whene to use the DIJKSTRA ALGORS. With Proof

Linkezin amanosofficialms

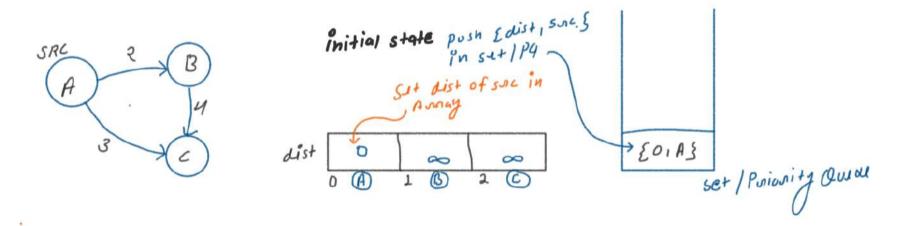
1. Dijkstra Algorithm

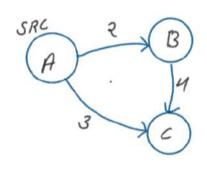
💋 Dijkstra Algorithm: Source, Destination, Minimum

Note 1: It is used to find all shortest path from source to all nodes in a negative and positive weighted, directed or undirected graph.

Note 2: It is not used to when a graph have the negative cycle because of occurring the infinite loop

Example 1: positive weighted directed graph

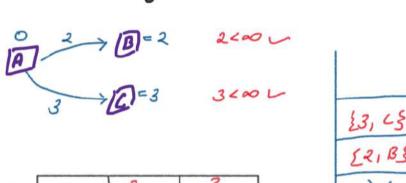


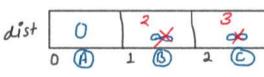


Itanion1

STEP 2 Get snowhist dist wood from sut/p9 and popit

STEP2 UPdate dist Arnay and Greate Mu Entry in SIt amn





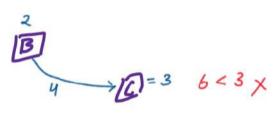


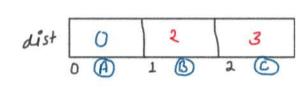
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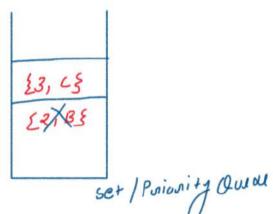
I+wation 2

STEP1 Get shortest dist wood from sut/p9 and popit

STEP2 update dist Annay and Greate Mew Entry in sut when





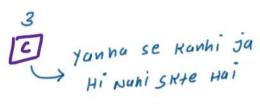


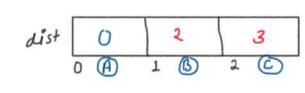
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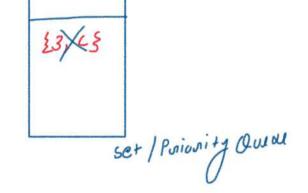
Itanion3

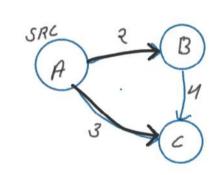
STEP2 Get showhist dist wood from sut/p9 and popit

STEP2 update dist Annay and Greate Mew Entry in SIT WMM





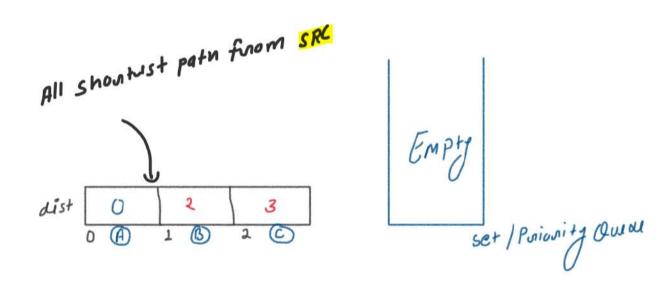




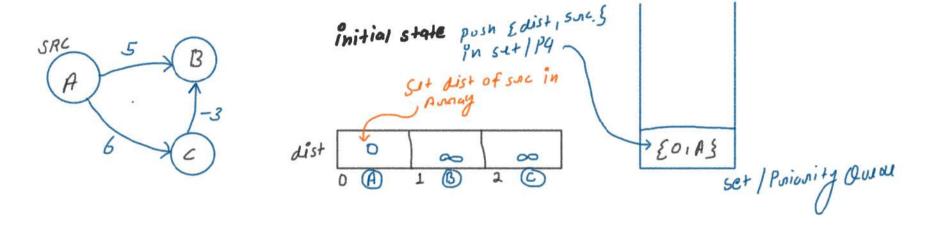
I+mation 4

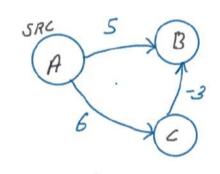
STEP? Get showhist dist wood from sut/p9 and popit

Ab SIt/P4 EMPTY HO CHUHA Hai, so stop the Coops



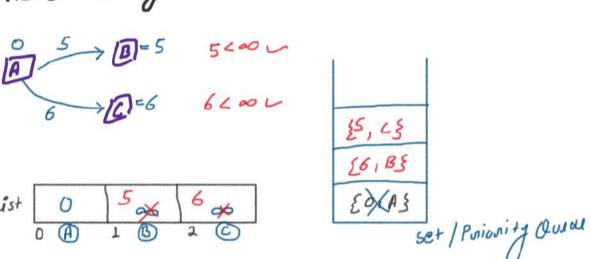
Example 2: negative weighted directed graph





STEP 1 Get snowhist dist wod from sut/p9 and pop it

STEP2 UPdate dist Annay and create Mew Entry in sit amin



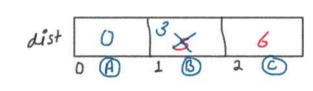
SRC 5
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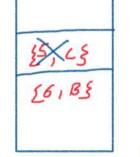
1+mation ?

STEP1 Get snowhist dist node from sut/p9 and popit

STEP2 UPdate dist Annay and create Mew Entry in sut amn







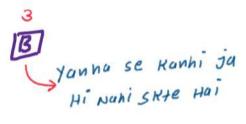
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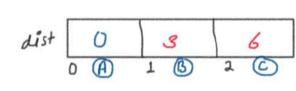
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Iteration?

STEP 1 Get snowhist dist nod from sut/p9 and pop it

STEP2 UPdate dist Armay and Greate New Entry in SIt WMM





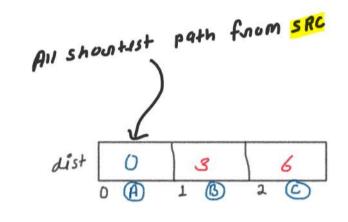


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Itwation 4

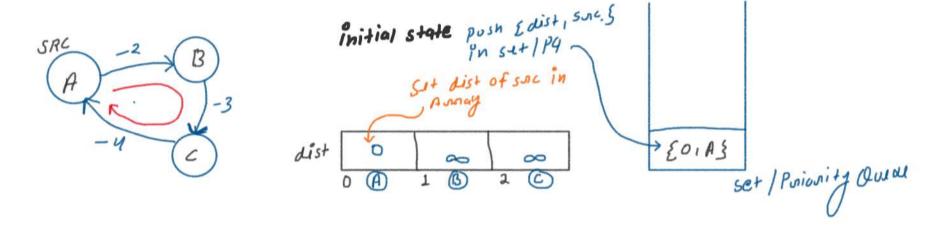
STEP 2 Get shouldst dist wood from sut/p9 and pop it

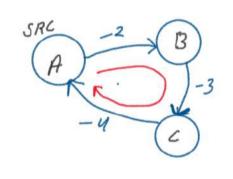
Ab SIt/P4 EMPTY HO CHUNA Hai, so Stop the Coop



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Example 3: negative cycle in directed graph

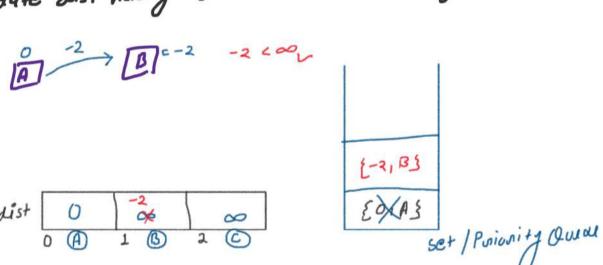


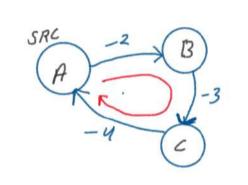


Itanation !

STEP1 Get snowhist dist mod from sut/p9 and pop it EO, AS

STEP2 UPdate dist Array and Greate New Entry in SIT WHIN



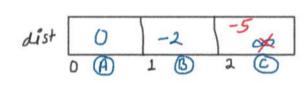


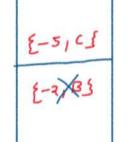
I+wa+ion2

STEP1 Get snowhist dist wood from sut/p9 and popit

STEP2 UPdate dist Ranay and Greate Mew Entry in SIt amn







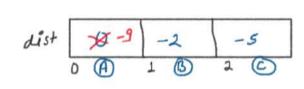
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Get snowhist dist mode from sut/p9 and popit

STEP2 UPdate dist Rangy and Greate Mew Entry in SIt amin



Itwation3

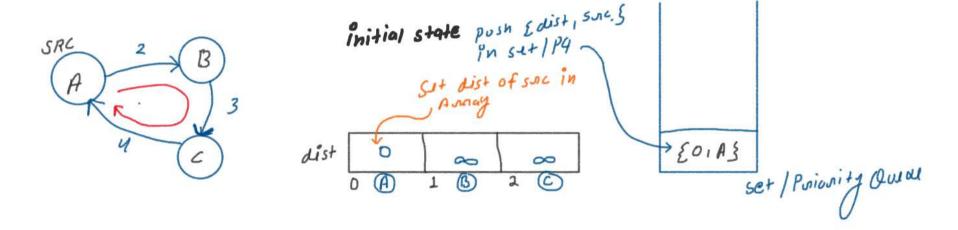


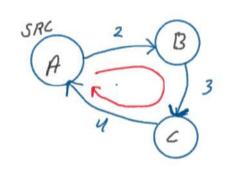


Infinite Loop me

dist 10-9-2-5 0 A 1 B 2 C Set / Purionity Quell (Jab (-w) + (-w) TO [Jab (-w) + (-w) To Hamish smallust distant mital Ranga as comane to jo dist Array me panie se Rakha Ituan Hai To Iss Rhakan Sit/ P4 Empty Nani Ho paying

Example 4: positive cycle in directed graph



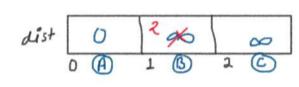


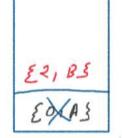
Itan ation I

STEP1 Get snowhist dist now from sut/p9 and popit

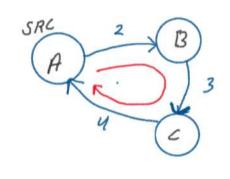
STEP2 Update dist Annay and Greate New Entry in SIT WMM







set / Proionity Qual

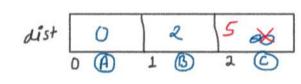


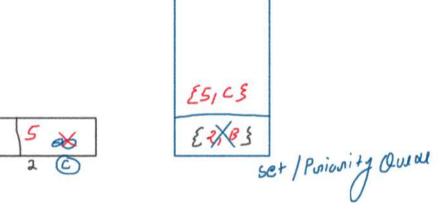
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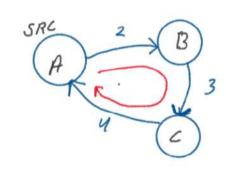
Get snowhist dist node from sut/p9 and popit 22185

STEP2 UPdate dist RANGY and GREATENLE Entry in SIT WMM







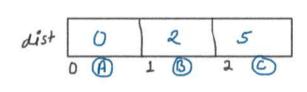


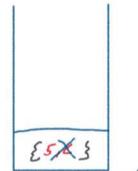
Ituration3

STEP1 Get snowhist dist woll from sut/p9 and popit

STEP2 update dist RANGY and GREATE NEW ENTRY in SIT WAY







Set / Projectly Quide

SRC 2 B

1+ma+ion4

STEP1 Get snortust dist mod from sut/p9 and popit

NOW SIT/P9 is EMPTY so stop the coop.

All showthat path from sone

