Alexis Montes 5/09/19

Assignment 2 writeup

Experiments Scheduling

(a). The optimal solution would be to iterate through the steps and when faced with multiple students who can perform the same task you would use a form of dynamic programming and recursion to examine how many times the code would “switch” to get the most optimal schedule.

(b). The greedy algorithm i implemented was based on finding the list of people that can do the current job we are trying to fill and when there is multiple candidates then we pick the student that has the highest potential as in can perform the most jobs after the current job as a rough way of finding the students value in terms of future scheduling.

(c) in Code

(d). The run time of the algorithm used was BIg-O(n) since at most during the algorithm only simple lookups using loops were used, without any nesting when trying to determine values.

(e)

Public Public Transit

(a) Alg:

```
find the shortestPath Arr:
  * Using a modified version of shortest time that was part of originally code
    set arrays of size of columns and fill in values according to values
    of the passed 2d array
      -One arr for the array to hold the final path
      - one to hold the initial train times
      -- one to hold a record of what stations have been visited
    return path of shortest length
go through array from biggest to smallest location value
  find the location of Source location in shortestPathLocation
check to see if while the train arival time is within our time constraint
  add the train time to arrival time
  update values
update values for the next possible values for next iteration
```

(b) the time complexity of this algorithm was Big-O(n^2) since the most complex operation that is potentially used was a multiple for loops to compare the values of the train arrival time and find the best path that can be taken

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C. the algorithm is based on the idea of Dijkstra’s shortest path algorithm

(d). I used the shortest time method to be compare times and maintain a form of memorization tweaking the variables to work for other purposes.

(e) The complexity is Big-O(n^2) since the core of the algorithm uses multiple layers of loops to end up with the final result.’

(f) In Code