

Zewail city for Science and Technology Aerospace Engineering Program

CIE 205, Spring 2021.

Project Data Structures

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| List name | Chosen DS | Justification |
| EventList | Priority queue(small first) | The applied criteria depend mainly on the arrangement of the different events. Formula for priority depends on the Timestamp(smaller first). |
| AreasWaitinglist | Priority queue(small first) | There is n numbers of waiting lists for each area, with the VIP flights arranged first in it. We chose the queue as the input file is arranged in an ascending order. Since the VIP flights have greater priority (0 priority), they will be the first to come out of the queue then the normal ones would be out based on the priority equation which depends on the number of passengers and flight duration. |
| ServingFlights | PriorityQueue | This queue stores all flights that are served in the order of there finished time. |
| finishedFlights | Queue | This queue sorts all flights that are finished in the order of their timestamp, which the first one comes out is the first one that comes in has less time step). |
| lanesLIST | Queue | It’s a normal queue to store lanes, it doesn’t have to depend on any factor. It just act as a list; |
| preparedEvents | PriorityQueue(small first) | This queue will store the any event(not only given ones) happen that require any change in the other Data structures to be used to simulate in order without needing to path in each timestamp.  Its priority is depending on the timestamp(least first) |
| tempQ | PriorityQueue | This queue is used just to store the data temporary in function as to get specific thing from another queue/DS and re put the data in the original queue/DS |
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