Bahria University
Discovering Knowledge

ASSIGNMENT # 1

ALGORITHMS

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BSE - 1A

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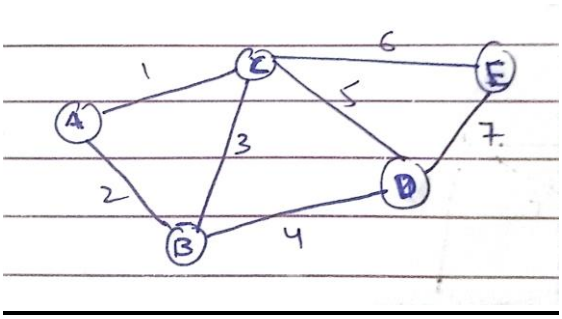
ASSIGNMENT#1- Problem Solving (CLO-1)

QUESTION # 1:

Finding the Shortest Path.

ANSWER:



Step 1: START

Step 2: Pick one Location as a starting point like we take “A”.

Step 3: Initialize A time with ZERO A=0 while other with infinity.

Step 4: Write the distance between each pair of locations.

Step 5: Add A time with the distance of those points which have direct path with A.

Step 6: After ADDITION, the output will be the time of the end point like A have “0” time when it will add with the distance between A to C, the output will be “1”, so this will become the time of point “c”, same with other point.

Step 7: Now, we should travel with the help of visited location. Now, the process will apply again that the time of already visited location will add with the distance of other remaining location.

Step 8: After These all calculations, we will apply condition statement and let the in shortest distance as output. Such a given map; the shortest path is distance A to C with "1" distance.

Step 9: END

QUESTION # 2:

Sorting a List of Numbers.

ANSWER:

STEP 1: Start

STEP 2: Read a list of numbers.

STEP 3: Choose one number from the list e.g., last number.

STEP 4: Divide list of numbers into two parts.

(a) One will have numbers less than the selected number.
(b) Other will have numbers greater than the selected number.

STEP 5: Same process applied on this sub-set. (Choose one number and divide it parts)

STEP 6: At the end combine all values, in arrange from, smaller value on left side, greater on right side.

STEP 7: Print the output.

STEP 8: END

QUESTION # 3:

Calculating Fibonacci Numbers.

STEP 1: START

STEP 2: Read the Final value “N”.

STEP 3: Take Three Variables “Num_1” & “Num_2” & “result”.

STEP 4: Applying a while loop, condition (result <= N).

STEP 5: If the condition is True, the body will execute. First it will print the value result variable.

STEP 6: Exchange the value, num_2 value will send to num_1 and result value will send to num_2.

STEP 7: Then the Formula will use result = num_1 + num_2.

STEP 8: When the condition becomes false, it will print the output order of Fibonacci Numbers.

STEP 9: END

QUESTION # 4:

Inventory Management.

ANSWER:

Step #1: START

step #2: Creates a for array inventory.

Step #3: Asks User what he/she wants to do in inventory...

Step #4: If he/ she wants to add an item, then if items already exist then update the quantity otherwise add new one.

step #5: If he /she wants to remove item then check the exists and remove it otherwise show error message "no item exists".

Step #6: If he/she Check the wants to update the quantity exists and update the quantity of that item otherwise display message "not existing item".

Step #7: If he/she wants to generate reports of items lists then print the full report of item list, item quantity otherwise displays an error message.

Step # 8: END