

Q1. List and explain the activities in software process framework.

Ans. The process of framework defines a small set of activities that are applicable to all types of projects.

• The software process framework is a collection of task sets.

• A generic process framework encompasses five activities which are given below one by one:-

1. Communication:-

• This framework activity involves heavy communication and collaboration with the customer (and other stakeholders) and encompasses requirements gathering and other related activities.

2. ~~Plan~~ Planning:-

• This activity establishes a plan for the software engineering work that follows.

3. Modeling:-

• This activity encompasses the creation of models that allow the developer and the customer to better understand software ~~req~~<sup>requirements</sup> and the design that will achieve those requirements.

4. Construction:-

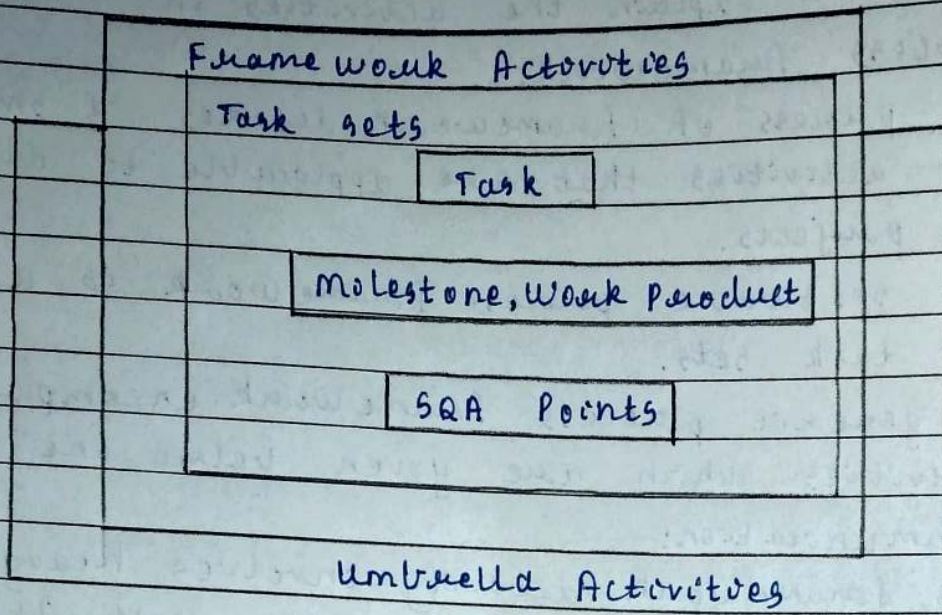
• This activity combines code generation (either manual or automated) and the testing that is required to uncover errors in the code.

5. Deployment:-

• The software is delivered to the customer who evaluates the delivered product and provides feedback based on evaluation.



# SPPU-SE-COMP-CONTENT - KSKA Git



Q2. Explain with neat diagram incremental model and state its disadvantages.

Ans. The incremental model combines the elements of waterfall model and they are applied in an iterative fashion.

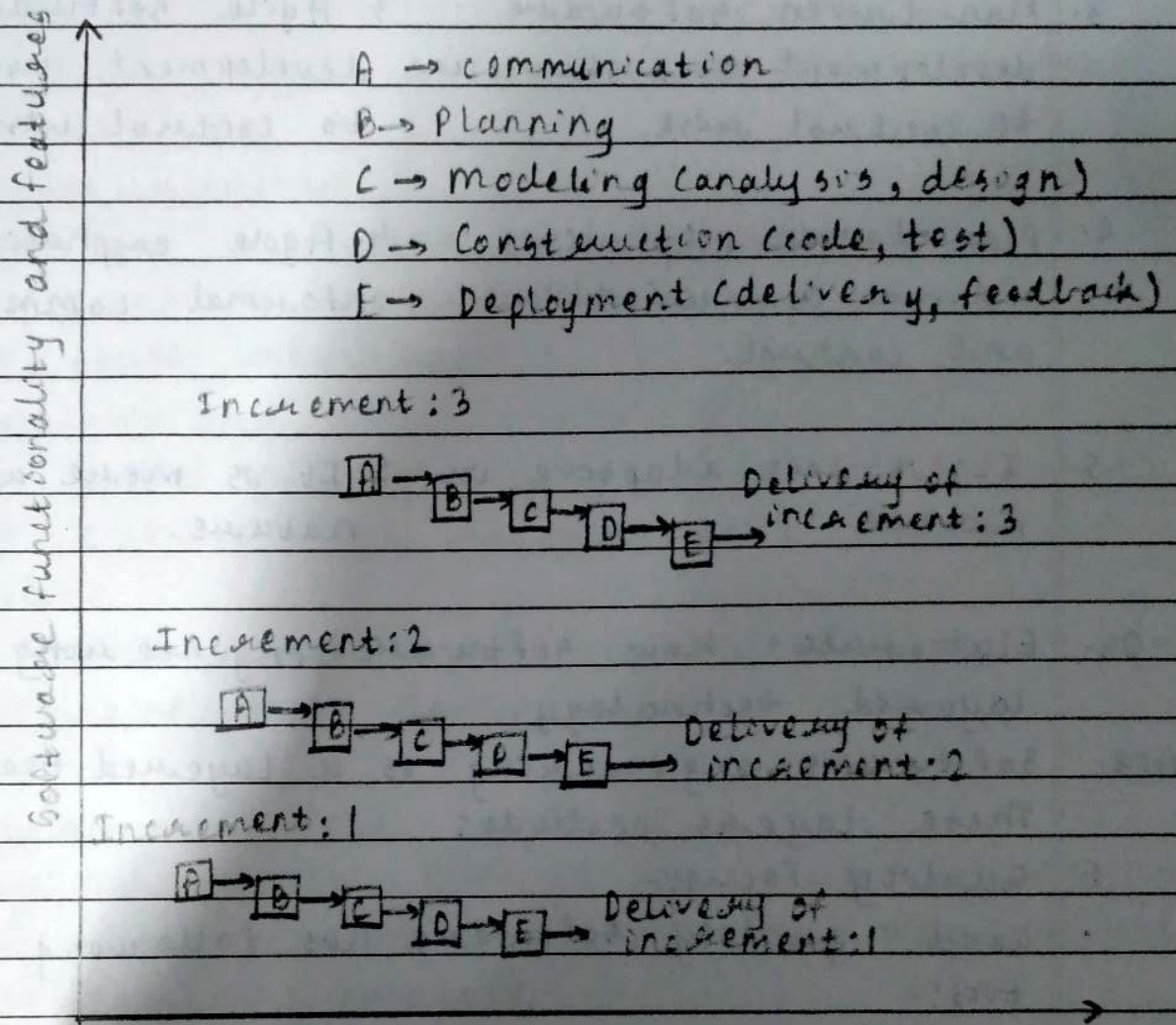
- The first increment in this model is generally a core product.
- Each increment builds the product and submits it to the customer for any suggested modifications.
- The next increment implements on the customer's suggestions and add additional requirements in the previous increment.

→ Disadvantages:

- The cost of the final product may cross the cost estimated initially.
- The model requires a very clear and complete planning.
- The planning of design is required before the whole system is broken into small increments.



# SPPU-SE-COMP-CONTENT - KSKA Git



Q3. Compare the plan driven and agile approach

Plan-driven	Agile
1. In a plan-driven approach, output associated with stage is also identified.	1. In agile development approaches, the design and implementation are considered as the main activity in the software development process.
2. In a plan driven deployment, iteration occurs within each of the activities	2. Iteration occurs across different activities.



# SPPU-SE-COMP-CONTENT - KSKA Git

3. Plan-driven software development uses structure to control risk.	3. Agile software development uses flexibility to control risk.
4. Plan-driven emphasizes formal communications and control.	4. Agile emphasizes continual informal communications.
5. It is less adaptive in nature	5. It is more adaptive in nature.

Q4. Elaborate how software engineering is a layered technology.

Ans. Software engineering is a layered technology. These layers include:

1. Quality Focus:-

• Good quality software has following characteristics:-

- i) Correctness is a degree to which software performs its required function.
- ii) Maintainability is an ease with which software is maintained.
- iii) Integrity is a security provided so that unauthorized user cannot access data or information.
- iv) Usability is the efforts required to use or operate the software.

2. Process:-

• Process defines following what activities ~~are~~ to be ~~ca~~ and tasks for software development!

- i) What activities are to be carried out?
- ii) What actions will be taken?



# SPPU-SE-COMP-CONTENT - KSKA Git

3. Method:-

- Method consist of collection of tasks that include:

i) communication:

- Between customer and developer.

ii) Requirement analysis:

- To state requirement in detail.

iii) Analysis and design modelling:

- To build a prototyping model of software to exhibit the requirements clearly.

4. Tools:-

- Software tool is an automated support for software ~~develo~~ development.

Q5. Explain unified processes.

Ans. Unified process (UP) is an architecture centric use case driven, iterative and incremental development process.

1. Inception:

- Communication and planning are main.

- Identifies scope of the project using ~~po~~ <sup>use-case</sup> model allowing managers to estimate costs and time required.

2. Elaboration:

- Planning and modeling are main.

- Detailed evaluation, development plan is carried out and demonstrate the works.

3. Construction:

- Project is developed and completed.

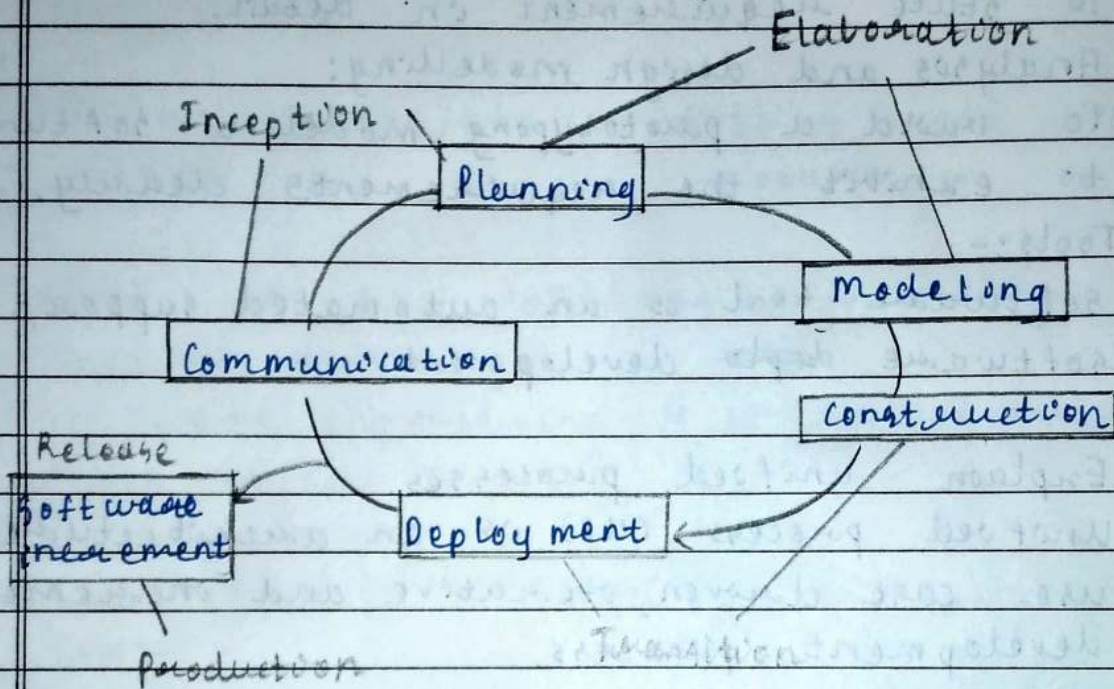
- System or source code is created and then testing is done.

4. Transition:



# SPPU-SE-COMP-CONTENT - KSKA Git --

- Final project is released to public.
- Transition the project from development onto production.
- 5. Production:
- Final phase of the model.
- Project is maintained and updated accordingly.



Q6. What is agility? List any 3 principles of it.

Ans. The meaning of agility is swift or versatility.

- 'Agile' process model refers to a software development approach based on iterative development.

→ 3 principles:-

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity - the art of maximizing the amount of work not done is essential.