SNS COLLEGE OF ENGINEERING

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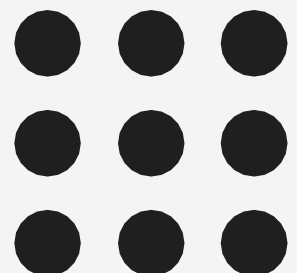
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Department of Information Technology

II Year / III Semester

Topic 1 - Introduction to Software Engineering
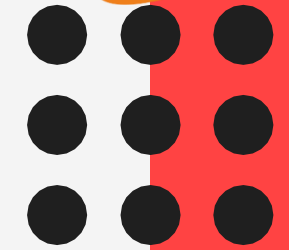
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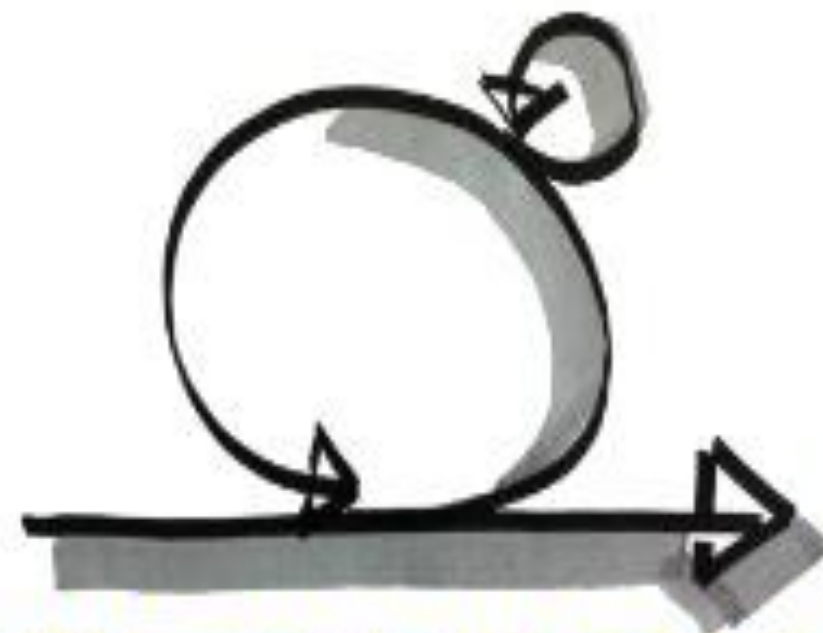
Introduction to Software Engineering- Software Paradigms
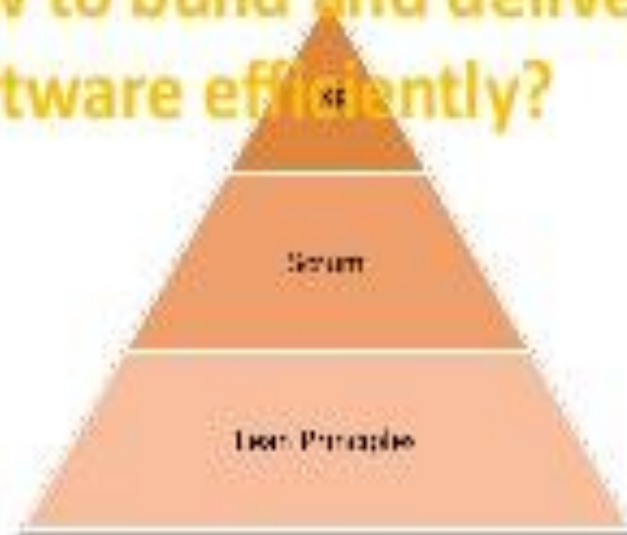
Prepared by S.Priyanka, AP/IT

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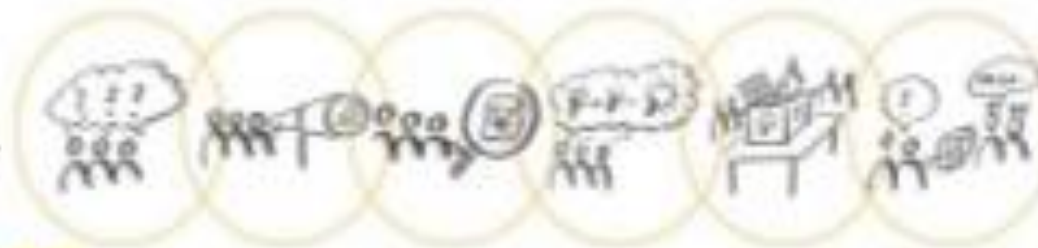
What is Engineering?

Engineering is the application of scientific and practical knowledge in order to invent, design, build, maintain, and improve systems, processes, etc.
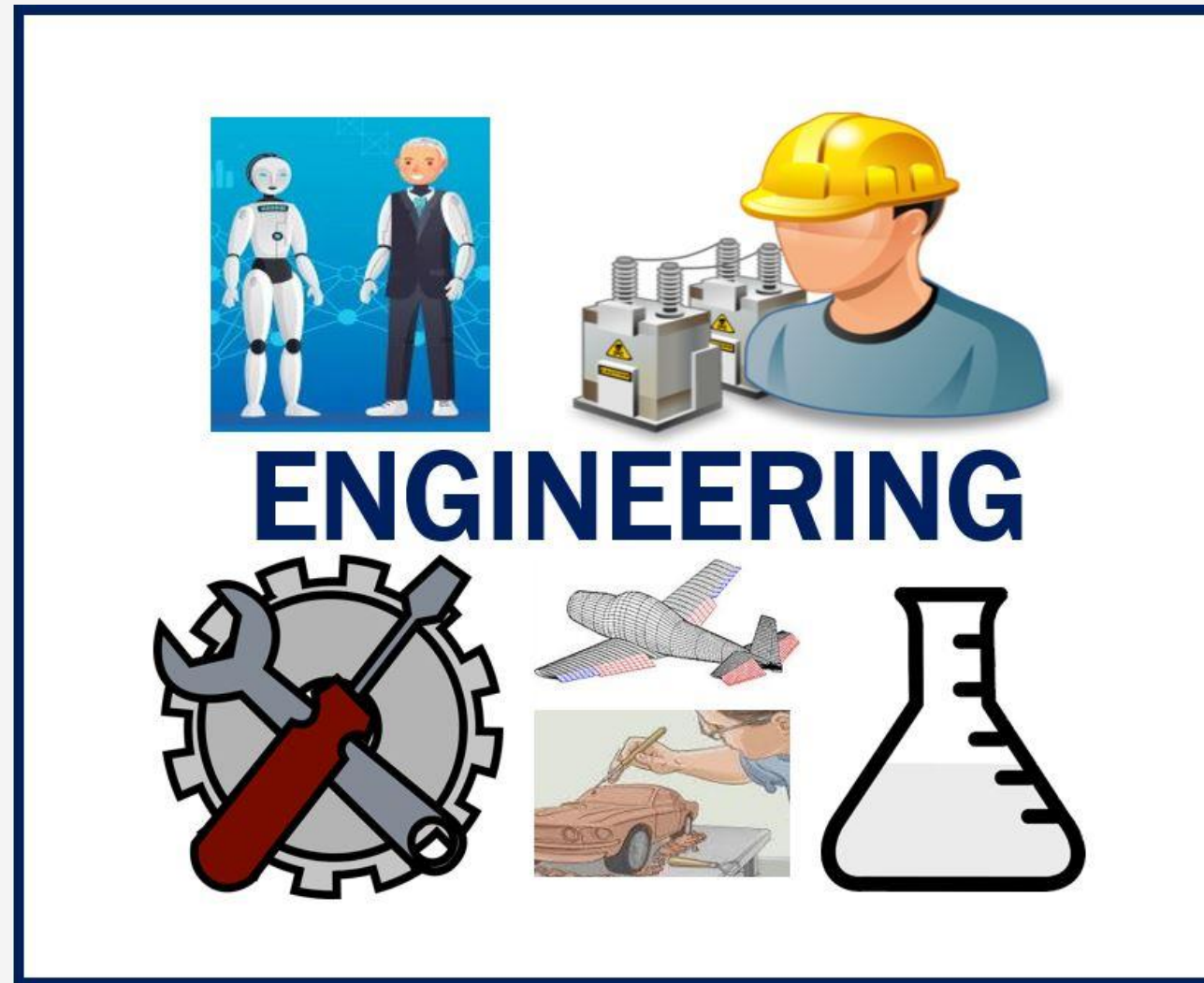
SOFTWARE

What is Software?

- The software is collection of Integrated programs

- Software Engineering provides a standard procedure to design and develop a software.

- Software consists of carefully-organized instructions and code written by programmers in any of various special computer languages.

What is Software Engineering?

According to IEEE's definition software engineering can be defined as the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software, and the study of these approaches; that is, the application of engineering to software.

- Software paradigms refer to the methods and steps, which are taken while designing the software.
- There are many methods proposed and are in work today, but we need to see where in the software engineering these paradigms stand.
- Programming paradigm is a subset of Software design paradigm which is further a subset of Software development paradigm.
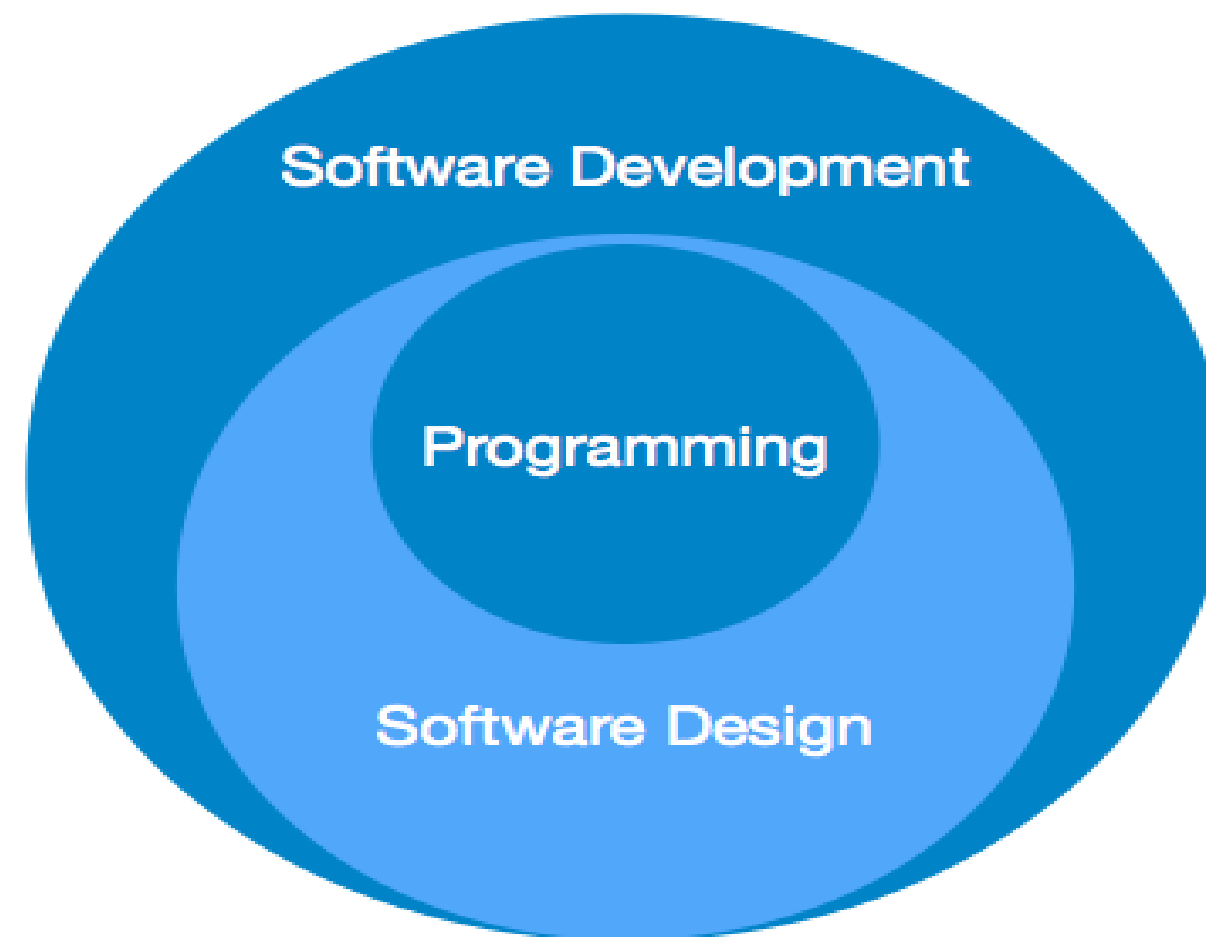
Software Development Paradigm

- This Paradigm is known as software engineering paradigms where all the engineering concepts pertaining to the development of software are applied.
- It includes various researches and requirement gathering which helps the software product to build.
- It consists of –

Requirement gathering

Software design

Programming

Software Design Paradigm

This paradigm is a part of Software Development and includes

- Design
- Maintenance
- Programming

Programming Paradigm

Tis paradigm is related closely to programming aspect of software development.
It includes-

- Coding
- Testing
- Integration

Verification

- The process of checking that a software achieves its goal without any bugs.
- It is the process to ensure whether the product that is developed is right or not.
- It verifies whether the developed product fulfills the requirements that we have.
- Verification is static testing.
- Verification means **Are we building the product right?**

Validation

- The process of checking whether the software product is up to the mark or in other words product has high level requirements.
- It is the process of checking the validation of product i.e. it checks what we are developing is the right product.
- It is validation of actual and expected product.
- Validation is the dynamic testing.
- Validation means **Are we building the right product?**

Software Paradigms