SOFTWARE ENGINEERING

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ASSIGNMENT-2

SOFTWARE PROJECT MANAGEMENT AND CONCEPTS

I) Project planning : Foundation for success

Effective software project management begins with meticulous planning. This phase involves defining project goals, outlining scope, establishing timelines, allocating resources, and identifying potential risks. Clear and comprehensive planning sets the groundwork for a successful project execution.

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ii) Team management : collaboration and Role Allocation.

Central to project success is assembling the right team and managing them effectively. This involves selecting individuals with diverse skills, assigning clear roles and responsibilities, fostering collaboration and maintaining open lines of communication throughout the project lifecycle. Effective team management ensures synergy and productivity within the project team.

iii) Risk Management : Anticipate and Mitigate

Anticipating and mitigating risks is crucial in software project management. Identifying potential technological hurdles, changing requirements, resource limitations or external factors early in the process

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helps in devising strategies to mitigate these risks. A proactive approach to risk management minimizes disruptions and ensures smoother project execution.

iv) Agile Methodologies: Adaptability and Iterative Development.

The adoption of agile methodologies has revolutionised project management. Identifying potential technological hurdles, changing requirements, resource limitations, or external factors early in the process helps in devising strategies to mitigate these risks. A proactive approach to risk management minimises disruptions and ensures smoother project execution. A proactive's flexibility allows teams to respond to changes swiftly, deliver incremental value and maintain a responsive approach to evolving project requirements.

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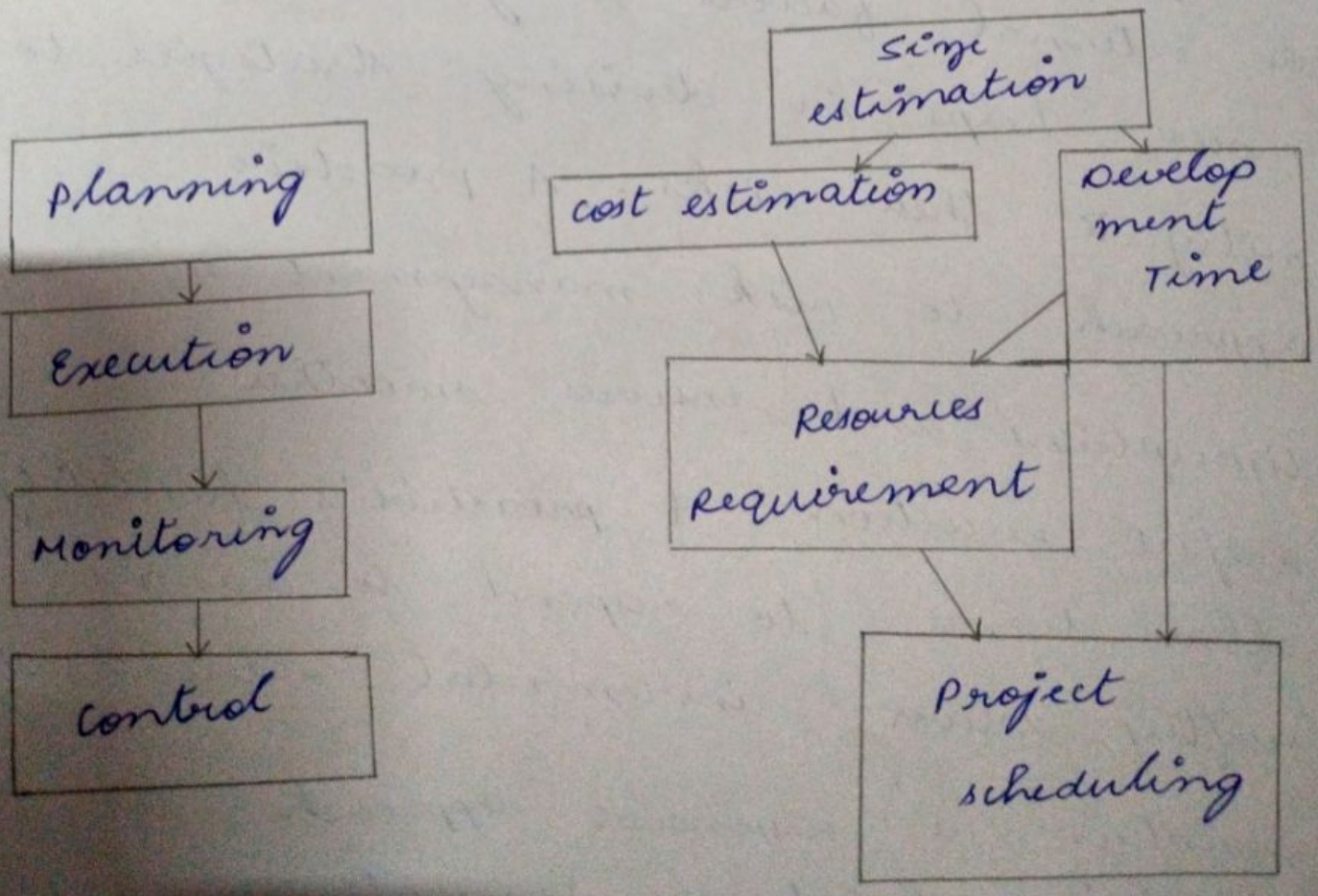
v) Quality Assurance: Ensuring Product Excellence.

Quality assurance is indispensable for delivering robust and reliable software. Rigorous testing, code reviews and continuous evaluation throughout the development process ensures that the software meets predefined quality standards. This ensures a high-quality end product that satisfies user expectations.



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PROCESS AND PROJECT METRICS

Effective software project management focuses on the four P's : People, product, process and project.

Product :

What is delivered to the customer is called Product. It may include source code, specification document, manuals, documentation etc...

Process :

Process is the way in which we produce software. It is the collection of activities that lead to a product. An efficient process is required to produce good quality products.

Project :

We conduct planned and controlled software projects for one primary reason - it is only to manage complexity.

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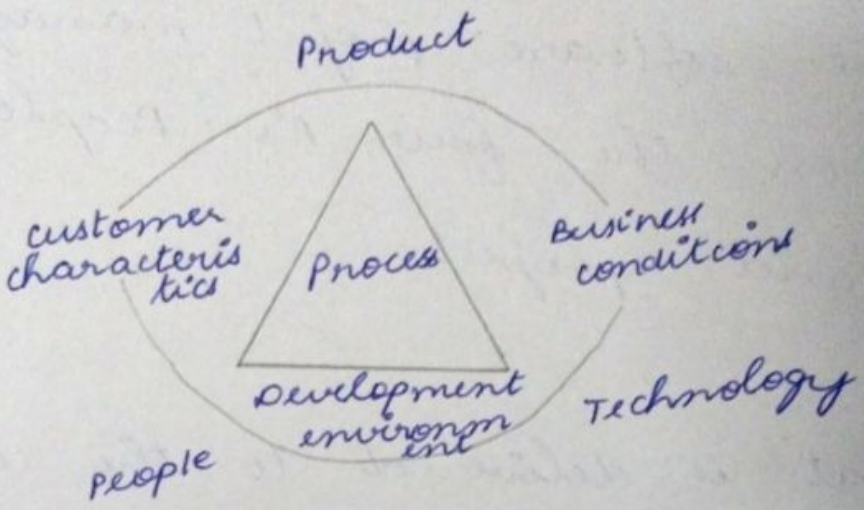
Determinants for software quality and organisational effectiveness



Metrics in the process and project Domains

Process metrics

They are collected across all projects and over long periods of time. Their intent is to provide a set of process indicators that lead to long-term software process improvement.

Project metrics

They enable a software project

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manager to

1) Assess the status of an ongoing project.

2) Track potential risks

3) Uncover problem areas before they go critical.

4) Adjust work flow or tasks and

5) Evaluate the project team's ability to control quality of software work products.

Process and project metrics

We can derive process metrics by measuring the characteristics of specific software engineering tasks.

There are "private and public" uses for different types of process data.

Examples of private metrics:

Defect rates (by individual)

Defect rates (by component)

Errors

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some process metrics are private to the software project team but public to all team members.

Software process metrics can provide significant benefit as an organisation works to improve its overall level of process maturity.

- Use common sense and organisational sensitivity when interpreting metrics data.
- Provide regular feedback to the individuals and teams who collect measures and metrics.
- Don't use metrics to appraise individuals.
- Work with practitioners and teams to set clear goals and metrics.
- Never use metrics to threaten individuals or teams.

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