**Waterfall Model**



Waterfall model, typically, the outcome of one phase acts as the input for the next phase sequentially.

**Advantages:**

The advantages of waterfall development are that it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one.

-> Simple and easy to understand and use

-> Easy to manage due to the rigidity of the model. Each phase has specific

deliverables and review

-> Phases are processed and completed one at a time

-> Works well for smaller projects where requirements are very well understood

-> Clearly defined stages

-> Well understood milestones

-> deliverables and review

**Disadvantages:**

The disadvantage of waterfall development is that it does not allow much reflection or revision. Once an application is in the testing stage, it is very difficult to go back and change something that was not well-documented or thought upon in the concept stage.

-> No working software is produced until late during the life cycle

-> High amounts of risk and uncertainty.

-> Not a good model for complex and object-oriented projects.

-> Poor model for long and ongoing projects.

-> Cannot accommodate changing requirements

-> It is difficult to measure progress within stages etc

**Agile Model**



Agile process model" refers to a software development approach based on iterative development. ... Agile methods break tasks into smaller iterations, or parts do not directly involve long term planning. The project scope and requirements are laid down at the beginning of the development process

**Advantages:**

Agile methods are being widely accepted in the software world recently. However, this method may not always be suitable for all products.

-> Is a very realistic approach to software development.

-> Promotes teamwork and cross training

-> Functionality can be developed rapidly and demonstrated

-> Resource requirements are minimum.

-> Suitable for fixed or changing requirements

-> Delivers early partial working solutions

-> Little or no planning required

-> Good model for environments that change steadily etc

**Disadvantages:**

-> Depends heavily on customer interaction, so if customer is not clear, team can be

driven in the wrong direction.

-> There is a very high individual dependency, since there is minimum documentation

Generated.

-> Transfer of technology to new team members may be quite challenging due to lack of

documentation.

-> More risk of sustainability, maintainability and extensibility.

**DevOps Methodology**



DevOps is an extension of agile built around the practices that are not in agile's focus

DevOps is a practice of bringing development and operations teams together whereas Agile is an iterative approach that focuses on collaboration.DevOps is a methodology meant to improve work throughout the software development lifecycle. DevOps teams focus on standardizing development environments and automating delivery processes to improve delivery predictability, efficiency, security, and maintainability

**Advantages:**

-> Faster Development

-> Frequent Code release

-> Better Communication and collaboration

-> Increased Efficiency

-> Introduces automation to the development process

**Disadvantages:**

-> DevOps Requires Culture Change. It's commonly observed that you cannot just

change a company's culture on command.

-> Difficulties with Integration