# OS Project Report:

The Data Structure Used is: Queue & Priority Queue.

The Explanation of Algorithms is:

(1)HPF:

- using Priority Queue with Priority of Process is the Key.
- In the Main Loop first we read Processes by Massage Queue Techniques
- Then Checking Validity Then Pushing in the Priority Queue.
- The Next Step Checking if the Running Process is finished so I will finish it with finish Signal.
- If the scheduler found that no Process running now & there is waiting Processes in the Priority Queue, then I will pick a process & starting it with a Starting Signal.
- if it's last process or the algorithm finish, we will out from this loop done.
- HPF had finished.

(2)RR:

- using Queue with Priority of Arrival time is the first enter.
- In the Main Loop first we read Processes by Massage Queue Techniques
- Then Checking Validity Then Pushing in the Queue.
- The Next Step Checking if the Running Process is not finished yet so I will stop it with Stopping Signal and push it pack to queue
- if the Running Process is already finished so I will finish it with finish Signal.
- If the scheduler found that no Process running now & there is waiting Processes in the Queue, then I will pick a process & checking if it's first time to run so I will start it with a Starting Signal but if not, I will continue it by Continuing Signal.
- if there is no process in the Queue & no process running & I reach #num_of_Process the algorithm finish, we will out from this loop done.
- RR had finished.

(3)STRN:

- using Priority Queue with Remaining time of Process is the Key.
- In the Main Loop first we read Processes by Massage Queue Techniques
- Then Checking Validity Then Pushing in the Priority Queue.
- The Next Step Checking if the Running Process is finished so I will finish it with finish Signal.
- Now I will Compare the Remaining time of the Current Process with The Remaining time of the first Process in the Priority Queue, then the Smallest will be running.

- If the scheduler found that no Process running now & there is waiting Processes in the Priority Queue, then I will pick a process checking if it's first time to run so I will start it with a Starting Signal but if not, I will continue it by Continuing Signal.
- if it's last process or the algorithm finish, we will out from this loop done.
- STRN had finished.

The Assumptions is:

(1) No Process arrive @ 0 time.
(2) The File Processes.txt is sorting ascending to Arrival Time.
(3) User input for RR-Quantum > 0 & integer number.

Work Load Distributions:

*Mamdouh Ahmed Attia: {Process Generator.c}, {Integration of Phase1}, {Allocation Functions}*

*Mahmoud Abdelhamid Ali: {HPF}, {Headers.h}, {Integration of Phase1}, {Integration of Phase2},*

*Omar Khaled Ali: {SRTN},{Headers.h}, {Deallocation Functions}, {Repair & Find Errors}, {The Buddy System.c}*

*Kareem Ashraf Mohammed: {RR},{Process.h}, {Integration of Phase2}, {Repair & Find Errors}*

The Time Taken in Each Task:

Phase (1): 2-Days for Scheduler.c 1-Day for Header.h 1-Day for Process.c 2-Day for Process Generator.c

Phase (2): 2-Days for Allocating Functions 2-Day for Deallocating Functions 2- Days for Remaining integration