

INDEX

Name: Cheuch p Roshen Std. Sec. Roll No.:..... Sub :.... Page Title Date Sign / S.No. No. Remarks maries 8 - Queens Problem. 9/8/24 ١. 16/8/24 DES 2. DFS - water j'ug 23/8/24 Lo 3. problem A * Algorithm Search 30/8/24 6/9/24 Implementation & Decision tree coursification technique 27/9/24 Puplementation JANN 10 for using python oregression 4/10/24 Implementation of chisting to algorithm 18/10/24 Menimax Algorithm g. 25/10/24 Putraculon to prolog 9, Sto 8/11/24 Photog Family tree (0) 0.

8- June Problem Dell: - 9/8 En. 1 dine: -1 to write a python program for 8-queens problem in jupitu Notebook Program: def colve - & guens (in)? def is-safe board, sous, col): for in range (row). y board Til = = col or 1 180 mar - 100 = = 1 - 101 Ausod . board TrJ +i == col + row! resturn gain verturn True of place - queens (no board 1 vow); y NOW = EN: outurn Eboard [:7] Solutions = CJ for and the stange (11): is it say board, you, wil: board Trows = col. Solution contend [place + vuens (n, board from + 1)] return Solitum board = T-1]" n voturn plan-queen (n, board, 6) N=8 Solution = Solve - 8-queins (n) for solution in solutions!

print (solutions) Output: [T. [1,0,0,0,0,0], [0,0,0,0,0,0,0,0],]) [0,0,0,1,0,0,0],[0,0,0,0,0,0,0] [0,1,0,0,0,0] | [0,0,1,0,0,0,0] [0,0,0,0,0,0],[0,0],[0,0,0,0] refrest traced in a consider a dig . 20 Crython of the west of a and the special control of the second Constant to and the state of the · In the contract of the and the second of the second o Cat town of the said 1. Condition of a i di i di in di in di indiana din and the second of the second Tode was run successfully.

Date: 16/8 DES En. 2 dinito write a python code for DFS iwang the jupitu notebook. Rogram ! from collection impost default dit down graph: def -init - (sey): Self. graph = defaultaiet (list) def add Edge (seef, u, v): Sey. graph TuJ. append (v). def 145 util (sey 1 x, visited): Visited · add LV) pant (viend=11) for neighborn in sey graph [4]. if neighborn not in valid: Self. DES Wil (neighborn, visited) oly DFS (sey, V): (N'sited = setc) Sey. DESUMI (VIVIA) y- name == " - main_". (g = g raphe) g. add Edge (0,1) gradatige (0,2) gradd Edge (112) g. add Edge (2,0)

g. add Edge (2,3) g. add Edge (313) point (" Following in Depth First Traversal (Starting from vertex 2) 4) g. DFS(2) Le pril and and The state of the s · (W, w;) * * * * * / * / * · (A) voodde · Cailalial · C. Following is Depth First Traversal (starting from verter 2) (1 1 money V) - track Must be the my more of the my stated of the model porta 1+ 2 12/12 100 100 1 100 1 13 18 121 to to the a : (V,): - : - + : ; (1 mistry + 1 HM : 1 .) Chr. S. at the Thus the program for depth first throwersal was suconfully enuned

Date: 80 03/8 DFS / water jugsoblem Ex. 3 din ; to write a python code for the water gry problem using the Jupita notebook. Brognam: de als-water- jug (capacity-jug), capacity-jugs, derived - quantity). Stack = [co, o)] Visited = set() when stack! Stale = Stack. pop() jug 1, jug 2 = state il (jug 1 gug 2), in visited: continue Visited add ((Jug1, jug21) is jugl == derived_quartity or jug 2 == disoud_quartity: section ([] " Fill jug [i+1]" y 1==0 else j" four From jug 8ix 17 to Jug 83+34) forien range (2/) must_Stain = CJ ij jug 1 < capaity-jug 1: nent / states append ((capacity - jug 1, jug 2)) if jug 2 < capacity - jug 2: nent -states. append ((jug 1, capacity-jug2)) ig j'ug/ 70: nent-states append (10, juge)) of glygato: nend-states append ((jug 1,0))

from neut state in new Hoter: Stack appent (nent_state) Yeturn a No solution Found a Solution: (412) Cleput I have been all to the the (12/22/42/21) 26. ·) . · · · Latine by the property of the state of ing ... a - of the property of the restry was some of the state of the first The state of the s enter to the enter my the men and a second Jun the program for water gug protein enny python was successfully enutal.

Date: 30/8 A* algorithm En. H Am: to write a python code for. It wan Algorithm why Jupiter Nolitook. biodian; Import heaper def heuristic (a,b): elfum (lbs (a[0] - b[0]) + abs (a[i] - b[i]) def a-star reasen (gred, start, goar). dérections = [(0,01), (1,0), (0,-1), (-1,0)] open -set= [] heapy heappush (oppen-set / (0, Start)) g-score = Esteut:03 f-Score = Estant : neuristic (Start, goal)} Came - (vom = 33 while open_set: -, current = heapy heap pop (spen-set) y current = = = goal; the special state partn _ [] while wrrent in come-from! path append (wrront) current = came- from Pourrent J path append (start) path · reveney veturn path

for derection in observations: negabour = (current [0]+ derection [0], energy + derection (it) y ox= neighbour [0] < cen (grid) and ox=neighbor titken (grd COJ) and grid [neighbour to][rug [I]] ==0: tentative-g-score = g-score [current]+1 if tentative -g-score & g-score get mighton, pour (' my)) -. came - from (negroboun) = current 9-score Trugnbour = tentature 9-score f-score [nighbor]-tentativa -g-sore heurtster (negrosor, goal) is negroom not in them [I] for item in open - set]: heapy heappurn topen-set, I sweetinghour nighbour)) suturn None gnid = [[0,1,0,0,0] L0,11,0,110] [0,0,0,1,0] Co,1,1,1,0] 20,0,0,0,07

Stent = (0,0) goal - 4(4) part = 9-stan - reach (gra, stand, goal) ig parts.

print (u parts jourd; parts) else: print (n No porth Joung a) Outputt The path is -- 7 (8,0) -> C7,0) -> (6,0) -> (5,0) -> (411) -> (3,2) -> (2,1) -> (1,0) -> (0,0) of marking the property of the the same has been the property of the same Ribult: Jun the program for A x man Algorithm was successfully extend.

Date: - 16/9 En.5 Linis - to write a code for implementation of clanefecatur technique wing decision tree jupita nowbook. Carl Lower 184 Land Land program 1mipost gardas as policies in the second from skuam . Free import Deutsion tree classifice from skeenn. moon - Selection jupo 17 train. test - NPW+. Jone skeran. medrer import accuracy none, Clampalin = report | confusion - mation of = pd. read-cey (11 your dalant. cov!) x = all. drop (1taget 1, axis = 1) Y = af ['touget'] P-frain , X-test , y-train , Y-ten- =drain-test Aprilt (x, y, tent_size = b-2, random-start = q2) uf = Decinon Tree clarrific (contenion = lentropy 1, mat. depth = 15, slandom-stare = 42) cy. pit (xtrain / y frain) y- pred - cef. predut (x-test) print ("Accuracy" 1 accuracy - score (y-test, y-prod) print ("clarrification Report:") point (confriction - teport (y-test, y-ped)) print ("confusion Matricia)

byut (renfinion-warn, x (2-ron 12-bred)) Output! JATA INFO Dassons et length : 625 Dataset Shape: (625,5) Dataset: 01234 0 B 1668 6110/127 - 10 30 100 1010 2 R 1 1 3 Harrison 1 6 mm 31Roll I should be in the second 4R 11 / Struke with him in e to all conserved and so the section of the first and Le way and market market 1 1. Commendation Professional Constant ant a doing to taking to figure 1 and And the second program von suurply enuted.

En-P Davi - 24 Best set of Parameters din: to wice the program for ANN way Staget reporter on Jupiter Hotelook. Grodram :def Function find Best Params (& train, y-train ix y-test): batch-size-list = [5,10,15,20] batish epoch-wit = [5,10,50,000] import pandos as pd Search Results Date = pot Date Frame (Trail Number 1 parameters, 1 Armay D Trail Number =0 for hatch-irre-trail in haten-tre- WA: for epoch strail in epoch-wit: Treal Number +=1 Model = Sequential () model · ada l Dense Lumits = 5, input - aim = X_tr Shape [1], Kernel-intralizer=inormal), activation = (rely)) Model. aad Dense 11, Kernel-Intralizer = Inorma mape . np. mean (100 % (np-abs (y-lost mode · predict (x-unt))/ Yilint)) print (Tréal Number, parametris:1, 1 bater - sin batem - core towal ;- 1 lepochs 1, epochs - tois

geterry	(Seach Duults Data)	
Results	Duta = Function find Y-frain, X-tool	Best forams (x-train)
uput.	114 00.14	grand productions
	ter that train wi	The second second second
	Dayana ti	all . 1 1 20 - 17'6
	, 60 / 1 / 2	i gi ·
	s. · Wir rore	rojd i rakti kantin sa
		67
		. Will the second of the
	1	

"Harray ! , 100 MARK)

Fre program has been successfully encured

En. 7 Kinnans Chestury Ami: to wrete a python for k-means clustering algorithm with jupiler Molebook. Program :impost numpy as np Impost matplotib pyplot as plt John skuarn. Clubbe puport tollcans from sklearn actases impost make - blobs NP. Handom · Seed (42) hum-samples = 300 hum-fealures = 2 num-llusta; - 4 = make-blobs (n- campus = num campu Center = num (Cherton , Cherton - 2td = 1.0, random State = 42 1 kneam = knows (n-chulas = num-clustus , random. State = 42) Kneans. fot (x) Knean - busquet (4) Y- Knuans = pct. figure (figsise = (8,6)) Ple. Scalter (XT:107, XT:10) 11=y-kmean 15 Comap = Iviridis")

Centur = Kymeans. Constay-contas Plt. scatter (centers [:0], concer (:,1), (= | sed 1, s= 200, alpra = 0,75, label = 1 concern') plk. + offer (4k-means Clustering ") plt. xlabel (lifeature 1 m) plt. xlabel (lifeature 211) plt-ligend () plt. Show(c) 13 mm. (tepith print (a cluster control: jun point (" Inextia Lium of Equaned distances of samples to their closet cluster Kneans - Inectia :-) 10 pm Output !-Ser - is not in appoint a such any in 1777 --- 11 Formati that I go at the contract 8 program erruted.

En. 8 Dau- 184 Menenax Algorithm Aim: to write a program for menernax algorithme for in pupitu Motebook. (MI . 11 . 71)) 1 1.1 . 1 Program 1-(11 mg - 11 mg - 1 mg -Import Math des menemax (depth, node_index, is-maximizee, stores, neight) y cepth == height. return scores [node - inder] y 1s-max Incyer: 1 de martine return max Linenemax, Idepth +1, node-indra 2, Palse (scores, height). meneniax algorithm (depth + Inide-inden ») Falic (core (hegut)) des calculate - tree - heagnt (num-leaves): return math. en (math. log à (numleares), Stores = unit (map | mit (imput (u Entirophi Score seperated by spaces : u) spirit (1). tree height = calculate - tree - height 10101 Prue, scores , tree-height) Optimal - Score = minimax (0,0,7 me, tor Auc - height)

print (utto optimal slove is ? optimal slove gu) price of an enter of new in same properties of the same of and it was the anders ore placery ment the tree buy the interior adres persons and an est a Output! Enon the scores separated by spaces 1426 /3 -5 0 the optimal score Persent !> Trus the program was successfully enuted.

En. 9 Introduction to Prolog Davis 25/6

Aim:

To bearn Prolog territrologies and write baric programs

Program :

1. Alomic Terms!

Atomic terms are usually strings made up of lower - and uppercan letters, digits , and the underscore , starting with a lowercase letter

2. Variable.

Variables are strings are of letter, digits and the underswere, starting with a captial letter or an underscore

En. Dog Apple - 420

3. Compound forms

. 8b

protog atom and a number of argument enclosed in paraentheris and seperality by womans

4. Facts

A fact is a predicate followed by a do. .

S. Rues.

A nucle consists of a head and a body to predicates of peroled by commons.

Source Cocle

KBI:

woman (ruia)

woman (yody)

woman (yody)

Output !-

? - woman (mia)

true

?- plays Air (witas (mia).

plays Arrquilar (judy).

False

7. - party

KB2:
happy (golanda)
listen 2 munic (mia)
historis Imuric (yolanda) - happy Lyolandas
Plays Ar Guilar (mia) - Usum 2 munic (mia)
Plays Architeca 11/10
Plays Arranitan (Yolanda) - Lister anunc (yolanda)
Output
? - playstir (uitar (mice)
Anie
? - plays Air Quitan (yolanda)
the (Manual) was
(prof) result your
$(x, x_1) = (x_2, x_3) = (x_1, x_2, x_3) = (x_1, x_3, x_3, x_3, x_3) = (x_1, x_3, x_3, x_3, x_3) = (x_1, x_3, x_3, x_3, x_3, x_3) = (x_1, x_3, x_3, x_3, $
of the Guillan (at is).
Paris I.
Result:
Thus the program for prolog was succuspilly
Y
enuted.

Euro PROLOG Family free Dali - 8/11/24 Him. + to wrete a program for prolog family tree Source lode man (petu). male yohn. male (chrs) and by (1 12 m) Mace (kevin). Jeman Chetty). Jeman Gerry) Jeman (wia) female (helen). parent of (chur, petu) parent G (chrs, betty) pount of melen (peter). pourted (muen, betty) parenty (keum 1 chms) parentsy (kevin, bety). parents (jeny, john) powenty (jeny heren). 1* Ruen /1 »1 (Son. parent *Son grandpaint */ father (x,y):- mace (x), parent of (x,x). Mother (x1x1:- Jernale (x), parentos (x1x).

grandfather (x,y):-male (y), power of(x,z); pountage (2,4) grandmather (x14): - servace (x) parentos (x1Z), parent of (2, y) brother (x, y): - male (y), Falter (x, Z), Jather (y, w) 1Z==w Sister (x1):- Jemale (x) Jathur (x12), Jather (4, w) 12=20 (233 2/ 1 m 2/ 2) ; 1 (111 set 12 1 4. 11 - 11 - 1 - 1 - 1 (yerely with the . (711x1, x1x21) 11 · - forthered Control of the Committee (Alternation (King)