Assignment C-22

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Q1. What is Generalized Linked list? Explain with example?

Ans:

A generalized list L is a finite sequence of 'n' elements, The element (n ≥ 0). The element is either an atom (single element) or another generalized list. The element ei that are not atoms, they will be sub-list of L. Suppose L is (A,B,C),((D,E),F)),G) Here has three sublist (A,B,C); Sub list((D,E),F) and atom G. Again Sub-list ((D,E),F) has two elements one sub-list(D,E) and atom F.

C++ Program for defining Generalized List

```
class Generalized_List_Node {
    Private:
        Generalised-List-Node *Node;
        bool tag;
        union {
            char data;
            Generalized_list_Nod *down;
        }
};
```

So if tag is true then element represented by the Node is a sublist. The down point to the first node in the sublist. If tag is false, the element is atom.

Q.2. What are the advantages of Dynamic memory allocation?

Ans: Advantages of Dynamic memory allocation:

(1) Data Structure can grow and shrink according to the requirement.

(2) Dynamic allocation is done at run time.

(3) We can allocate additional storage whenever we need them.

(4) We can de allocate dynamic space whenever we are done with them.

(5) Thus we can always have exactly the amount of space required - no more, no less.