

22/11/24
] WAP to Implement singly linked list with following Operations

- a] create a linked list
- b] Insertion
- c] Delete

Insert

```
struct Node
{
    int data;
    struct Node *Next;
}
```

*head = Null;

```
void insert_first (struct Node *P, int x)
{
```

```
    struct Node *t;
```

```
    t = (struct Node *) malloc (size of struct Node *);
```

```
    t -> next = head;
```

```
    t -> data = x;
```

```
    head = t;
```

```
}
```

```
void insert_last (struct Node *P, int x)
{
```

```
    while (P -> next != Null)
```

```
        P = P -> next;
```

```
    struct Node *t;
```

```
    t = (struct Node *) malloc (size of struct Node *);
```

```
    t -> data = x;
```

```
    P -> next = t;
```

```
    t -> next = Null;
```

```
}
```



```

void insert_pos (struct node *p, int x, int pos)
{
    struct node *q;
    t = (struct Node *) Malloc (Size of (struct Node *));
    t -> data = x;
    for (struct Node *
    for (int i = 1; i < pos; i++) {
        q = p;
        p = p -> next;
        t -> next = p;
        q -> next = t;
    }
}

```

```

void delete_first (struct Node *p)
{
    if (head -> next == Null)
    {
        free (head);
        return;
    }
    head = head -> next;
    free (p);
}

```

```

void delete_last (struct Node *p)
{
    struct Node *q;
    while (p -> next != Null)
    {
        q = p;
        p = p -> next;
    }
    q -> next = Null;
    free (p);
}

```


void delete_Pos (struct Node *P, int Pos)

{

struct Node *q;

for (int i = 0; i < Pos; i++) {

q = P;

P = P->next;

}

q->next = P->next;

free(P);

}

void display (struct Node *P)

{

while (P->next != Null)

{

int x = P->data;

Print ("%d\t", x);

P = P->next;

}

}

int main () {

insert_first (head, 8);

insert_first (head, 9);

insert_last (head, 7);

insert_Pos (head, 2, 2);

display (head);

~~delete_first (head);~~

display (head);

delete_last (head);

display (head);


```
delete_Pos(head, 2);  
display(head);  
insert_at(head, 5);  
display(head);
```

```
return 0;
```

```
}
```

Output

9 → 2 → 8 → 7 → Null

2 → 8 → 7 → Null

2 → 8 → Null

2 → Null

~~2 → 5 → Null~~

22/01/24