WEEK 1 - SINGLE LINKED LIST

```
#include <stdio.h>
int n = 0;
void Insert(int a[], int p, int e);
void Delete(int a[], int p);
void Search(int a[], int e);
void Traverse(int a[]);
void Sort(int a[]);
int main()
{
int a[5], ch, e, p;
printf("1.Insert \n2.Delete \n3.Search");
printf("\n4.Traverse \n5.Sort \n6.Exit\n");
do
 {
 printf("\nEnter your choice : ");
 scanf("%d", &ch);
 switch(ch)
 {
 case 1:
 printf("Enter the position : ");
 scanf("%d", &p);
 printf("Enter the element : ");
 scanf("%d", &e);
 Insert(a, p, e);
 break;
 case 2:
 printf("Enter the position : ");
 scanf("%d", &p);
 Delete(a, p);
 break;
```

```
 case 3:
 printf("Enter the element : ");
 scanf("%d", &e);
 Search(a, e);
 break;
 case 4:
 printf("The elements are : ");
 Traverse(a);
 break;
 case 5:
 Sort(a);
 break;
 }
 } while(ch <= 5);
return 0;
}
void Insert(int a[], int p, int e)
{
int i;
for(i = n; i >= p; i--)
 a[i + 1] = a[i];
 a[p] = e;
 n = n + 1;
}
void Delete(int a[], int p)
{
int i;
for(i = p; i < n; i++)
 a[i] = a[i + 1];
 n = n - 1;
}
```

```
void Search(int a[], int e)
{
int i, flag = 0;
for(i = 0; i < n; i++)
 {
 if(e == a[i])
 {
 flag = 1;
 break;
 }
 }
 if(flag == 1)
 printf("Successful. Element %d is at location %d", e, i);
else
 printf("Unsuccessful.");
}
void Traverse(int a[])

{
int i;
for(i = 0; i < n; i++)
 printf("%d\t", a[i]);
}
void Sort(int a[])
{
int i, j, t;
for(i = 0; i < n-1; i++)
 {
 for(j = i + 1; j < n; j++)
 {
 if(a[i] > a[j])
 {
```

```
 t = a[i];
 a[i] = a[j];
 a[j] = t;
 }
 }
 }
}
```

OUTPUT

```
1.Insert
2.Delete
3.Search
4.Traverse
5.Sort
6.Exit
Enter your choice : 1
Enter the position : 0
Enter the element : 7
Enter your choice : 4
The elements are : 7
Enter your choice : 1
Enter the position : 0
Enter the element : 14
Enter your choice : 4
The elements are : 14     7
Enter your choice : 1
Enter the position : 1
Enter the element : 21
Enter your choice : 4
The elements are : 14     21         7
Enter your choice : 2
Enter the position : 1
```

Enter your choice : 4

The elements are : 14 7

Enter your choice : 3

Enter the element : 7

Successful. Element 7 is at location 1