



SNS COLLEGE OF ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

COURSE NAME : 19CS307 - DATA STRUCTURES

II YEAR / III SEMESTER

Unit 1- LINEAR DATA STRUCTURES -LIST

Abstract Data Types (ADTs)



LINKED LISTS



A linked list is a linear data structure, in which the elements are not stored at contiguous memory locations

The linked list is a linear data structure where each node has two parts.

1. Data
2. Reference to the next node

Data: we can store the required information. It can be any data type such as int,float,double.

```
int age; char name[20];
```

Reference to the next node: It will hold the next nodes address.

Hence it is a type pointer



LINKED LISTS



Here, we need to group two different data types (heterogeneous). We can use **structure** data type to group the different data types. So, every node in a linked list is a structure data type.

```
struct node{  
    int data;  
    struct node *next;  
};
```





Types of Linked Lists

Following are the various types of linked list.

Simple or Singly Linked List – Item navigation is forward only.

Doubly Linked List – Items can be navigated forward and backward.

Circular Linked List – Last item contains link of the first element as next and the first element has a link to the last element as previous.



Activity



Assessment 1



1. List out the advantages of Linked List

- a) _____
- b) _____
- c) _____
- d) _____

2. Identify the disadvantages of Linked List

- a) _____
- b) _____
- c) _____
- d) _____





REFERENCES



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THANK YOU