BSE1B

CP Lab Assignment 1

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Problem#1

- o **Finding the Shortest Path**

Solution

- **Input starting location on Map.**
- **Input destination point on the Map.**
- **Look for every nearby common reference points between starting location and destination**
- **If found any then skip this step else display "No route found"**
- **Calculate the distance between those points w.r.t the starting location**
- **Find the shortest point**
- **If different points have the same shortest distance then select the most efficient one with least turns and traffic else skip this step**
- **Display the path and distance**

Problem 2

- o **Sorting a List of Numbers**

Solution

In my opinion the best method would be the insertion sort(however everyones opinion matters and so does yours)

- **Begin with the second element, assuming the first element is already sorted.**
- **Compare this element with the elements to its left, shifting larger elements to the right.**

- **Insert the current element into the correct position within the sorted section by continuously comparing and shifting elements until it's in its appropriate place.**
- **Repeat these steps for each element in the list until the entire list is sorted.**

Problem 3

   o **Calculating Fibonacci Numbers**

Solution

- **You start by initializing variables to represent the first two numbers in the sequence. These numbers are typically 0 and 1.**

- **You'll need a loop that iterates from the 3rd number up to the nth number. In each iteration, you calculate the next Fibonacci number by summing the previous two numbers.**

- **During the iteration, update the variables representing the first and second numbers to progress through the sequence. As you calculate the subsequent number, these values will shift to cover the next pair of numbers.**

- **The loop continues until you reach the desired nth number in the sequence.**

- **Once the loop ends (reaches the nth number), you'll return the value of the nth Fibonacci number.**

Problem 4

- o **Inventory Management**

<u>**Solution**</u>

- **Initialize an inventory where the products will be keys stored alphabetically. The product will be on left side followed by their quantities**
- **In order to add product check for the key phrases if it exists already then skip this else add the new entity**
- **Then add quantity to the product. If it already exists ask if it needs to be updated**
- **To remove an item from the list :Check If it exists , locate the item and then remove**
- **To update the quantity of an existing item locate them and then set its quantity to new**
- **To generate inventory report print all the data by simply iterating through them**

<u>**Quote of The Day**</u>**: "What luck for rulers that men do not think"-Adolf Hitler**