**Bubble sort 01:**

```c
#include <stdio.h>

void main ()
  {
inti, j, temp, n;
printf("Enter array size:");
scanf("%d", &n);
int a[n];
printf("Enter Data\n");
    for (i = 0; i< n; ++i)
        scanf("%d", &a[i]);
    for (i = 0; i< n; ++i){
      for (j = i + 1; j < n; ++j){
        if (a[i] < a[j]){
           temp= a[i];
           a[i] = a[j];
           a[j] = temp;
        }
      }
    }

printf("Descending order\n");
    for (i = 0; i< n; ++i){
printf("%d\n", a[i]);
```

```
        }
    return 0;
  }
```

## Bubble sort 02:

```c
#include<stdio.h>

void  main()
{
inti,j,temp,n,sum=0;
printf("Enter array size:");
scanf("%d", &n);
int a[n];
printf("Enter Data\n");

for(i=0; i<n; i++)
scanf("%d", &a[i]);
    for (i = 0; i< n; ++i){
for(j=0; j<n-i-1; j++){
        if(a[j]>a[j+1]){
            temp=a[j];
            a[j]=a[j+1];
            a[j+1]=temp;
        }
      }
    }
printf("Ascending order\n");
    for (i = 0; i< n; i++){
printf("%d\n", a[i]);
    }
```

```c
for(i=0; i< n; i++){

    sum=sum+a[i];

    }
printf("Sum is = %d\n",sum);

    return 0;

}
```

## Insertion sort 01:

```c
#include <stdio.h>

void main ()
  {
inti,j,n,temp;
printf("Enter array size:\n");
scanf("%d", &n);
int a[n];
printf("Enter data \n");

    for (i = 0; i< n; ++i)
        scanf("%d",&a[i]);
    for (i = 0; i< n; ++i){
      for (j = i + 1; j < n; ++j){
        if (a[i] < a[j]){
            temp = a[i];
            a[i] = a[j];
            a[j] = temp;
        }
      }
    }
printf("Descending order:\n");
```

```c
    for (i = 0; i< n; ++i){
printf("%d\n", a[i]);
    }
    return 0;
  }
```

## Insertion sort 02:

```c
#include<stdio.h>

intmain()
{
inti,j,n,k;
printf("Enter Array Size: ");
scanf("%d",&n);
int a[n];
printf("Enter Data: ");

for(i=0; i<n; i++)
scanf("%d",&a[i]);

for(i=1; i<n; i++){
int x=a[i];
    j=i;
    while(j>0 && a[j-1]>x){
       a[j]=a[j-1];
       j--;
    }
    a[j]=x;
  }
printf("Ascending Order: ");
```

```c
for(i=0; i<n; i++)

printf("%d ",a[i]);

printf("\n");

printf("Difference btwn max-min= %d\n",a[n-1]-a[0]);


    return 0;

}
```

## Insertion sort 03:

```c
#include <stdio.h>


intmain()

{

inti,j,n,temp;

    double sum=0;

printf("Enter array size:\n");

scanf("%d",&n);

int a[n];

printf("Enter data:\n");


for(i=0; i<n; i++){

scanf("%d",&a[i]);

    sum+=a[i];

  }

  for(i=0;i<n;i++){

    j = i;

    while(j>0){

      if(a[j-1] > a[j]){

        temp = a[j-1];

        a[j-1] = a[j];
```

```c
                a[j] = temp;

        }
else{

        break;

        }

        j--;

    }

  }
printf("Ascending Order:\n");

     for(i=0;i<n;i++)

printf(" %d\n",a[i]);

printf("\n");

printf("Avg %lf\n",sum/n);


  return 0;

}
```