Exp - 3

Q1) Sort elements is in ascending order using bubble sort

Ans

```
#include <stdio.h>
int main()
{
   int i, j, n;
   int temp = 0;
   printf("Enter number of array elements: ");
   scanf("%d", &n);
   int arr[n];
   printf("Enter array elements: \n");

   for (i=0; i<n; i++)
   {
      printf("Enter element %d: ", i);
      scanf("%d", &arr[i]);
   }
   for(i=0; i<n; i++)
   {
      for (j=0; j<n-1; j++)
      {
         if (arr[j] < arr[j+1])
         {
            temp = arr[j];
            arr[j] = arr[j+1];
            arr[j+1] = temp;
         }
      }
   }
```

```
printf("Array sorted in ascending order:\n");
for ( i=0 ; i<n ; i++)
 {
    printf("\n%d", arr[i]);
 }
  return 0;
}
```

Output:-

```
Enter number of array elements : 5
Enter array elements:
Enter element 0 : 10
Enter element 1 : 5
Enter element 2 : 0
Enter element 3 : 200
Enter element 4 : 42
Array sorted in ascending order:
0
5
10
42
200
```

Q 2) Sort elements in descending order using selection sort.

Ans

```
#include<stdio.h>
int main()
{
   int i, j, n, temp = 0;
   printf("Enter number of array elements: ");
   scanf("%d", &n);
   int arr[n];
```

```
printf("Enter array elements:\n");
for (i=0; i<n; i++)
{
    printf("Enter Elements:%d:", i);
    scanf("%d", &arr[i]);
}
for (i=0; i<n; i++)
{
    for (i=i+1; i<n; i++)
    {
        if (a[i] < a[i])
        {
            r = a[i];
            a[i] = a[i];
            a[i] = r;
        }
    }
}
printf("\n Sorted Array Element in descending orda :\n");
for (i=0; i<n; i++)
{
    printf("%d\n", a[i]);
}
return 0;
}
```

* Output

Enter no. of Elements in array : 5
Enter array elements:
1
2
3
4
5

Sorted array element in descending order

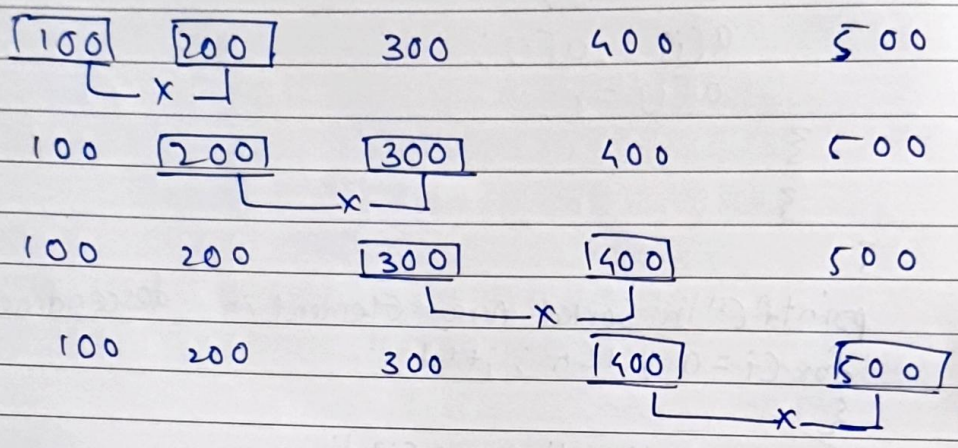
5
4
3
2
1

3)

Bubble sort:

5:- 100, 200, 300, 400, 500

we know no. of pass = n(-1) n=5

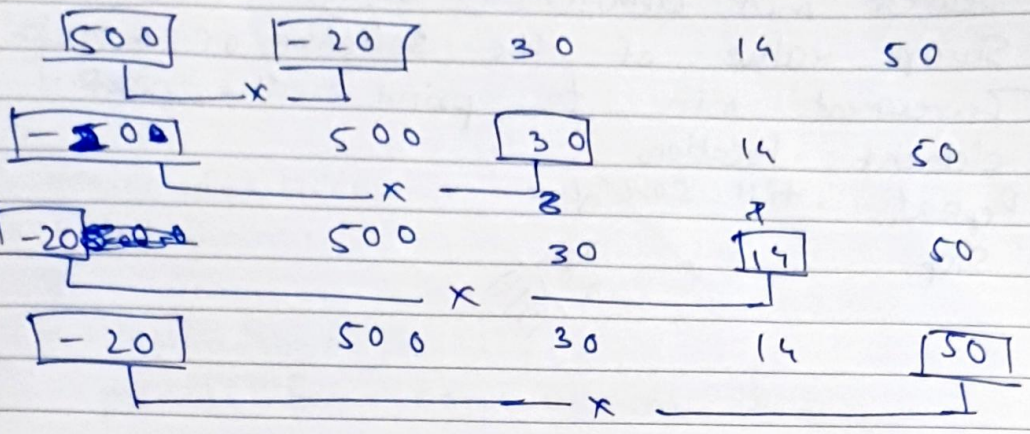


* Algorithm.

1) Start with the list of no.
2) Compare each element and swap if the first element is greater than second element.
3) After each full pass the largest unsorted element moves to the array.
4) Repeat the process of 2 step on the unsorted Array.
5) Stop the program.

4) Selection sort.

Ans. 5 elements:- 500, -20, 30, 14, 50



Pass-2) -20 500 30 14 50

-20 30 500 14 50

-20 14 500 30 50

Pass-3) -20 14 500 30 50

-20 14 30 500 50

Pass-4) -20 14 30 500 50

-20 14 30 50 500

* Algorithm.

1) Start
2) Search min element of array.
3) Swap value of the selection of main
4) Increment min to print the next element location
5) Repeat till sorted
6) Stop

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