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**Project: SDLC Compare**

**Compare and Contrast Two SDLC Approaches**

**Waterfall Model vs V–Model**

The Waterfall Model was created by Windston Royce in 1970. ("What is waterfall model in SDLC? Advantages & disadvantages," n.d.) Being the simplest of the Software Development Paradigms, the phases are completed in a sequential order one phase at a time.

**A screenshot of a cell phone

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**Figure 1** – Waterfall Model Example (Source: <https://www.tutorialspoint.com/software_engineering/software_development_life_cycle.htm>)

**The Waterfall Model is typically used when:**

Requirements are known and unchanging

The software being developed is not complex

The tools and techniques used are unchanging

All members of the development team are well trained and available

**Advantages of the Waterfall Model:**

This model is one of the simplest to use and understand

Due to the rigidity of the model, it is relatively simple to maintain

Due to the sequential order of the model, documentation is easy to develop and maintain

Because of the simplicity of this model, the overhead costs are minimized

**Disadvantages of the Waterfall Model:**

This model is very rigid and struggles to adapt to changing requirements

Due to how late in the life cycle of the software development testing is done, it is difficult to identify challenges and risks properly, which hampers the effectiveness of mitigation strategies

The V-Model was developed as an extension of the Waterfall Model. It seeks to help address the biggest weakness of the Waterfall Model by implementing testing throughout the development life cycle. ("V-Model in software testing," n.d.)

A close up of a map

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**Figure 2** – V-Model Example (Source: <https://www.tutorialspoint.com/software_engineering/software_development_life_cycle.htm>)

**Similar to the Water Model, the V-Model is typically used when:**

Requirements are known and unchanging

The software being developed is not complex

The tools and techniques used are unchanging

All members of the development team are well trained and available

**Advantages of the V-Model:**

Verification and validation are done early and throughout the software development life cycle

Rigid sequential model where phases are completed one at a time

Simple to use and understand

Because of the simplicity and rigidity of the model, it is easy to track progress

**Disadvantages of the V-Model:**

Due to the rigidity of the model, it does not support changing requirements well

Because of the sequential nature of the model, it does not support concurrent events

Because it’s difficult to go back in steps, this model is not appropriate for complex projects

**How are the Waterfall Model and the V-Model the same?**

Both the Waterfall Model and the V-Model use the same rigid sequential steps where a new phase does not begin until the previous phase is complete.

**How do the Waterfall Model and the V-Model differ?**

The Waterfall Model being the simplest model, holds off on testing until late in the software development lifecycle. Because of this lack of testing, it is possible for bugs or other issues to remain undiscovered until it’s devastating to the project. In contrast, the V-Model seeks to address this by including testing with each phase of the project development. The steps remain sequential but for each development activity, there is a testing phase associated with it. The Waterfall Model requires less overhead because it is simpler, but the V-Model is more likely to catch issues that arise during development earlier when it is easier to address.

**References**

Software development life cycle. (n.d.). Retrieved January 16, 2020, from https://www.tutorialspoint.com/software\_engineering/software\_development\_life\_cycle.htm

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