|  |  |
| --- | --- |
| Fibonacci :2^n, DP->O(n)  \*Overlapping subporblem \*Subproblem solve ->  Final Problem. (optimal substructure)  \*subporblme er record rakhi. | 0-1Knacksap : Noraml 2^n DP->0(N\*W)  N=number of items. W= Max Capacity  Max benefit : [W][N] **first row,col=0**  MAT SIZE :[W+1][N+1] .need to sort the array. |
| LCS : Noraml n\*2^n DP->  Array size=string size+1  Subsequence =substring  Substring ! = subsequence | MCM : DP->0(N^3)  Mtrix size=Dimension-1 1ST COL=2ND ROW  M[i ,j] i<=k<j || [i , j] Matno =j; |
| BFS : Works on only unweighted .Dijikstra for  Weighted grapgh.Queue operation  Dijkstra : Node Based .(Negative not allows)  Inlcude which are not rechable also.  Table row = reachable node+1;  Src nod+Distance<distance node =Relax  Bellman ford : Edge based .(+,- both weight)  No of Relax= no of edge . Edge Relaxtion  multiple relaxation in  same row POSSIBLE.  If same in two consecutive opertion then stop. | MST : spanning tree and MST can be multiple  Undirected and connected .Vertices same ,--Edge  Crushkals : Edge Based: Forest of trees.  Maximum number of trees is no of nodes.  Safe unsafe sob thike kom weight niye kaj korte hoy.  Prims : Node Based :Weight low priority high  First node weight 0.  Single source : MST For undirected . |
| **DFS :** Topological Sort . Precondition based  Used to show the workflow . **Stack** |  |

1.knaksack :

>weight gulo ke des order sajate hbe

>item ke col,weight ke row;

>weight soman hole bosabo benefit na hole bosabo na

Lcs;

>string ta ke col ar roe te bosate hbe mille kona koni 1 jog kore bosabo ,

>Na mille top left er max ta nibo top=left hole je kno ekta niya kaj korbo ,

MCM:

>matrix er minimum maltiplication ber kori

>matrix er half korlei ans pawa jay

> ans ta right er top e thake .

Bfs

>node base, >flow que>find sortest path>

>prothome kno node select korbo tr por tar adjenct node gula vijit korbo

DFS:

>Edgs base>flow stack> find largest path

topolkogycal>>prothome je kno ekta node select korbo pore oita stack e rakhbo pore oitar adjency node e jabo jodi unvijited thake vijit korbo jotokhn na ses hoy ses ses hole stack thilke pop kore list er right e rakbohole back korbo ,

MST:

Kuskakl

>sob thike kom weight er node dore kaj suru korbo korbo ,jodi edgs er vertex vinno vinno tree er hoy tile mst er adgs hbe ,loop na hole count korbo.

>Je sob edgs cycle toiri kore tara unsafe bki gula safe .

Prime :minmum weight ta ke top e rakbo ,top take output e rakhbo,tr por dqueu korbo ,next jeta nibo tr adjent node select korbo ,jodi edjendce gular man sajano na thake tahole swap kore sajabo:

>weight same thakkle update kora lagbe na

Dijkstra’s algorithm:

>source node er distance =0; Baki gula infinity;

Relaxation kora lage (kono edgs distitaion node e niye gele je node thike asche oi node er distance from the source node + weight of the edgs jodi distanation node er distance thike kom hoy taile update hbe >

Belman fords;(edgs base)

> source node er distance =0; Baki gula infinity;

>sob gulo edgs prothome list korbo pore oi list dhore dhore kaj korbo .

>jeknono ekta edgs dhore relax korbo jodi posible hoy update korbo nai le korbo na .

>joto gula node thakbe toto bar relax kora lagbe .

Fload warksal:

>prothome 2 ta matrix akbo adjency matrix and path matrix

>self node=0; baki gula jodi ek node thike onno node rich kora jay taile edgs er man ta bosabo y

Na gele infinity ;

>path matrix nill hobe jodi richable na hoy:

>pore poti ta via node dhore kaj korte hbe .

Joy matubber