SDLC Model Characteristics Exercise

**Instructions:**

**Task One:**

**In your own words answer the following:**

What is the waterfall model and what approach does it use?

**The waterfall model is a linear project development that was used early on in software development. It is best used for small scale projects with an inexperienced team e.g. a calculator app. It is unsuited for projects that require updates and new features added, e.g. websites.**

What is the RAD model and what approach does it use?

**The RAD model is an incremental model. It does not spend a lot of time on planning rather focussing on prototyping, more suited to an engineering project than a software development. It reduces development time and encourages customer feedback. It needs a strong steam of highly skilled developers.**

What are the main differences between the Waterfall and RAD model?

**The waterfall model is high risk whereas the RAD model is low risk. The waterfall requires a large team throughout whereas the RAD can increase or decrease the number of team members as required. If any changes are needed to be done in an earlier phase it would be very costly, in time and resources, to fix where the RAD model can make changes at any time. The RAD model gives working builds earlier on and so can benefit from customer feedback whereas the waterfall method will only produce a build at the very end of the development cycle.**

**Task Two:**

**In your own words answer the following:**

What is the v-shaped model and what approach does it use?

**The v-shaped model is a linear model that runs sequentially. It is used to ensure a rigorous development cycle and is based on having a testing phase in each stage of development. It is suitable for small scale projects where the requirements are clear and is a simple and easy to follow model. It cannot support iteration and is there for unsuitable for complicated projects where the requirements may not be clear.**

What is the spiral model and what approach does it use?

**It uses a combination of linear and iterative approaches which passes through the development phases numerous times. It is good for large projects that needs a high amount of risk avoidance. It is an expensive model that does not work well for small projects and requires highly specified workers as well as a highly skilled project manager.**

What are the main differences between v-shaped and spiral model?

**The v-shaped model is not very flexible whist the spiral model has a lot of flexibility. The guaranteed of success while using v-shaped model is high whilst it’s relatively low in the spiral model. Testing starts with the first stage of the v-shaped model, however using the spiral model testing only happens at the end of the engineering phase of a spiral.**

**Task Three:**

Investigate the differences between Non-Agile and Agile Methodologies

**Instructions:**

Click on the following link:

[Non-Agile v Agile Methodologies - What is the difference?](https://www.shareitsolutions.com/blog/agile-non-agile)

Using the link above and by conducting your own research write a short description and explanation of the differences between non-agile and agile methodologies.

**Agile methodologies allow a team more flexibility in the development of the project, it also has the benefit of allowing customer feedback which leads to the project being more likely to satisfy the customers needs. It requires a clear definition of the customers requirement at the beginning of the project as due to the amount of customer interaction could lead to feature creep leading to the project ballooning in scope and required resources. Teams can grow or shrink with a projects need and usually requires skilled personnel in order to work properly.**

**Non-agile methodologies require the previous phase of the development to be completed 100% before the next phase can begin. This means it is a very rigid project structure. It requires a clear plan on how and when the tasks are completed. It works best for large teams that have been given clear goals and requirements that understand the scope of the project. Team members do not have to have a lot of experience or cross training.**

**Task Four:**

**Using the internet investigate the following model:**

Big Bang Model (software development)

**In your own words answer the following:**

What is the big bang model and why is it different from every other model?

**The big bang model does not follow any specific model. It does not follow a process or procedure and requires little planning; the customer is unsure what they want, and requirements are added as the project progresses. All resources are put into the coding and developing of the software meaning that as requirements change the software may need to be completely revamped. This means it is a very high-risk model. It is however a very simple model with little to no planning needed, it is very flexible, easy to manage and is not resource heavy. As well as being high risk it is unsuitable for complex and object orientated projects that have a long or ongoing life cycle.**

**So, its main differences from the previous models are the lack of processes and procedures.**

Once complete upload to canvas ‘SDLC Model Characteristics Exercise Submission’