EXP NO: 4

A \* SEARCH ALGORITHM

AIM:

To implement an At search algorithm using python.

top a steam algorithm (apt stant

PROGRAM:

from collections import deque

class Graph:

def-init-lest, adjac-lis):

self.adjac\_lis = adjac\_lis

def get-neighbors (self, v):

return self-adjac-lis [v]

def haself, n):

H = {

'A':1,

1B1:1

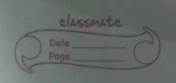
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retwon HIn]

def a star-algorithm (self, start, stop):

open-lot = set ([start])



closed-lst=set([]) - 101 - 101 0 poo = { } 100 100 0 10 100 00 19 poo [start] 60 by par = { } par [start] = start while len Copen-1st) >0: A = None for v in open 1st: Pf n== None or poolv] + self. hcv) = pooln] + self. hcn): delneviols de m 49 Pf n== None : print ('Path does not exist!') return None suggested and Pf n== stop: (a) hon dat = hosal) reconst path = E Jah ang shing while par [n] 1 = n: reconst-path append (n) In = parient on commerce reconst-path appendin) The part in ] I contain the reconst\_path. append (start) reconst\_path.reverse() print ('Path found: & 3'. format (seconst-path)) return reconst path

for (m, weight) in self. get - neighbors (n): If m not in open\_1st and m not in closed\_1st. open\_1st. add cm) par EmJ=n \$2-100 poo [m] = poo[n] + weight else: 30- ( see your and of office) if poo[m] > poo[n] + weight: poo [m] = poo[n] + weight par Em3 = n If m in closed lot: closed\_tst, remove (m) open\_1st, add (m) open-1st. remove (n) closed-1st.add(n) print ( Path does not exist') return None : 1 - 1 18 - 18 MA adjac-lis = { 'A': [('B', 1), ('C', 3), ('D', 7)], 'B': [('D', 5)], .... 'C': [('D', 12)] remore to the appoint Petroner

graph 1 = Graph (adjac 18s)
graph 1.a-star algorithm ('A', 'D')

Path found: ['A	
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	nim:
AX Algorithm problem	To implement minus
	using Phichem.
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RESULT :	, 10,0,01
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