Bahria University, Islamabad

Department of Software Engineering

Computer Programming (Fall-2023)

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Lab Journal: 1

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Task No:	Task Wise Marks		Documentation Marks		Total Marks (20)
	Assigned	Obtained	Assigned	Obtained	
1	3		5		
2	3				
3	3				
4	3				
5	3				

Comments:

Signature

Lab No: 1 - Problem Solving (CLO-2)

Question 1: Finding the Shortest Path:

SOLUTION:

ALGORITHM: -

Step 1: START

Step 2: Read/input List of locations and their connecting path with distance of each path. (INPUT)

Step 3: Now set the starting location and ending location. (INPUT)

Step 4: Now determine the paths that connect the two locations. (PROCESSSING)

Step 5: Now according to the data of distances of each path select the shortest distance path. (PROCESSSING)

Step 6: Display the shortest path to reach the desired location with the total distance. (OUTPUT)

Step 7: END

Question 2: Sorting a List of Numbers:

SOLUTION:

ALGORITHM: -

Step 1: START

Step2: Read/Input the series of numbers. (INPUT)

Step 3: Assign the series of numbers to Arrays. (PROCESSING)

Step 4: Now compare the elements from left to right. If the first element is greater than the second elements and so on, the values of elements in arrays will swap. (PROCESSING)

Step 5: The swapping will continue in loop until the series of numbers isn't arranged in ascending order. (PROCESSING)

Step 6: Print the ascending series of numbers. (OUTPUT)

Step 7: END

Question 3: Calculating Fibonacci Numbers

Solution:

ALGORITHM: -

Step 1: START

Step 2: Take value of 'n' for which we want to find Fibonacci number. (INPUT)

Step 3: If 'n' is 0 or 1 return 'n' as output. (PROCESSING)

Step 4: Otherwise declare 2 variables a & b to value 0 and 1 respectively. (PROCESSING)

Step 5: Declare another variable C. (PROCESSING)

Step 6: Loop the following and -1 times:

Calculate a + b and storing c
Update a with the value of b (PROCESSING)
Update b with the value of c

Step 7: Display the value of c is our Fibonacci number after loop. (OUTPUT)

Step 8: END

Question 4: Inventory Management

Solution:

ALGORITHM: -

Step 1: START

Step 2: Create an empty inventory to store items.

Step 3: Adding:

Check if the given item with same ID exists in inventory.

If it exists increase its quantity, if not then add a new item entry with details and quantity.

Step 4: Removing:

Check if the given item with the same ID exists.

If exists remove the given amount of item, If not then indicate that item not found.

Step 6: Reporting:

Go to inventory again and list all items with their details like ID, name, description, price and quantity.

Step 7: END