

class Graph:

def __init__(self, vertices):

self.v = vertices

self.graph = []

def add_edge(self, s, d, w):

self.graph.append([s, d, w])

def print_solution(self, dist):

print("distance from source
to vertex")

for i in range(self.v):

print("{}\t\t{}".format
(i, dist[i]))

def bellman_ford(self, src):

dist = [float("inf")] * self.v

dist[src] = 0

for _ in range(self.v - 1):

for s, d, w in self.graph:

if dist[s] != float("inf") and
dist[s] + w < dist[d]:

dist[d] = dist[s] + w

for s, d, w in self.graph:

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if $\text{dist}[s] = \text{float}("inf")$ and $\text{dist}[s] + w < \text{dist}[d]$:

print ("negative weight cycle")

return

self.print_solution(dist)

g = graph(5)

g.add_edge(0, 1, 5)

g.add_edge(0, 2, 4)

g.add_edge(1, 3, 3)

g.add_edge(2, 1, 6)

g.add_edge(3, 2, 2)

g.bellman_ford(0)

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