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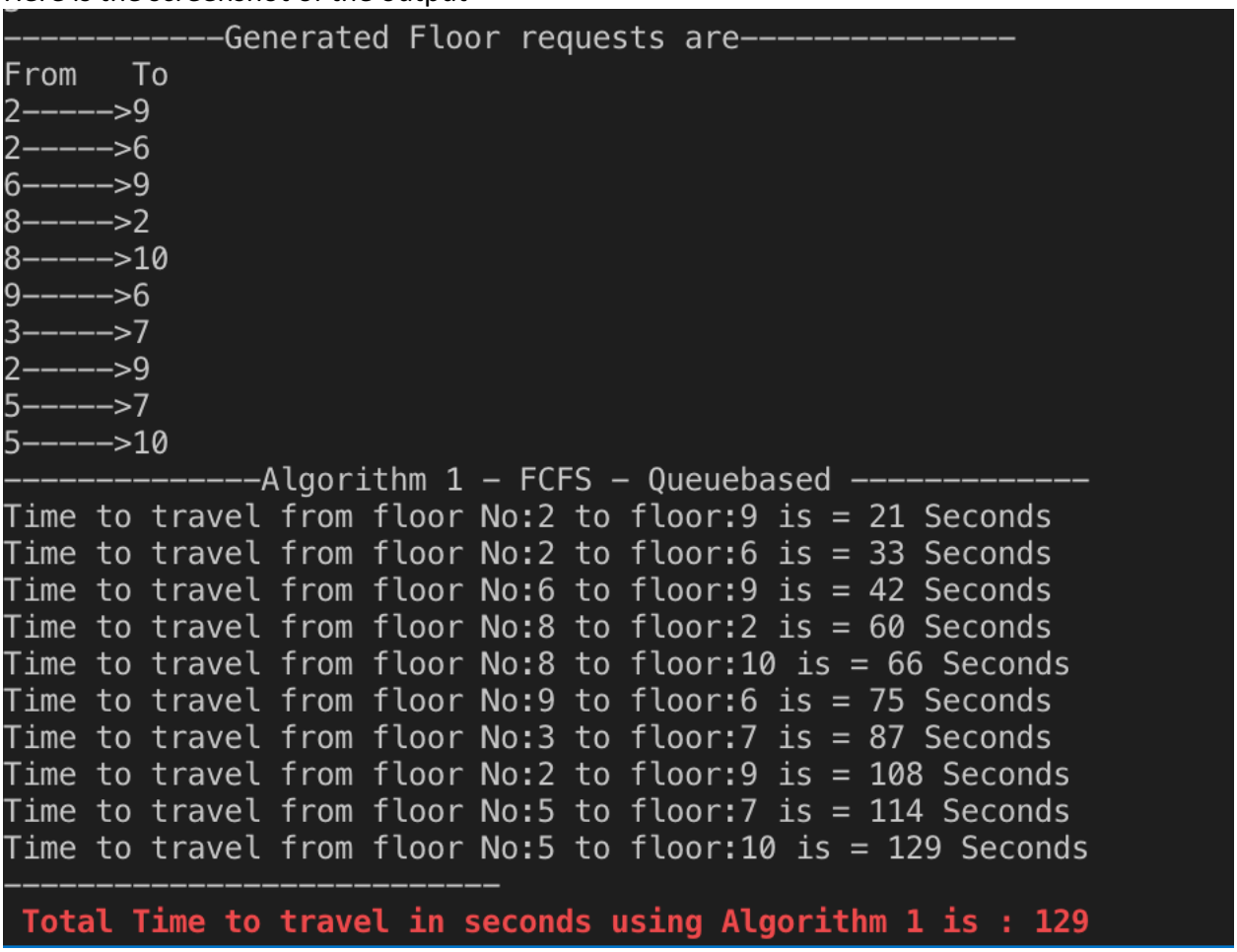
Algorithm1:

- Serves the requests based on the First come first serve.
- It generates a random number of requests to from and to destinations.
- Uses those requests to calculate the time.
- Here is the screenshot of the output



Algorithm2:

- In Algorithm 2, the requests are being served based on the more number of requests from particular floor.
- Therefore, it checks which floor has more requests and stores those destinations in an array and sends them to particular destination.
- Times are logged into time2 array.
- Here is the sceenshot.

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```
-------------------------Algorithm 2 - Check the floor with high number of requests -------------
At floor 0 There are 0 requests
At floor 1 There are 0 requests
At floor 2 There are 3 requests
At floor 3 There are 1 requests
At floor 4 There are 0 requests
At floor 5 There are 2 requests
At floor 6 There are 1 requests
At floor 7 There are 0 requests
At floor 8 There are 2 requests
At floor 9 There are 1 requests

Floor which has more number of people is : 2
Index values are : 0  and the requested floor is: 9
Index values are : 1  and the requested floor is: 6
Index values are : 7  and the requested floor is: 9
Floor : 9 is served with time : 21 Seconds
Floor : 6 is served with time : 33 Seconds
Floor : 9 is served with time : 54 Seconds
********************
Time to travel from floor No:2 to floor:9 is = 75 Seconds
Time to travel from floor No:2 to floor:6 is = 87 Seconds
Time to travel from floor No:6 to floor:9 is = 96 Seconds
Time to travel from floor No:8 to floor:2 is = 114 Seconds
Time to travel from floor No:8 to floor:10 is = 120 Seconds
Time to travel from floor No:9 to floor:6 is = 129 Seconds
Time to travel from floor No:2 to floor:9 is = 150 Seconds
Time to travel from floor No:5 to floor:7 is = 156 Seconds
```

- **Total time taken to serve the entire requests by using Algorithm 2 is : 156**

Algorithm 3:

- This is the extension of the algorithm 2.
- Here, it sorts the destinations based on the distance to travel and serves them
- Rest of the algorithm is similar where the requests that are already served will be skipped and others will be served.
- The previous array values with index values are stored into the other array to make changes.
- Time is calculated and logged into time3 array
- Here is the screenshot of output.

```
-------------------------Algorithm 3 - Find the smallest distance with respect to travel by sorting and  -------------
value for i =  0is :10and the index values before sorting are: 2
value for i =  1is :3and the index values before sorting are: 5
value for i =  2is :1and the index values before sorting are: 6
---------------Sorting the elements-------------------------
Sorted value for i =  0is :1
Sorted value for i =  1is :3
Sorted value for i =  2is :10
Floor : 10 is served with time : 24 Seconds
Floor : 3 is served with time : 42 Seconds
Floor : 1 is served with time : 45 Seconds
********************
Time to travel from floor No:9 to floor:10 is = 48 Seconds
Time to travel from floor No:2 to floor:5 is = 57 Seconds
Time to travel from floor No:9 to floor:3 is = 75 Seconds
Time to travel from floor No:9 to floor:1 is = 99 Seconds
Time to travel from floor No:3 to floor:6 is = 108 Seconds
Time to travel from floor No:4 to floor:10 is = 126 Seconds
Time to travel from floor No:1 to floor:8 is = 147 Seconds
```

- **Total time taken to serve the entire requests by using Algorithm 3 is : 147Seconds**