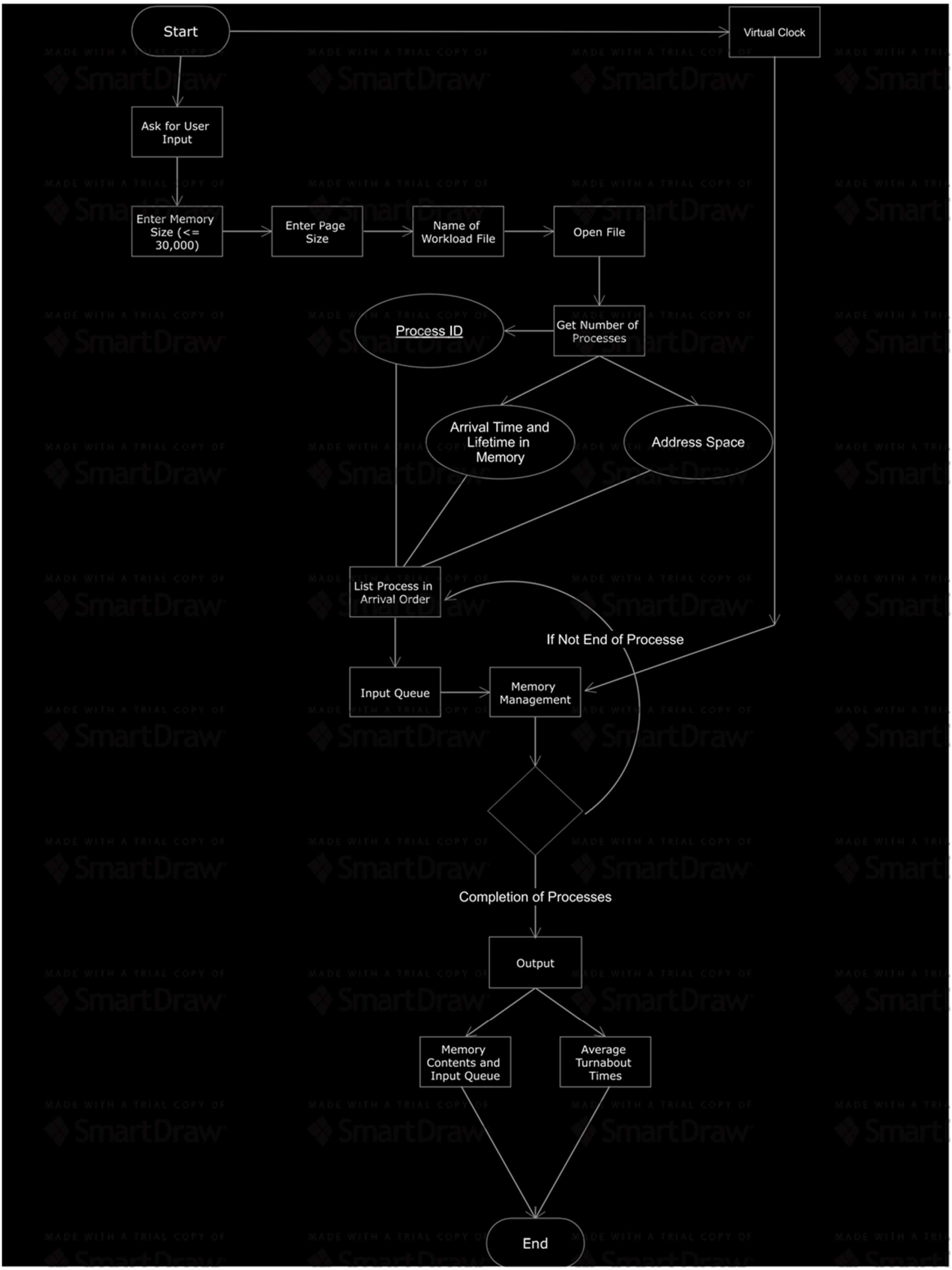
Design Document:

The purpose of this program is to create a simulation that will explore the effects of limited memory and memory management. It shall perform the following sequence of steps:

1. The simulator will prompt the user for the size of the memory and the page size.
2. The program will then prompt the user for the name of the workload file.
3. The program will read in the number of N processes that are defined in the file.
4. Each individual process will store a unique id, arrival time, lifetime in memory, and address space specifications.
5. As the processes in the file arrive in the Input Queue, it will be store in a First Come First Served algorithm.
6. At the time, the Input Queue would simultaneously work with the memory management, in the virtual clock, to adjust the memory map to reflect memory allocated to each process.
7. Once all processes have arrived to the Input Queue and updated in the virtual clock, the program will output each process with their id in the first line, arrival time and lifetime in memory in the second line, followed by the address space, and finally average turnaround time at the end.
8. End of program


Start
Virtual Clock
Ask for User Input
Enter Memory Size (<= 30,000)
Enter Page Size
Name of Workload File
Open File
Process ID
Get Number of Processes
Arrival Time and Lifetime in Memory
Address Space
List Process in Arrival Order
If Not End of Processe
Input Queue
Memory Management
Completion of Processes
Output
Memory Contents and Input Queue
Average Turnabout Times
End