Practical Works. Find a Hamiltonian cycle in an undirected graph. If it exists Flamiltonian Cycle (N, adj-matrix, path, current-position) H=5; path=[0,-1,-1,-1], current-position=1 I Flamittonian Cycle (5, ady-matrix, [0,-1,-1,-1,71], 1) in Imput file current position=N<> 1=5 (False) for vertex in range (1,5): vertex =1 0 1 25 cost inhext (adj-matrix) [0,-1,-1,-1],1,1) = true Path [1]=1 123 Flamiltonianlycle (5, adj-matrx, [0,1,-1,-1,-1],2) 230 2=5 (False) 3 4 2 for vertex in range (1,14) 420 ishext(adj-matrix, [0,1,-1,-1,-1,2,1)=false 031 Adjacemy modrix istext (adj-matrix, [0,1,-1,-1,-1], 2,2)=true path[2]=2 001010 [FlamittonCycle (5, adj-matrix, [0,1,2,-1,74], 3) 110100 3=5 (False) 201011 for vertex in range (1,15) 310101 400110 vertex =A 15 Next (adj-matrix, [0,1,2,-1,-1],3,1)=falm Vertex=2 15 Hext (adj-matrix, [0,1,2,-1,-1], 3,2)= false vertex=3 iskext (adj-matrix, [0,1,2,1,-1]33) # true

```
path[3]=3
     Flamiltonlycle (5, ady-matrix) [9/12/3, 13,4)
         4=5(Fabe)
          for vertex in range (1/5):
          vertex=1
          in Next (adj-matrix 1[0,11,2,3,-1],4,1)=false
          15 Next (adj-matrix 150/123,-17,4,2)=falm
          Vertex = 3
          15 Next (adj-matrix, [0,1, 2,3,-1], 4,3)=false
          vertex = 4
          is Next (adj-matrix, Eo, 1, 2, 3, +1, 14, 4) = true
          path[4] =4
           Flamilton Cycle (5, ady-matrix) [0,1,2,3,4],5)
                     5=5(True)
                     adj-matrix [0][4]=0 (False)
            -> HamiltonGole (5, adj-matra, [011,2,34],5) false false
        path[4]=-1
        > Hamittonlycle (5, adj-matrix, [0,1,2,3,-1],4)=false
vertex =4
is Next (adj-matrix, [0,1,12,-1,-1,], 3,4)=true
path [4] =4
   FlamittonGele (5, adj-matrix, [011,214,-1],4)
            4=5(false)
           for vertex in range (115)
15 Next (adj-matrix, [0,1,12,14,-1],4,1)=false
               15 Hext (adj-matrix 1[91,2,4,-1],4,2)=fabe
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is Next (adj-matrix, E011,2,4,4,3) = true

path E4J=3

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,3],5)

S=5

adj-motrix [0][3] = true

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,3],5) = true

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,1],3) = true

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,1],3) = true

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,1],2) = true

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,1],1) = true

Hamiltonian Gole (5, adj-matrix, E0,1,2,4,1],1) = true