# Assignment 8 - Multilevel Queue Scheduling

# 2022/CS/180

- **While creating this code, I have primarily obtained process counts, switch time and time quantum from the user.**
- **Then, in a for loop, the burst time and priority of each process are obtained and entered into each queue according to that priority.**
- **In this code, enqueue function, dequeue function, main function, RR function, FCFS function, SJF function have special functions for each function.**
- **Each queue function is called in a while loop in the main function.**
- **This is a simple introduction to my code.**

RR,FCFS,SJF CPU shceduling algorithms have their advantages and disadvantages as detailed below.

1.FCFS:Processes are executed in the order they arrive in the ready queue.

## Advantages:

- Simple and easy to understand.
- No starvation as every process gets a chance.

## Disadvantages:

- Poor in terms of average waiting time, especially for long processes.
- Convoy effect: short processes get stuck behind long processes ,leading to inefficiency.

2.SJF: The processes with the shortest burst time is selected next.

## Advantages:

- Minimizes waiting time ,thus reducing overall turnaround time.
- Efficient for processes with variable burst times.

## Disadvantages:

- Requires accurate estimation of burst times , which is often challenging.
- Can lead to starvation for longer processes if there are always shorter processes arriving.

3.RR: Each process is assigned a fixed time slice(quantum) to execute before moving to the next process in the ready queue.

## Advantages:

- Fair distribution of CPU time among processes.
- Prevents starvation as every process gets a turn.
- Suitable for time-sharing systems.

## Disadvantages:

- Higher turnaround time and waiting time compared to SJF, especially for long processes.
- The choice of time slice can impact performance-too short may lead to high context switching overhead, too long may result in poor responsiveness.