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Priority queue

It is an abstract data type.

Scheduling

- In a multi-user computer system, multiple users submit jobs at different point of time to run a single process.
- We assume that the time required by each job on that process is known in advance. Further, jobs can be preempted (stacked and resumed later).
- One policy which minimizes the average waiting time is SRPT (Shortest Remaining Processing Time). This policy says that the processor schedules the job with lowest remaining processing time at any point of time.
- To begin with, if a processor has a bunch of jobs, then it takes the one with minimum processing time and schedules it on the processor. When the job is finished, the next smallest job is chosen from the collection it has and schedules it.
- If, while the job is running, a new job arises with processing time less than the remaining time of the current time, the current job is preempted and the new job is scheduled and after it is finished, the preempted job is resumed.

Heap

Parent node	$\frac{i}{2}$
Left child	$2i$
Right child	$2i+1$

Types of heap:

- Max heap
- Min heap