Algorithms

Task 1: Finding shortest distance.

Step 1: Start

Step 2: Take current location from user and store it in a variable**.**

Step 3: Take destination point from user and store it in another variable.

Step 4: Check the connecting routes from given map of locations and store the distance of each route in different variables in kms.

Step 5: Start comparing the distance of each route to get the shortest distance.

Step 6: Display the shortest distance.

Step 7: End

Task 2: Sorting list of integers.

Step 1: Start

Step 2: Take the list of integers from user as input in an array in long integer data type till “n” and take “n“ as ending point.

Step 3: Take two variables first will store the value of first element of array and second will store the value of second element.

Step 4: In the nested loop the outer loop will begin from the first element in the array and inner loop will begin from second element to check the condition whether the first element is greater than the second if the conditions return TRUE it will swap the value with the first element of the array.

Step 5: When the loop continues it will further check for the next variable in the outer loop and in the inner loop if conditions return true it will swap the value again until the elements are sorted.

Step 6: After the loop terminates it will display the sorted array using another for loop .

Step 7: End.

Task 3: Finding nth term in Fibonacci sequence.

Step 1: Start

Step 2: Take first and second value of series in variable f1 and f2 and initialize a variable next_term=0 and declare a variable for loop as i.

Step 3: get the nth term from user in variable n.

Step 4: Print the values of f1 and f2**.**

Step 5: from the third value onwards start the loop from i=3 and “i” will be less or equal to ”n”

Step 6: Assign the value of f2 to f1 and the value of next_term in f2. Then add f2 and f1 and assign the value to next_term. Print the next_term and increment the value of i.

Step 7: at last display the message that the last term of this sequence is your required nth term.

Step 8: End

Task 4: Inventory Management.

Step 1: Start

Step 2: Define a class named inventory and declare its data members for creating a data base. Data members will include char name ,int item_no , float price and int quantity for creating a inventory management system .

Step 3: we will declare member functions.

1. to add an item: add ()

2. to remove an item from the list remove ()

3. to update an items description update ()

4. to display all the items in inventory report ()

Step 4: then in the main function we will display a message to choose between administration or quit. if user presses 1 it will go the administration menu otherwise quit

Step 5: then in the administration menu user will choose between all of the 4 options.

If he presses 1: add () will be called to add item no and name and other details of new items.

If he presses 2: remove () will be called to delete any item.

If he presses 3 : update () will be called to update the details of any item .

If the presses 4 report () will be called to show list and description of items.

Otherwise, it will quit.

Step 6: End.