the system. May vary for different functions.

- *All documents must be quickly viewable without a noticeable time delay*
- *All updates of documents should be updated instantaneously.*
- *All new messages should be pinged to the user using an appropriate tool.*
- *All messages should be readable instantaneously.*
- *The system could send a notifying e-mail that an update has happened within the group after ten minutes of it happening.*
- *The system shall be fast enough to avoid interrupting the user's flow of thought.*

Capacity Requirements

Requirement about volumes and peaks the system must deal with, and about the consumption of scarce resources.

- *The system will let all students view the plans, documents and messages at the same time.*
- *Only one person can edit a document at once but the older version will still be readable by other students.*
- *The system will have 8 GB of storage for documents per group.*
- *The system will support a large number of requests during peak periods such as day before deadlines etc.*

- *The system shall be capable of processing multiple request at the same time during peak periods*
- *The system should be capable of supporting large volumes of documents during peak periods.*

Reliability Requirements

Requirements about the reliability of the system which is the probability that the system executes without failure for a specific period of time.

- The system must not crash during critical periods.
- The documents storage must not fail.
- The documents storage space could be backed up somewhere on the university server.
- The system must recover from failures within 10 minutes.
- The system if it cannot recover from failure must notify the user.
- The system must be repaired within one hour of failure.
- If the system upload system failures – information should remain readable so the group can continue to progress.

Installation Requirements

Requirements about system installation.

- *The system should be internet based*
- *The system should require no installation by its users.*

Portability Requirements

Requirements about the portability of the system to other hardware and software environments.

- *The system could have mobile capability*
- *The system should work across multiple browsers.*
- *The system should work on the most updated versions on web browsers*
- *The system should be readable across touch screen devices*
- *The system should run on Windows, Mac and Linux without errors*

Law and Regulations Requirements

Requirements about the laws to comply with.

- *Personal information will be kept private where necessary in order to comply with the data Protection Act.*
- *The information held on the system will be the property of the group as to comply with Intellectual Property Regulations.*
- *No student will be able to access any student records of other team members in compliance with Data Protection Act.*
- *All information will be kept private and cannot be viewed outside of the group without a valid login.*

External and Internal Requirements

Requirements about the standards, external or internal to the organisation, to comply with.

- *The system must support the details detailed in the agile manifesto.*
- *The system must be supported by the School Of Computer Science and Informatics*
- *The system must be advertised and encouraged to be used by School Of Computer Science and Informatics*

Technology Requirements

Requirements about technologies to use or not to use.

- *The system should run on all common browsers used within the school.*
- *The system should be created using a relevant internet based programming language.*
- *The system should back up information held on the website on the university server.*
- *The system's functions should all operate fully within a web browser.*
- *The system should work across all web browsers released in the past two years and is supported by the University.*

Cultural Requirements

Requirements about social factors that may influence the acceptability of the system.

- *The system shall not be offensive to religious or ethnic groups.*
- *The system will use English which is agreed and checked by Cardiff University.*

- *The system will be advertised by Cardiff University in order to gain supporters.*
- *The system will not be accessible to people not enrolled within the university.*

Physical Environment Requirements

Requirements about the physical environment in which the system will operate.

- *The system shall be used by the students within university.*
- *The system shall be able to be used outside university campus.*
- *The system should be able to be accessed on the move via a mobile device.*

Appearance and Style Requirements

Requirements about the style and appearance of the system to its users.

- *The system shall input the project plan in phases.*
- *The project plan inputting to the system will show high level view with an option to see more detailed phases.*
- *The system will conform to the university style of their internal websites.*
- *All documents will keep their existing formats as created when viewed in a web browser.*

Ease of Use Requirements

Requirements about the ease with which the system can be used by intended users.

- *The system shall consider disabilities such as blindness so allow scaling of texts within web browsers.*
- *The system will allow novice users to communicate with team members with three minutes.*
- *The system will allow expert users to upload a document within two minutes.*
- *The system will be made with initial prototypes and tested thoroughly to ensure usability.*
- *The system must notify the users in the event of errors and instruct the user clearly what to do.*
- *The system will have separate clear areas for messages, documents and project plan.*
- *The system will be usability tested in order to ensure at least 95 percent perceive it to be more usable than the previous solution.*
- *The system will encourage the user to plan effectively with a clear to use interface.*
- *The system shall have a clear menu for novice users*

- *The system shall have shortcut keys for expert users.*
- *The system will be display the plan in a way that is readable.*
- *The system will display the plan so that it is easily printable.*

Internalisation

Requirements about the language support of the system.

- *The system shall be created and checked by using university agreed English.*
- *The system could be supported in welsh on later editions.*
- *The system shall display time and dates in English formats.*

Learning Time Requirements

Requirements about the time needed to learn to use the system.

- *The system shall be easy to use and require no more than a few minutes to complete main tasks.*
- *The system shall conform to university standards in order for students to immediately familiar with it.*

Accessibility Requirements

Requirements about the accessibility of the system for people with physical or cognitive disabilities.

- *The system shall avoid colours or objects which cause eye strain after continuous use.*
- *The system will allow for text size to be easily changed through the interface of the system*
- *The system will not include any information which is only viewable through sound so that it can be used by deaf people.*

Safety Requirements

Requirements about the likely safety effect (loss, damage or harm) of improper use of system.

- *The system must only be used for university purposes.*
- *The system will have an option to report abuse to university staff if abusive or harmful messages are posted.*

- *The system is overlooked by university staff for suspicious activity.*

Access Protection Requirements

Requirements about restrictions of access to the system.

- *The system can only be viewed by students which are part of that group.*
- *The system will time out and require re-login after inactivity for one hour.*
- *The system will need a authorized login to assess group material*
- *The system will share information only allowed by the students with the supervisor and client.*

Integrity Requirements

Requirements about the expected integrity level of the system.

- *The system will allow all users upload and document and will show the user who uploaded the new version last.*
- *The system will notify the user when a new file is of a smaller size than the one it's replacing.*
- *The system will prompt the user to confirm before overwriting data.*

Privacy Requirements

Requirements about privacy of personal and university data.

- *No student's personal details will be shared on the system.*
- *Passwords will be individual to each user.*
- *Passwords shall never be displayed on the screen when they entered.*
- *Usernames will not be displayed to other team's members.*

Project Time Requirements

Requirements about milestones and durations of the project.

- *The system will take no longer than 1 year to implement.*
- *The plan for implementation will allow for extensive usability testing.*

Documentation Requirements

Requirements about the user documentation.

- *The system will have an online help page.*
- *The system will have online help developed during the project test phase on areas the user finds difficult.*

Support Requirements

Requirements about the kind and the level of support needed for the system.

- *The system should be supported by the university support network.*

Training Requirements

Requirements about the user training needed in order to effectively use the system.

- *The initial training for users will be undertaken within lectures.*
- *The initial training will be undertaken by the leader of the modules and the developers who created it.*