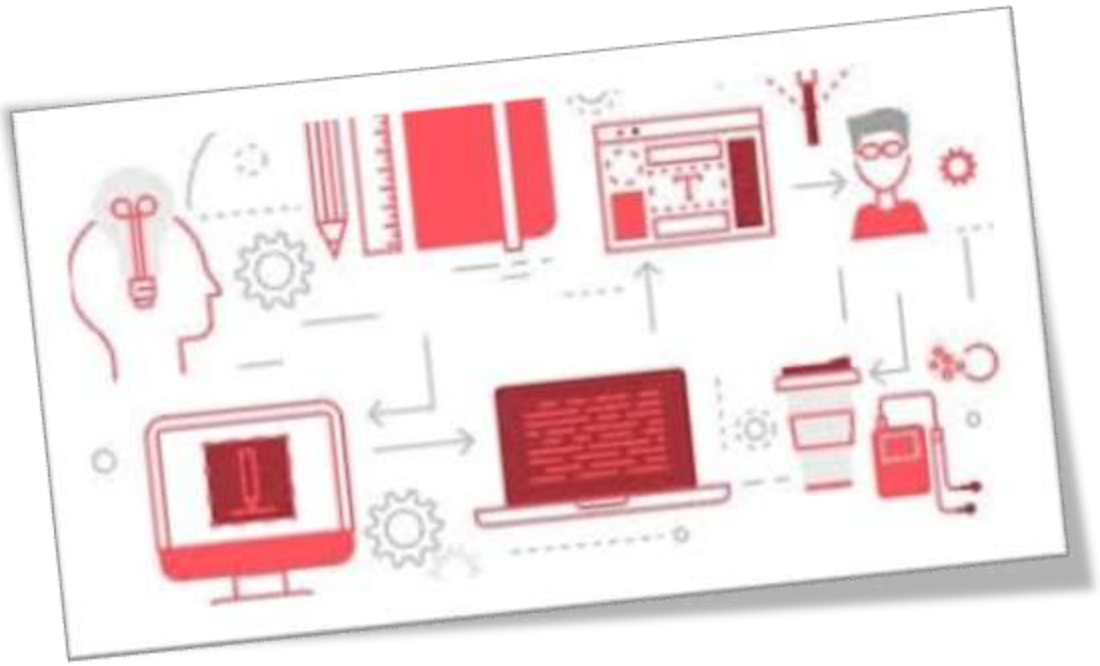
Functionality and Features



The MLQ CPU Scheduling module provide the following functionalities and features.

Process Input

Users can input details about new processes, such as arrival time, CPU burst time, and priority level.

Users can add multiple processes at once and see a summary of the added processes.

Priority Management

Users can set or update the priority levels of processes.

Users can view the current priority levels of all processes.

Simulation Control

Users can start, pause, and stop the simulation.

Users can adjust the simulation speed and view progress indicators.

Statistics and Metrics

Users can view relevant statistics and metrics, such as average waiting time, turnaround time, and CPU utilization.

Users can view statistics for individual processes or for the entire simulation.

Error Handling

The module provide clear and informative error messages when users encounter errors or invalid inputs.

Users can easily correct errors and continue using the simulation.

Visualization

The module provide a graphical representation of the MLQ CPU scheduling algorithm, such as a Gantt chart or timeline.

Users can visualize the execution of processes and their priority levels.

Fairness Mechanism

The module include a mechanism to prevent CPU starvation for lower priority processes.

The module implement strategies such as aging or time-based priority adjustments to ensure fairness in CPU allocation.

Context Switching

The module handle context switching between processes efficiently to minimize overhead.

The module ensure that context switching does not negatively impact the performance of the MLQ CPU scheduling algorithm.

Dynamic Priority Adjustment

The module handle dynamic changes in process priorities efficiently.

The module ensure that changes in priorities do not negatively impact the performance of the MLQ CPU scheduling algorithm.