The Software Process

A process is a collection of activities, actions, and tasks that are performed when some work product is to be created. An activity strives to achieve a broad objective with which software engineering is to be applied. An action encompasses a set of tasks that produce a major work .A task focuses on a small,but well-defined objective that produces a tangible outcome.

A generic process framework for software engineering encompasses **five activities:**

Communication- Before any technical work can commence, it is critically important to communicate and collaborate with the customer (and other stakeholders11 The intent is to understand stakeholders' objectives for the project and to gather requirements that help define software features and functions.

Planning-Any complicated journey can be simplified if a map exists. The map—called a software project plan—defines the software engineering work by describing the technical tasks to be conducted, the risks that are likely, the resources that will be required, the work products to be produced, and a work schedule.

Modeling-A software engineer creating models to better understand software requirements and the design that will achieve those requirements.

Construction-This activity combines code generation (either manual or automated) and the testing that is required to uncover errors in the code.

Deployment-The software (as a complete entity or as a partially completed increment) is delivered to the customer who evaluates the delivered product and provides feedback based on the evaluation.

Software engineering process framework activities are complemented by a number of umbrella activities. Typical umbrella activities include:

Software project tracking and control—allows the software team to assess progress against the project plan and take any necessary action to maintain the schedule.

Risk management—assesses risks that may affect the outcome of the project or the quality of the product.

Software quality assurance—defines and conducts the activities required to ensure software quality.

Technical reviews—assesses software engineering work products in an effort to uncover and remove errors before they are propagated to the next activity.

Measurement—defines and collects process, project, and product measures that assist the team in delivering software that meets stakeholders' needs; can be used in conjunction with all other framework and umbrella activities.

Software configuration management—manages the effects of change throughout the software process.

Reusability management—defines criteria for work product reuse (including software components) and establishes mechanisms to achieve reusable components.

Work product preparation and production—encompasses the activities required to create work products such as models, documents, logs, forms, and lists.

ESSENCE OF SOFTWARE PRACTICE

1. Understand the problem

2. Plan a solution

3. Carry out the plan

4. Examine the result for accuracy