Aim:- Implementation of Menu driven Selection sort, Bubble sort, Insertion sort

Source Code:-

```
#include<stdio.h>
#include<stdlib.h>
void display(int a[],int n);
void bubble_sort(int a[],int n);
void selection_sort(int a[],int n);
void insertion_sort(int a[],int n);
//-----------------Main Function----------------------
int main()
{ printf("D10A_Atharva Chavan_9\n\n");
int n,choice,i;
char ch[20];
printf("Enter no. of elements u want to sort : ");
scanf("%d",&n);
int arr[n];
for(i=0;i<n;i++)
{
printf("Enter %d Element : ",i+1);
scanf("%d",&arr[i]);
}
printf("Please select any option Given Below for Sorting : \n");
while(1)
{
```

```
printf("\n1. Bubble Sort\n2. Selection Sort\n3. Insertion Sort\n4. Display Array.\n5. Exit the Program.\n");

printf("\nEnter your Choice : ");

scanf("%d",&choice);

switch(choice)

{

case 1:

bubble_sort(arr,n);

break;

case 2:

selection_sort(arr,n);

break;

case 3:

insertion_sort(arr,n);

break;

case 4:

display(arr,n);

break;

case 5:

return 0;

default:

printf("\nPlease Select only 1-5 option ----\n");

}

} return 0;

}

//-----------End of main function----------
```

```
//-------------------Display Function-----------------
void display(int arr[],int n)
{
for(int i=0;i<n;i++)
{
printf(" %d ",arr[i]);
}
}
//---------------------Bubble Sort Function-----------
void bubble_sort(int arr[],int n)
{
int i,j,temp;
for(i=0;i<n;i++)
{
for(j=0;j<n-i-1;j++)
{
if(arr[j]>arr[j+1])
{
temp=arr[j];
arr[j]=arr[j+1];
arr[j+1]=temp;
}
}
}
printf("After Bubble sort Elements are : ");
display(arr,n);
```

```
}
//------------------Selection Sort Function---------
void selection_sort(int arr[],int n)
{
int i,j,temp;
for(i=0;i<n-1;i++)
{
for(j=i+1;j<n;j++)
{
if(arr[i]>arr[j])
{
temp=arr[i];
arr[i]=arr[j];
arr[j]=temp;
}
}
}
printf("After Selection sort Elements are : ");
display(arr,n);
}
//---------------Insertion Sort Function-------------------
void insertion_sort(int arr[],int n)
{
int i,j,min;
for(i=1;i<n;i++)
{
```

```
min=arr[i];
j=i-1;
while(min<arr[j] && j>=0)
{
arr[j+1]=arr[j];
j=j-1;
}
arr[j+1]=min;
}
printf("After Insertion sort Elements are : ");
display(arr,n);
}
```

Output:-

```
D10A_Atharva Chavan_9

Enter no. of elements u want to sort : 10
Enter 1 Element : 45
Enter 2 Element : 312
Enter 3 Element : 78
Enter 4 Element : 63
Enter 5 Element : 01
Enter 6 Element : 0
Enter 7 Element : 78
Enter 8 Element : 6
Enter 9 Element :
7
Enter 10 Element : 64
Please select any option Given Below for Sorting :

1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Display Array.
5. Exit the Program.

Enter your Choice : 1
After Bubble sort Elements are :  0  1  6  7  45  63  64  78  78  312
1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Display Array.
5. Exit the Program.
```

```
Enter your Choice : 2
After Selection sort Elements are :  0  1  6  7  45  63  64  78  78  312
1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Display Array.
5. Exit the Program.

Enter your Choice : 3
After Insertion sort Elements are :  0  1  6  7  45  63  64  78  78  312
1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Display Array.
5. Exit the Program.

Enter your Choice : 4
 0  1  6  7  45  63  64  78  78  312
1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Display Array.
5. Exit the Program.

Enter your Choice : 5
```