OPERATING SYSTEMS Hw 3 Process Scheduling

Problem 1. Write a process scheduler simulator in C. You should implement the following algorithms (Your program should ask the user the type of algorithm it chooses):

1. FCFS (6 pts.)
2. SJF (Both preemptive and non-preemptive versions) (13 pts.)
3. Priority based (Both preemptive and non-preemptive versions) (13 pts.)
4. Round robin (Your program should ask the quantum time) (8 pts.)

Your program should read process information from a file named "proc_list.h" (You may fix the maximum process number to 30). The format of the "proc_list.h" should be as follows:

Process ID	Duration(Total CPU Bursts)	Arrival Time	Priority

Your program should print the scheduling status as follows (an example) (20 pts.):

Process 1 started at 45 ms.
Process 1 finished at 60 ms.
Process 2 started at 60 ms.
Process 2 is interrupted, Process 3 is started at 80 ms.
Process 3 is finished at 90 ms.
Process 2 is started at 90 ms.
Process 2 is finished at 100 ms.

Also your program should print the following information (20 pts.):
Throughput
Average turnaround time
Average waiting time
Average response time

Please write a detailed report (20 pts.) including your program design and show the performance of each scheduling algorithm.

Best homework (If good enough) will be sent to a local conference and the student will be awarded with bonus grades (20 pts).
Homework Policies:

1. Please do not copy-paste similar code from Internet. Cheating is strongly discouraged.
2. Each student should do his homework seperately. Group work is not allowed.
3. Late homeworks will be graded as 0.
4. Please comment your source codes.
5. Your Class Demo will be on 18.April.2011.
6. You may run the code on Linux or Windows.

Note: Please obey these grading policies, unless your grade will be decreased.
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