



Q3

Trace BFS, DFS, IDS and UCS ...

BFS

- ▶ Final Closed List [A B C D E]
- ▶ Solution path A B D G
- ▶ Order of node expansion A B C A C D A B D E B C G

DFS

- ▶ Final Closed List [A B C D]
- ▶ Solution path A B C D G
- ▶ Order of node expansion A B A C A B D B C G

IDS

- ▶ “to avoid confusion , only add nodes to the closed list when they are already expanded”
- ▶ $D=0$
 - ▶ Final Closed List []
 - ▶ Solution **Failure**
 - ▶ Order of node expansion A
- ▶ $D=1$
 - ▶ Final Closed List [A]
 - ▶ Solution **Failure**
 - ▶ Order of node expansion A B C

IDS _{cont}

▶ D=2

- ▶ Final Closed List [ABC]
- ▶ Solution **Failure**
- ▶ Order of node expansion A B A C D C A B D E

▶ D=3

- ▶ Final Closed List [ABCD]
- ▶ Solution path A B C D G
- ▶ Order of node expansion A B A C A B D B C G

UCS

- ▶ Final Closed List $[A_0 \ C_2 \ B_5 \ D_5 \ E_5]$
- ▶ Solution path $[A_0 \ C_2 \ D_5 \ G_6]$
- ▶ Order of node expansion $A_0 \ C_2 \ A_4 \ B_5 \ B_5 \ D_5 \ E_5 \ G_6$