**DESCRIPTION:**

WE CAN INTERPRET FROM THE QUESTION IS THAT THE SITUATION REQUIRES AN ALGORITHM THAT CAN HANDLE HUGE NUMBER OF REQUESTS AT A PARTICULAR TIME.

THE PROBLEM ALSO STATES THAT THE PORTAL OPENS BETWEEN 10AM TO 12AM AND THERE ARE 2 SEPARATE QUEUES FOR STUDENTS AND FACULTIES AND MOST IMPORTANTLY EVERY USER GETS FAIR SHARE OF TIME.

WE ARE REQUIRED TO COME UP WITH A PROGRAM IN C THAT TAKES INPUT FROM USER THE PROCESSES AND THEIR RESPECTIVE BURST TIMES WITH THE TYPE OF THEIR QUEUE (STUDENT/FACULTY)

THE PROGRAM AT LAST ALSO PRINTS THE AVERAGE WAITING AND TURN AROUND TIME FOR EACH PROCESS.

**ALGORITHM:**

The Solution is Implemented using MULTILEVEL FEEDBACK QUEUE SCHEDULING.  
Both the Queues has Equal Priority and Further each queue is implemented using FCFS.

Line No 40 to 52 has the greatest order of growth in the entire program that is **O(n^2)** so it dominates O(n) running time of separate FCFS queues.

**PURPOSE OF USE AND CONSTRAINTS:**

Multilevel Feedback Queues are used in Modern Operating Systems where we can have 2 types of Processes like Background and Foreground Process and operating system has to efficiently manage both the queues and their respective processes.  
It has to be kept in mind that Foreground process have higher priority than Background ones.  
  
This type of problem is also faced in cloud computing where a scaled up web-server like amazon sale, Flipkart sale, Exam Results CBSE, Hostel Registration(UMS),….. gets a huge no of requests at a given time and each request is to be handled with fair share of time.

**CONSTRAINTS**:

According to the Given Problem the following constraints are needed:

* There are Multiple Requests at given Time
* There are 2 Queues (Student and Faculty)
* Fair Share of time for each process
* The Scheduling only works between 10am to 12am
* Need to calculate both Average Waiting and Turnaround Time