Assessment Tool

Given a *template.c*, implement the simulation of the **Shortest Remaining Processing Time (SRPT)** algorithm in a given list of processes. The following are the description of the functions in template:

- `int ReadProcesses(int *arrival_time, int *job_length)` - This function reads the list of processes from process.txt where the first line is the process count and the succeeding lines contain a pair of the process' arrival time and job length. You may assume that the processes are sorted in ascending order by arrival time
- `void RunSimulation(int *arrival_time, int *job_length, int process_count)` - This function simulates the SRPT scheduling algorithm. For every cpu cycle, it manages the processes in the ready queue (e.g. enqueue newly arrived processes, updates run time and waiting of process in the queue).
- `void Processing()` - This function simulates processing of a single CPU cycle. It updates run time and waiting of process in the queue and removes terminated processes from the queue.
- `void Enqueue(int process_id, int arrival, int job_length)` - This function inserts the new process in the ready queue.
- `void Dequeue()` - This function removes the terminated process, which is found at the head of the queue.

Below is a screenshot of the sample output of your exercise:

```
CPU Cycle: 1

        Printing Ready Queue
        Process ID: 0, Arrival Time: 1, Job Length: 5, Wait Time: 0, Run Time: 1

CPU Cycle: 2

        Printing Ready Queue
        Process ID: 0, Arrival Time: 1, Job Length: 5, Wait Time: 0, Run Time: 2

CPU Cycle: 3

        Printing Ready Queue
        Process ID: 0, Arrival Time: 1, Job Length: 5, Wait Time: 0, Run Time: 3

CPU Cycle: 4

        Printing Ready Queue
        Process ID: 0, Arrival Time: 1, Job Length: 5, Wait Time: 0, Run Time: 4
        Process ID: 1, Arrival Time: 4, Job Length: 3, Wait Time: 1, Run Time: 0

CPU Cycle: 5
        The following process already ended:
        Process ID: 0, Arrival Time: 1, Job Length: 5, Wait Time: 0, Run Time: 5

        Printing Ready Queue
        Process ID: 2, Arrival Time: 5, Job Length: 2, Wait Time: 1, Run Time: 0
        Process ID: 1, Arrival Time: 4, Job Length: 3, Wait Time: 2, Run Time: 0

CPU Cycle: 6

        Printing Ready Queue
        Process ID: 2, Arrival Time: 5, Job Length: 2, Wait Time: 1, Run Time: 1
        Process ID: 1, Arrival Time: 4, Job Length: 3, Wait Time: 3, Run Time: 0
```