SOFTWARE DEVELOPMENT LIFE CYCLE

By Will
(Software 02)

FEASIBILITY STUDY

- **What is it –** The feasibility study is done before the project is started to research whether or not the project idea is worth the time and the cost it is predicted to be, and if it is even possible from a technology stand point
- **Who is Involved –** The project manager would be heavily involved in whether or not it is possible, whether it worst the cost and resources for the team.
- **What are the outputs –** The outputs of this is a yes or no if the project will go ahead, if it is deemed to expensive to complete the task or can not afford it the idea would be scrapped or delayed. If the idea is feasible and ready to go ahead the project manager would them move the idea to the Requirements Analyst and the Business Analyst to start.

REQUIREMENT ANALYSIS

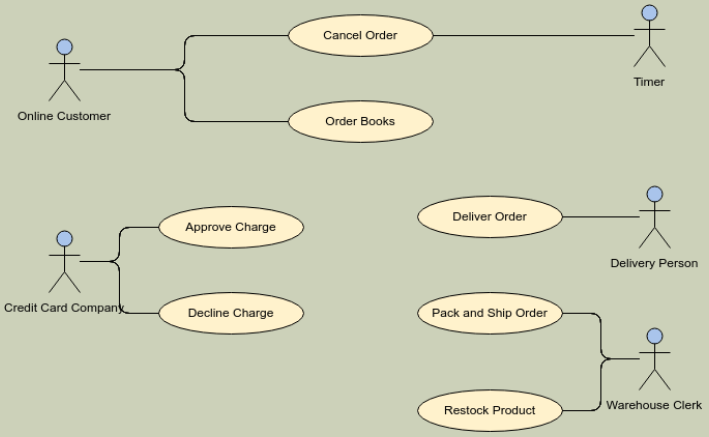
- **What are the inputs** – The input of the stage, would be all the current information at the stage, project needs, customer/stakeholder, time scale if necessary. Anything that is needed to be known is given at this stage.
- **Who does it** – This stage would be completed the Requirements Engineer, who would arrange meeting and liaise with the project stake holders and the customer to get an understanding of the project. This would include Validation making sure that all the needs are met and whether or not they are able to be met, The requirement documentation which consists of documenting all the findings and work that is being done at the stage including: Project stakeholders requirements, Business analyst plan, Current state analyst, Scope statement specification.
- **What is the difference between a functional and non-functional Requirement** – A functional requirement is a requirement that is necessary in order for the project to work, and example of this would be a log on screen, without one the software would not be able to function. A non-functional requirement would be something that is not necessary for the software to run but would make the user experience, an example of this would be a remember username feature.

REQUIREMENT ANALYSIS PT 2

- **Requirement Elicitation** – this is the practice of researching and discovering the different requirements of a system from the different users customer and stakeholders. This can be also referred to as 'Requirement Gathering'.
- **Requirements Documentation** – A document containing all the requirements collected from all of the customers and stakeholders located in one place.
- **Requirements Validation** – This process consists of ensuring that the requirements are all meeting the needs of the stakeholders and has the clear understanding of all of the developers.
- **User Story** – User storied are short simple descriptions from the user who is in need of the new capability, these follow a simple template, User story's are simple by having a large amount of small story's to work from instead of one large block of text. These can be written through the user project.
- **User Case** – This is a list of different actions or steps defining the interactions between a role and a system in order to achieve a goal.
- **Stage Outputs** - The outputs from this stage is all the requirements and needs of the project, depending on the type of development method this can be simple to change or can be quite difficult.

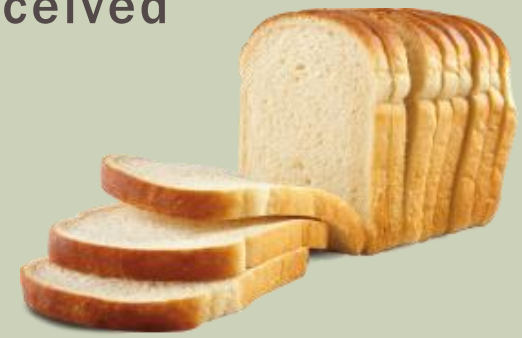
DESIGN

- **The inputs** – The input in this stage would be all the requirements specs from the previous task, giving details of what is needed by the design team and give ideals and goals for them to follow.
- **What is UML** – (Unified Modelling Language) UML is designed to be a unifying language enabling IT professionals to be able to model computer applications, this is best used to be able to provide a way to visualise a design of a system.
- **What is a UML Diagram** – a diagram illustration the functionally provided by the system, the main use of this is to be able to see the system and its requirements.
- **What are the outputs** – The outputs from the design stage would be the overall design of the system that needs to be created, depending on the life cycle choice it can be very hard to go back and change the design once it is set.
- **Who is involved** – The people involved in this stage are the project manager overviewing the design, the designers who are actual design the project and the requirement manager who passes over the information.



DEVELOPMENT

- **What are the inputs** – Inputs to development are all the designs done by the design phase, ready to be created.
- **What are the outputs** – The outputs for development is the finished code, built to the design specification which should be functional and ready for the testing phase.
- **Who is involved** – The software developer is the main person involved as they are the ones who are actually creating the code, the project manager would likely be involved to make sure the project is moving at a reasonable speed. They may also liaise with the Design team if they need any guidance of specific things from the design that they received



TESTING

- **What are the inputs –** The inputs for testing would be the finished code ready to be tested.
- **Unit Testing -** Involves the testing of an individual piece of software or component, usually performed by the programmer not the tester as requires a detailed knowledge of the internal program design and code.
- **Integration Testing –** This is the testing of all the integrated modules to verify the combined functionality after the integration. This is very relevant to client/server and distributed systems.
- **System Testing –** This technique is used to test the entire system as per its requirements, utilising a black box type testing that is based on the overall need of the specifications using all the parts of the system.
- **Acceptance Testing –** This part of the testing performed by the client in order for them to verify whether or not the system meets the business requirements or not. The client will only accept the features when all the features and functions work as intended.
- **Acceptance Tests and User Requirements** - These link directly as a if a client feels the user requirements have not been meet when doing the acceptance test can lead to issues.
- **Regression Testing –** Testing the application as a whole for the modification in any module or functionality. Covering the whole system can be tough so usually a automatic testing tool is used for this type.
- **Black Box Testing –** Testing that is done without having knowledge of what is happening on the code level just the how the user would experience that program.
- **White Box Testing –** Also known as Glass box, this is done with full knowledge of how the code is working being able to test statements paths and different conditions.
- **Outputs** - These are all the finding that you have found about the code this may need some correction or a complete overhaul depending on the situation as each testing goes differently to the next. However one thing is for certain is that you will have results to show for the testing good or bad.

DEPLOYMENT

- **Input** – The input is the working ready code, ready to be deployed into a live sever or given to the customer.
- **Who is involved** – The people who would be involved would be the project manager, the deployment manager.
- **Outputs** – The output of this would be a final program