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DEPT: BS CS 3rd

SUBJECT: DESIGN AND
ANALYSIS OF ALGORITHM

DATE: 13/4/2020

Teacher:- SIR ADIL

Q1:- Linked List:-

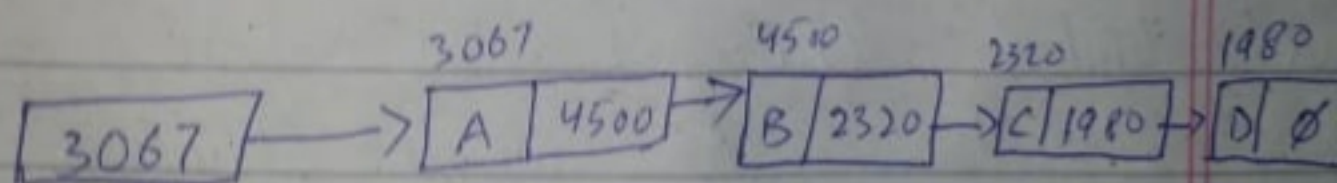
A Linked List is a list whose elements may not occupy continuous memory locations and whose elements are connected by means of links between them.

Example:-

Consider the history

section of web browsers, where it ~~can~~ creates a linked list of web pages visited, so that when you check history or press ok button, the previous nodes data is fetched.

(b) One Way Linked List
Execution:-



① $P \leftarrow \text{getnode}(\quad)$

② $\text{Head} \leftarrow P$

③ $\text{info}(P) \leftarrow \text{data}$

3067 \leftarrow A

4500 \leftarrow B

2320 \leftarrow C

1980 \leftarrow D

(4) Link (P) $\leftarrow \emptyset$
(3067)(4500)(2320)(1980)

(5) q \leftarrow P (3067)(4500)(2320)(1980)

(6) Y, Y, Y, Y, N

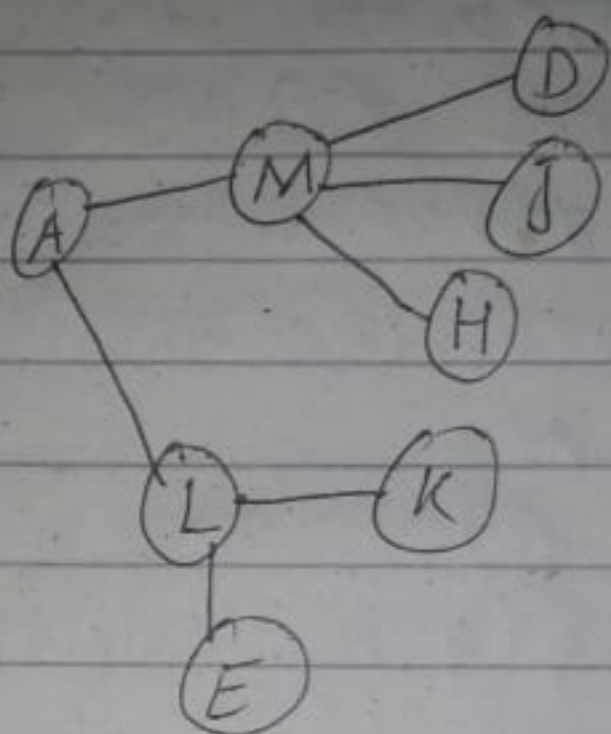
(7) P \leftarrow getnode(4500)(2320)(1980)

(8) Link (q) \leftarrow P (4500)(2320)(1980)

(9) go to 3

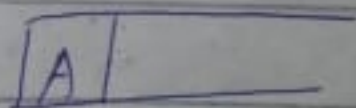
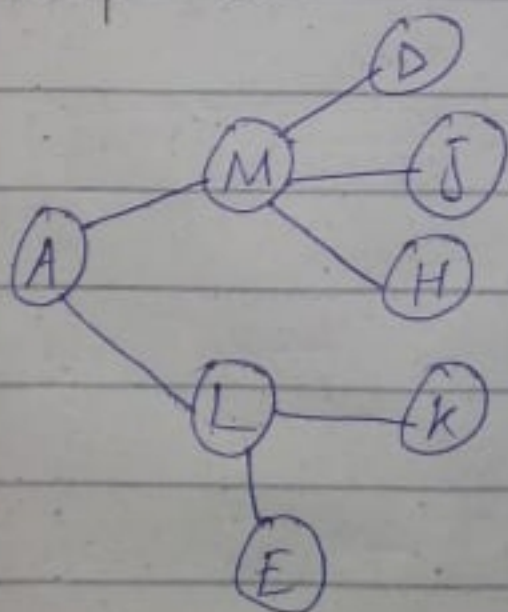
(10) Exit

Q2 Depth First Technique:-



Solution:-

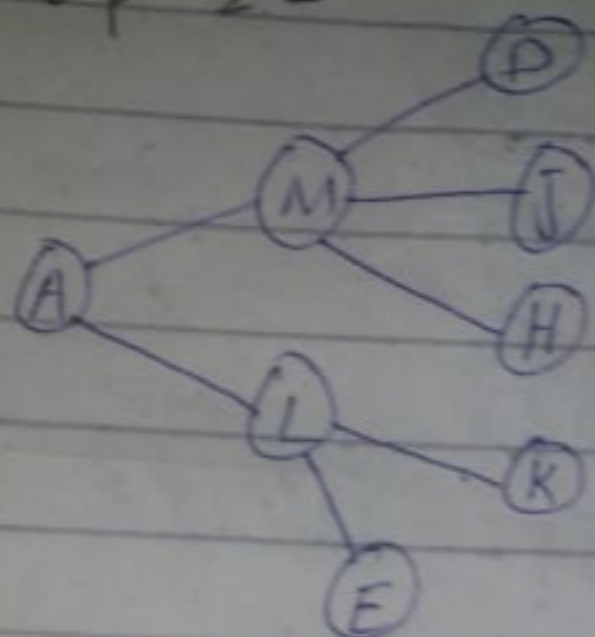
Step 1:-



Output sequence:

A,

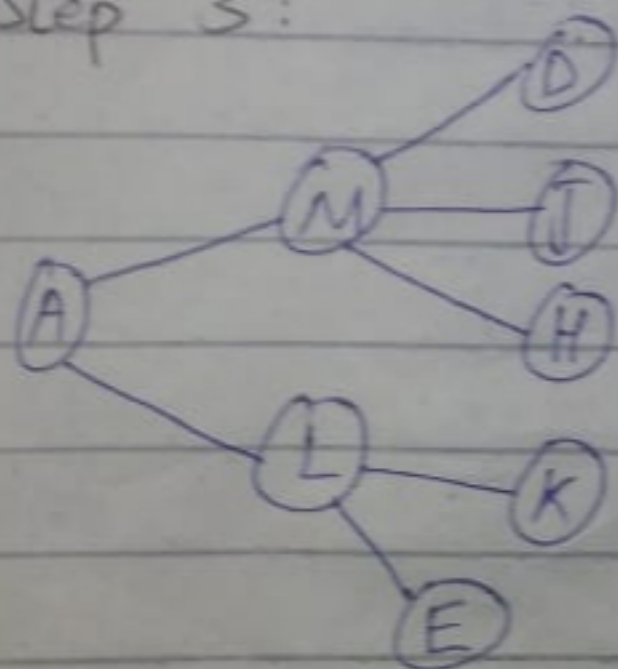
Step 2:-



A L

Output sequence -
A, L

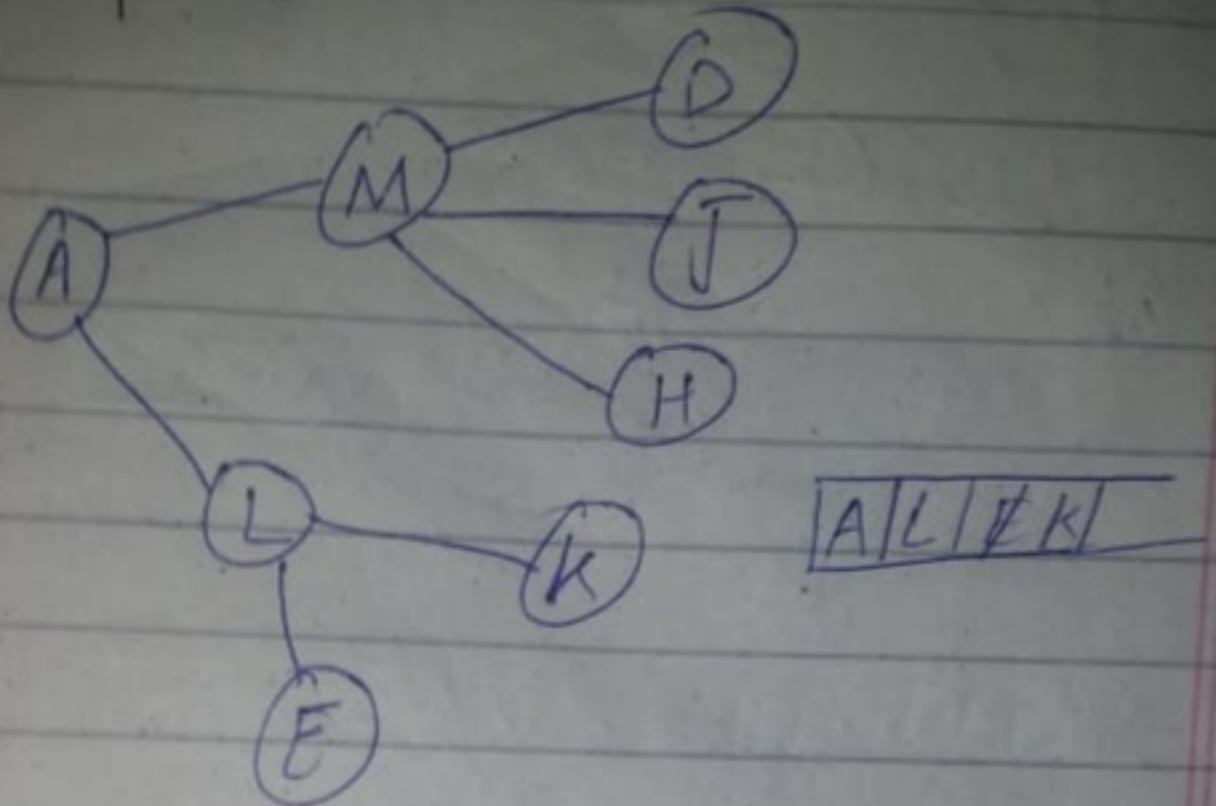
Step 3:



A L E

Output sequence :-
A, L, E

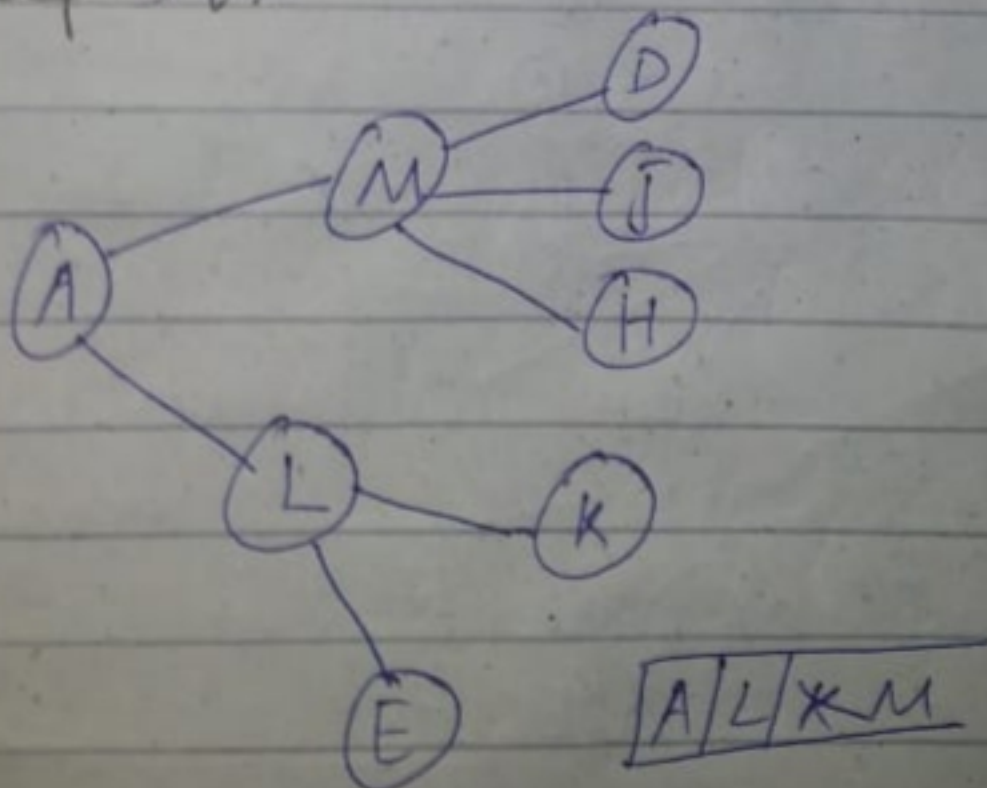
Step 4:-



Output sequence:-

A, L, E, K

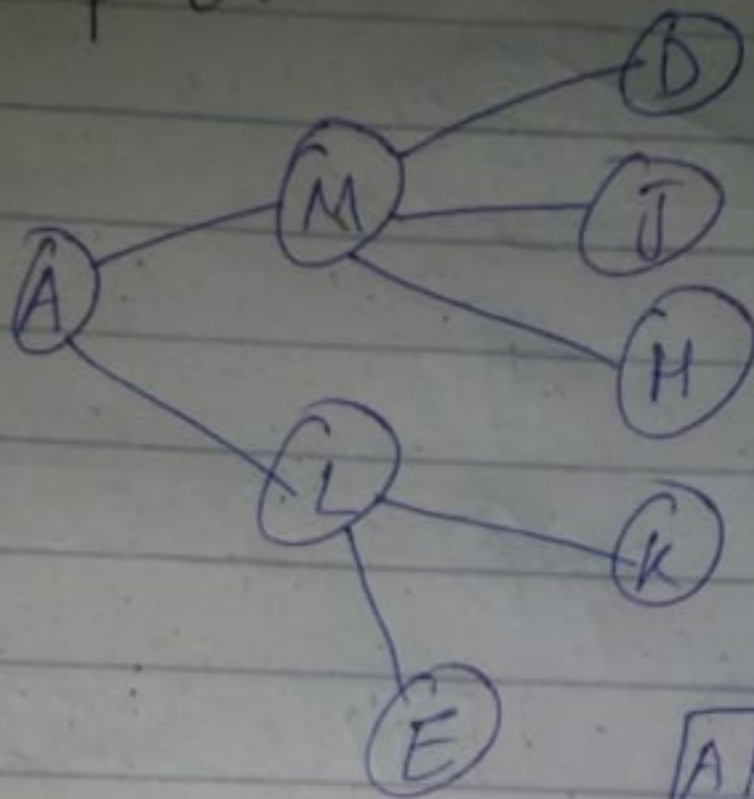
Step 5:-



output sequence:-

A, L, E, K, M

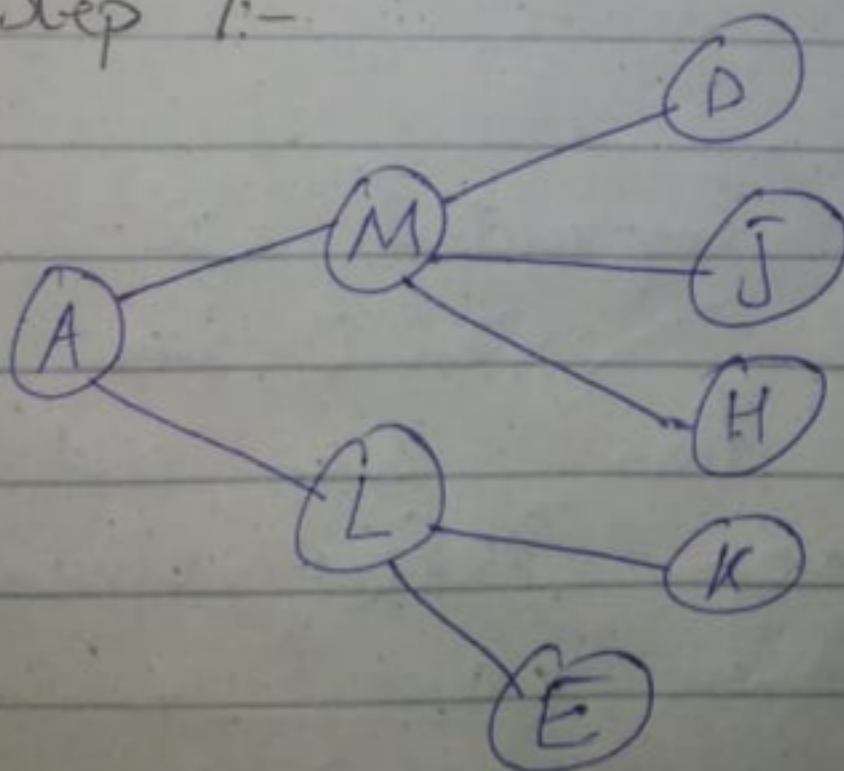
Step 6:-



Output sequence:-

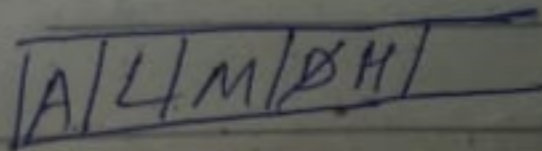
A, L, E, K, M, D

Step 7:-

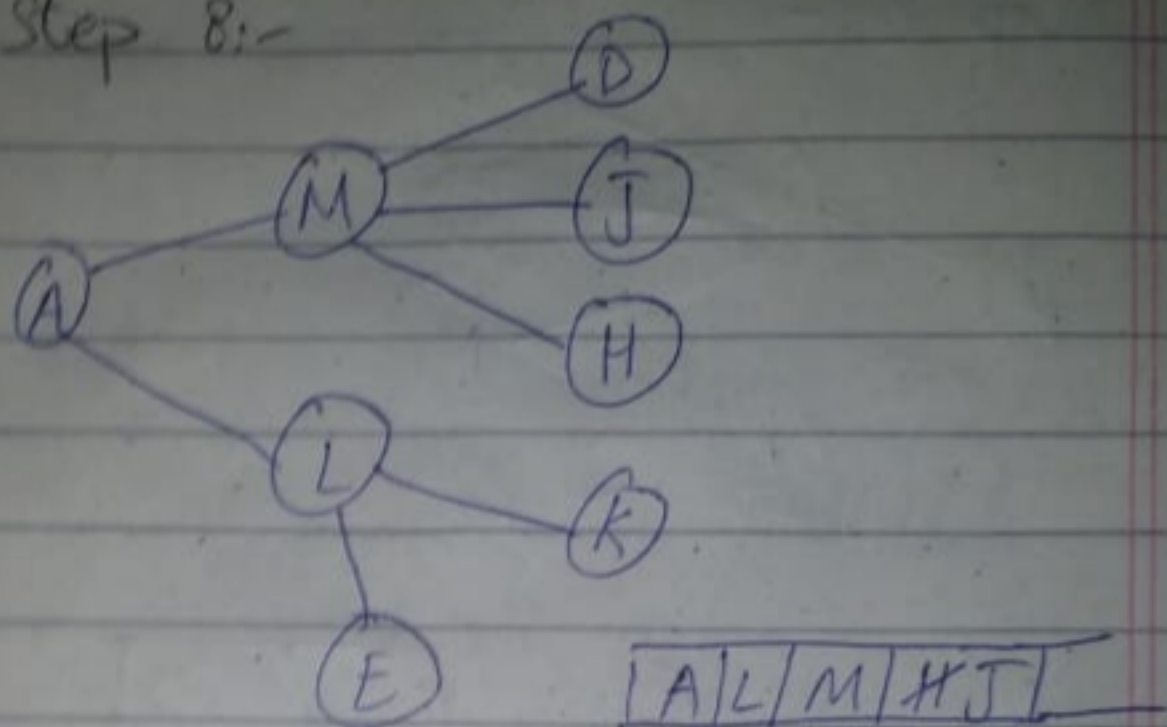


Output sequence:-

A, L, E, K, M, D, H



Step 8:-



Output Sequence:-

A, L, E, K, M, D, H, J

Q3 Queue:-

A sequential list in which elements are inserted from one end and are deleted/retrieved from other end is called a queue.

The end from where

an element can be inserted is called Rear of the queue

* The end from where an element can be retrieved is called front of the queue.

* "First in First out"

Examples:-

A car is waiting to pass through a signal.

Peoples waiting to submit their bills at bank window.

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