Task 1 (P1)

**Iterative models**

Spiral Model

This model consists of 4 main phases in which the product will go through until it meets the need of the customer. The 4 main phases of the spiral are planning, risk analysis, engineering and finally evaluation. Firstly, in the planning phase you will start to assemble all the requirements you need for the project. The analyst will identify what are the business requirements and what are the system requirements. In this phase there is continual communication between the analyst and the customer to make sure that all the requirements are met correctly. The next phase of this model is risk analysis, this is where the analyst will do some tests to see what kind of risks and errors there could be associated with this project. Additionally in this phase a prototype will be created to allow the analyst to see more errors. The next phase of this spiral is to development and testing of the software. This is to make sure that it works effectively so that it can be shown to the customer. The last phase of the spiral is the evaluation by the customer, they will give the analyst feedback to see how the product can be improved further.

Traditional Agile model

This methodology is used to build software incrementally using short iterations. For example, this model will allow feedback from the customer frequently before they are happy with the final product. The first phase is the requirement analysis, the customer will set requirements and these requirements will be analysed. The next phase of this model is to use the requirements to come up with a design. Also in this phase a prototype is created ready for the testing. The next part is the development phase, the software is tested before being given to the customer for feedback. The customer’s feedback could be things that they would like to be adjusted and improved further. The customer might set new requirements which will have to be added in the next iteration. The next phase is quality assurance. This is where you will identify the defects or issues that were brought up by the customer. Lastly, deployment is the final part of this model, the software is ready for release.

**Sequential models**

Waterfall Model

Every phase will need to go under a review and need to be signed off before moving onto the next part of the model. The first step in this model is the requirement analysis. The requirements are taken in from the customer, they are then analysed and document is created where all the requirements can be seen. A Review of these documents will then happen, if successful the document will be signed off and the project moves in to the next phase. The next phase of the sequence is the system design. A team will use the requirements documentation to create blueprint for the software. For example, what services and programming languages to use, this will all be put down in a design specification. Again a review will take place and if everyone is happy it will move on to the next phase. The next part is implementation. Now the developers will look at the design and turn it into code. There will make sure that the code meets all the requirements that were set in the previous phases. The second to last part is the testing of the code. In this phase the code is tested thoroughly to see if there are any issues with the software. The last part of this model is the operation and maintenance phase. The software is ready to functional and ready to use. In this part it is not just about the software being operational but also being maintained, this is so that updates or changes can be made.

Throw away Prototyping

The way in which throw away prototyping works is by first establishing the requirements. From this we can tell what the customer needs from the software. For example, what the software should do and what the target audience is. After, the requirements are looked at in detail and a prototype is created. Now that the prototype is completed it will be given to the customer to test and evaluate. The customer will give feedback and the prototype will be thrown away. However, the review which is given is very important. If the review which is received is good and the customer is happy, the things which were included in the prototype can now be added into the development of the main system. If not a new prototype should be created.

Task 2 P2

There are many ways in which risk is managed in the spiral model. Firstly, the spiral goes through the planning stage, this is where all the requirements are gathered to make sure the team know what is needed to be done. In the spiral risk analysis is a very important phase. Here the risks of the project are broken down and analysed thoroughly. In this part of the model the risks will be identified, then the analyst will think about how to reduce the risk or trying to remove the risk altogether. Another way risk is managed is by creating a prototype, a prototype will give an in depth look of feel of the project. This will further reduce the risk because if it is not up to standard more tests and analysis can be done. In a spiral model the process goes through each phase multiple times. In this cycle the customer will be able to see the software while it is still in production. This means that if they would like change this is easily possible because the product hasn’t been finished yet.