Software Process Models

A brief introduction to the process models that can be used when developing a website.
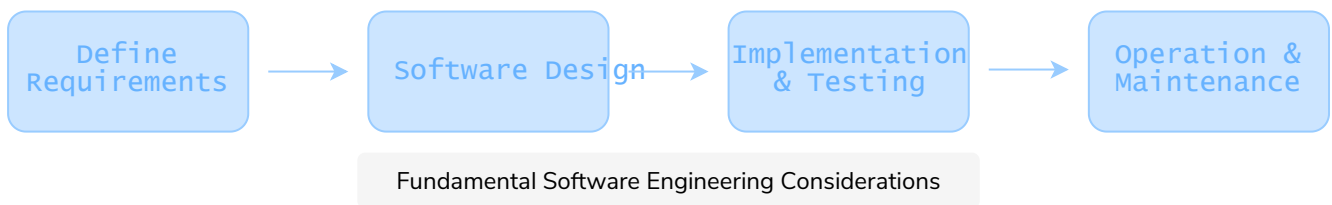
Software processes

Now that we have a basic idea of what goes into developing a website and what its multiple components are, we will proceed to discuss the different ways in which we can structure the development process.

A **software process** is defined as a set of related activities that leads to the production of a software product, such as a website. The software processes we will be discussing in this chapter are all concepts that fall under professional software engineering that entails building large scale web applications. However, these are all important concepts that you should be familiar with if you are looking to take up web development professionally or eventually planning to deploy your website since they provide a methodology to the process that allows you to organize your work into logical stages.

There are several different software processes that we will discuss in this chapter; however, we will first outline the four fundamental software engineering activities that all of them must comprise of:

1. *Software specification*: Defining the intended functionality of the software and potential constraints on its operation. In the case of a starter web application, this would be the stage where you define the features you want to implement on your website.

2. *Software design and implementation*: Producing the software according to the specifications articulated. This is the stage where the actual application is developed.

3. *Software validation*: Ensuring the software does what users want it to do. During this stage, you make sure the features you wanted to implement have been implemented correctly.

4. *Software evolution*: The ability of the software to adapt with evolving user requirements. This is an ongoing stage where you continuously come up with features that you think would make your application better and implement them.
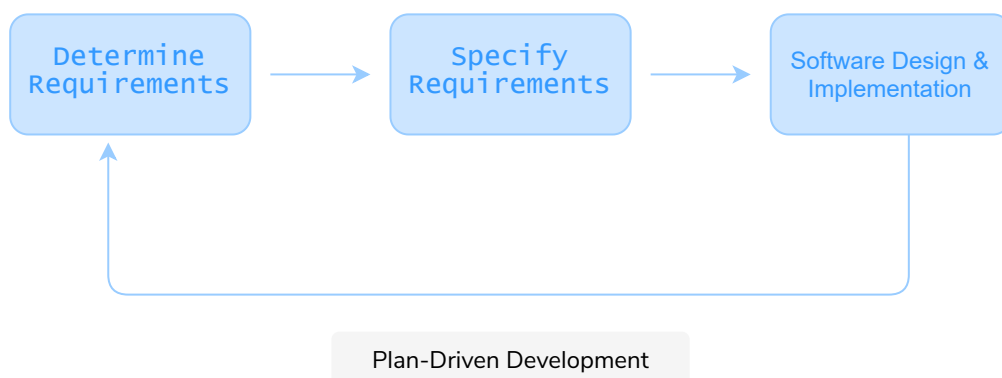

Fundamental Software Engineering Considerations

Although there is no "ideal" software process, and the efficiency of any given approach depends on individual strengths and weaknesses, it is important to understand the standard models that exist in order to know where to begin planning your website.
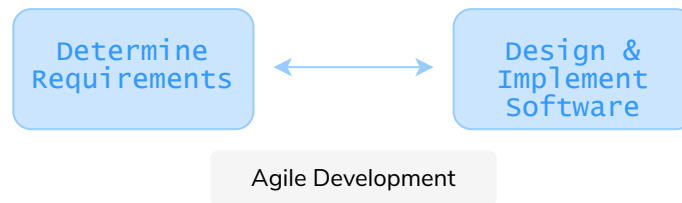
Categories

All process models can be categorized as one of the following:

1. Plan-driven

2. Agile

A **plan-driven process** is one where all of the process activities are planned in advance, and progress is measured against this plan.

Plan-Driven Development

An **agile process** is one where planning is incremental, and it is easier to change the process in accordance with changing customer requirements.

Determine
Requirements

⟷

Design &
Implement
Software

Agile Development

Quick Quiz on Software Engineering

Q Which of the following is NOT a fundamental software engineering activity?

○ **A)** Requirements definition

○ **B)** Software Design

○ **C)** Software Reuse

○ **D)** Implementation & Testing

COMPLETED 0%

1 of 1 ‹ ✓

Now that we have defined what a software process is and how any given model can be categorized, let's move on to look into some common models and discuss the specifics of each model!