

CS502-Fundamentals of Algorithms
Assignment No.2 Solution
Semester: SPRING 2023

Total marks = 20
Deadline
12th of July 2023

Please Carefully Read the Following instructions before attempting the Assignment Solution

NOTE

Don't copy-paste the same answer.

Make sure you can make some changes to your solution file before submitting copy paste solution will be marked zero.

If you found any mistake then correct yourself and inform me.
Before submitting an assignment/GDB check your assignment requirement file.

For any query, feel free to Contact at Whatsapp:
+923074960034

Provide by M.JUNAID QAZI

Assignment Statement:

Following table is representing some educational institutes of Islamabad in column 1 and supposed vertices of every institute in column 2.

Institute Name	Vertex
Arid Agriculture University	A
Baharia University	B
Comsats University	C
Fast National University	F
International Islamic University	I
NUST (National University of Science and Technology	N
Shaheed Zulfikar Ali Bhutto Institute of Science and Technology	S
Virtual University of Pakistan	V

Table 1: Islamabad Institutes

M.junaid Qazi
WHATSAPP +923074960034

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+923074960034

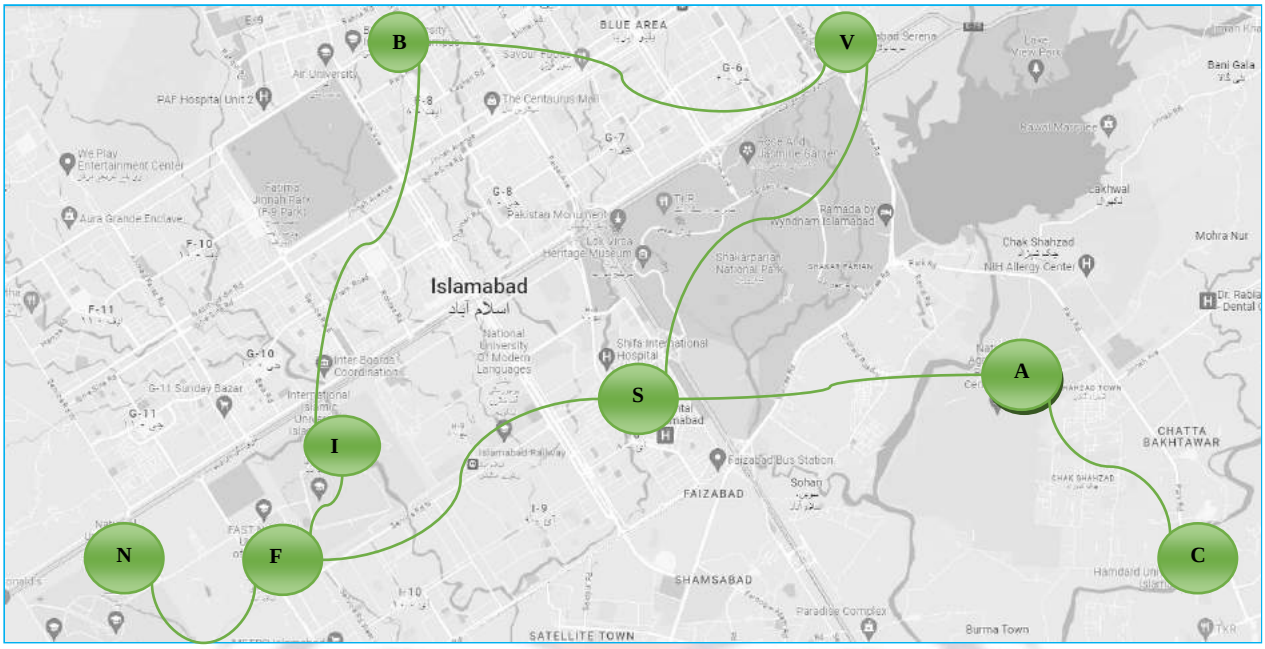
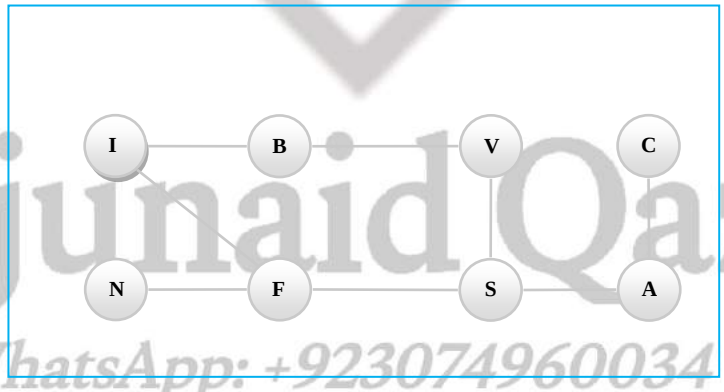


Figure 1: Map Representation of Institutes

Your Task 1:

You are required to consider the graph given in figure 2, and perform Depth First Search by implementing the 'bag' using a Stack. You need to perform each trace of the DFS on the given graph and show the final DFS tree only. You will consider the **vertex V** (Virtual university of Pakistan) as starting vertex.

No need to mention each trace in the solution, only final tree is required as given at **Page 124** of course handouts.

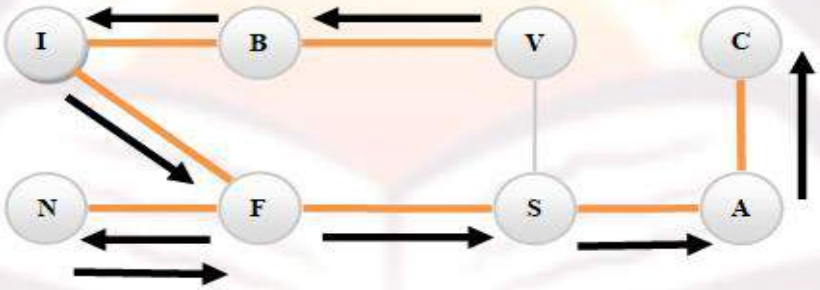


M.junaid Qazi
WhatsApp: +923074960034

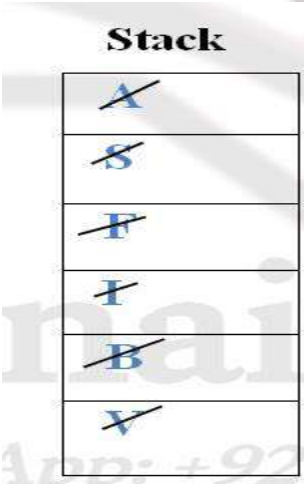
Figure 2: Graph Representation

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Solution:



Output: V, B, I, F, N, S, A, C



naid Qazi
App: +923074960034

CONTACT ON WHATSAPP
+923074960034

Your Task 2:

After creating the final DFS tree, you need to draw Adjacency List of that tree also.

Solution:

Vertex	Adjacent list
V	B, S
B	I, V
I	B, F
F	I, N, S
N	F
S	A, F, V
A	C, S
C	A

Every assignment/GDB is change due to unique Student ID so Don't Copy

That is truly perfect step by step idea solution get help easily.

By The Way if there is any Mistake you found, correct it yourself First Then Submit.

Thanks

M.junaid Qazi
WhatsApp: +923074960034

M.juniad Qazi

WHATSAPP +923074960034

CONTACT ON WHATSAPP
+923074960034