# SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107

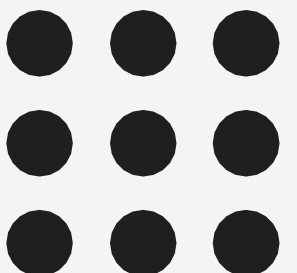## An Autonomous Institution

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## DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE

**Course Code and Name : 23ITB203 / Principles of Operating Systems**

**II YEAR / IV SEMESTER**

**Unit 1: Operating System Design and Implementation**

# Operating System Design and Implementation

## Design Goals:

1st Problem:- Defining goals and specification
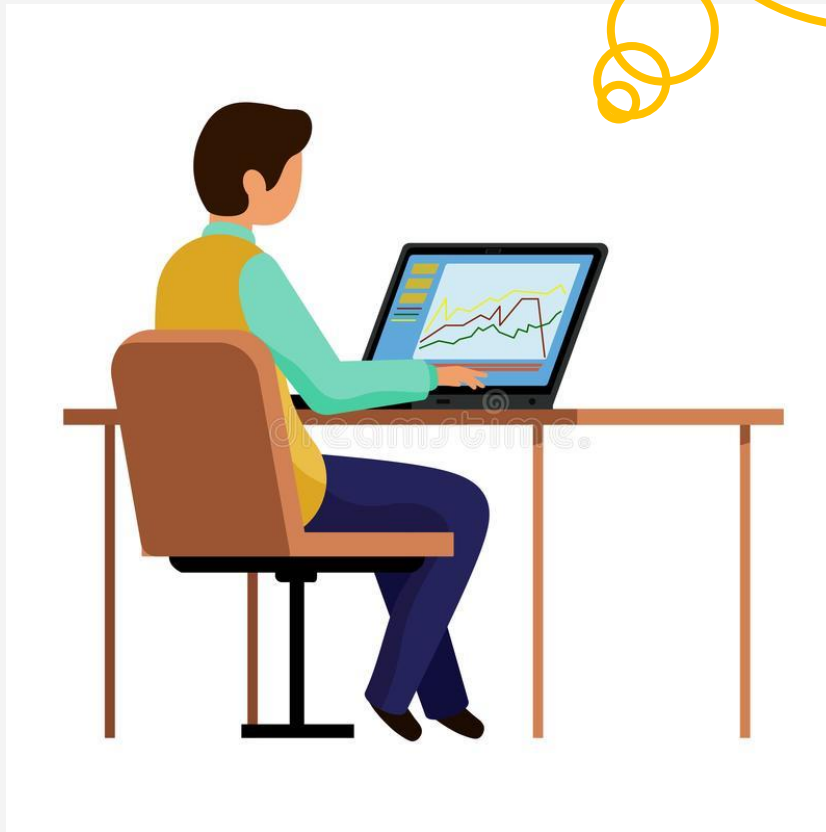- Choice of Hardware
- Type of System

Beyond this highest design level, the requirements may be much harder to specify

Requirements:

➤ User Goals
➤ System Goals

**User Requirements:**
    **(User Goals)**

They System should be :
Convenient to use,
Easy to learn and Use
Reliable safe and fast

The System should be:
Easy to design, implement, maintain,
Operate. It should be flexible, reliable,
Error free & efficient

**Designer, Engineer**
**Requirements:**
**(System Goals)**

**Mechanisms and Policies:**

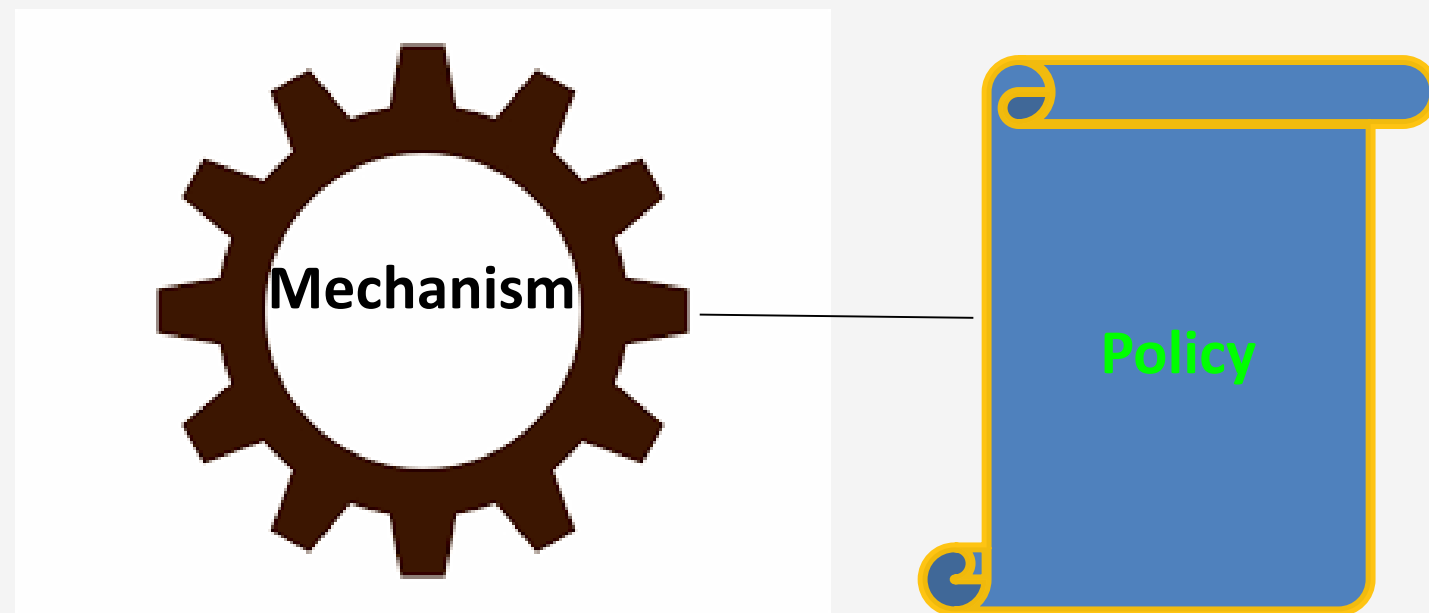**Mechanisms determine how to something**
**Policies determine what will be done**

OS Design & Implementation / S.Priyadharshini / AD / SNSCE
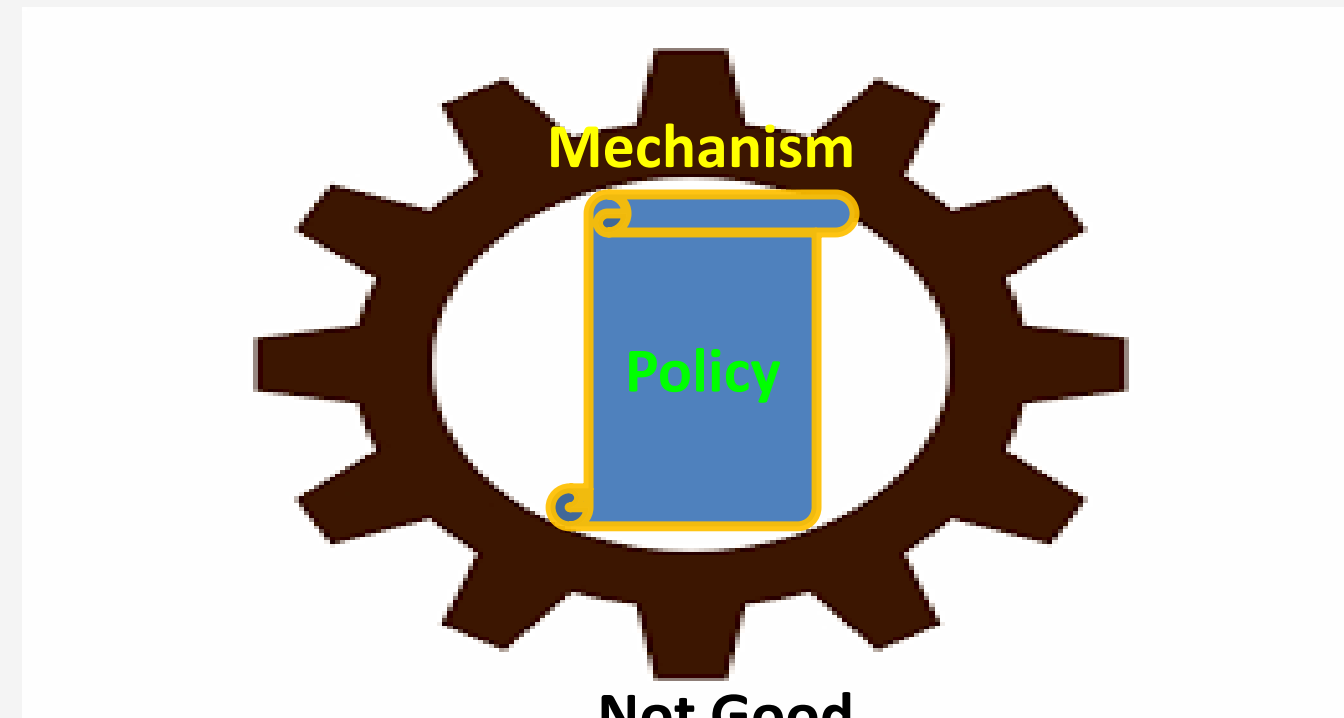
# Mechanisms and Policies:

### Mechanisms determine how to something
### Policies determine what will be done

**One important principle is the separation of policy from mechanism**



Good and Flexible

Not Good

## Implementation:

- ➢ Once an operating system is designed, it must be implemented
- ➢ Traditionally, operating systems have been written in assembly language
- ➢ Now, however, they are most commonly written in higher-level languages such as C, C++

Advantages of writing in higher level languages:

➤ The code can be written faster
➤ It is more compact
➤ It is easier to understand and Debug
➤ It is easier to port

Example:

    MS-DOS was written in Intel 8088 assembly language. Consequently, it is available on only the Intel family of CPUs.

    The Linux operating system, in contrast is written mostly in C and is available on a number of different CPUs, including Intel 80x86, Motorola 680X0 and MIPS RX000

# Structure of Operating System

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