S.No: 1	Exp. Name: ***Write a C program to find the reverse of a given number***	Date: 2023-03-31

Aim:

Design a C program which reverses the given number.

Source Code:

reverse.c

```
#include<stdio.h>
int main()
{
        int n,rem,rev=0;
        scanf("%d",&n);
        while(n>0)
        {
                rem=n%10;rev=rev*10+rem;n=n/10;
        }
        printf("Reversed number= %d",rev);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
456
Reversed number= 654

Test Case - 2
User Output
958745
Reversed number= 547859

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S.No: 2	Exp. Name: ***Write a C program to find second largest for the given numbers***	Date: 2023-03-31

Aim:

Design a C program which finds the `second maximum number` among the given one dimensional array of elements.

```
Sample Input and Output:Enter how many values you want to read : 6
Enter the value of a[0] : 45
Enter the value of a[1] : 24
Enter the value of a[2] : 23
Enter the value of a[3] : 65
Enter the value of a[4] : 78
Enter the value of a[5] : 42
The second largest element of the array = 65
```

Note:Do use the**printf()**function with a**newline**character (\n) at the end.

Source Code:

second_large.c

```
#include<stdio.h>
int main()
{
        int n,a[20],i,max1=0,max2=0;
        printf("Enter how many values you want to read : ");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
        printf("Enter the value of a[%d] : ",i);
        scanf("%d",&a[i]);
        }
        for(i=0;i<n;i++)
        {
                if(max1<a[i])
                {
                        max2=max1;
                        max1=a[i];
                }
                else if(a[i]>max2&&a[i]<max1)
                {
                        max2=a[i];
                }
        }
        printf("The second largest element of the array = %d\n",max2);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter how many values you want to read :

4
Enter the value of a[0] :
32
Enter the value of a[1] :
25
Enter the value of a[2] :
69
Enter the value of a[3] :
47
The second largest element of the array = 47

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S.No: 3	Exp. Name: ***Write a program which finds the kth smallest number among the given list of numbers.***	Date: 2023-03-31

Aim:

Write a program which finds thek^{th}smallest number among the given one dimensional array.

Sample Input and Ouput:

```
Enter how many values you want to read : 5
Enter the value of a[0] : 20
Enter the value of a[1] : 30
Enter the value of a[2] : 16
Enter the value of a[3] : 15
Enter the value of a[4] : 1
Enter which smallest element you want: 2
16 is the 2th smallest element
```

Hint: Thek^{th} element refers to the index.

Source Code:

smallest.c

```
#include<stdio.h>
#define max 100
int main()
{
        int a[max],i,j,n,kth,temp,pos;
        printf("Enter how many values you want to read : ");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                printf("Enter the value of a[%d] : ",i);
                scanf("%d",&a[i]);
        }
        printf("Enter which smallest element you want: ");
        scanf("%d",&kth);
        for(i=0;i<n;i++)
        {
                pos=i;
                for(j=i+1;j<n;j++)
                if(a[j]<a[pos])
                {
                        pos=j;
                }
                temp=a[i];
                a[i]=a[pos];
                a[pos]=temp;
        }
        printf("%d is the %dth smallest element",a[kth],kth);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output

Enter how many values you want to read :
5
Enter the value of a[0] :
20
Enter the value of a[1] :
30
Enter the value of a[2] :
16
Enter the value of a[3] :
15
Enter the value of a[4] :
1
Enter which smallest element you want:
2
16 is the 2th smallest element

Test Case - 2
User Output
Enter how many values you want to read :
6
Enter the value of a[0] :
32
Enter the value of a[1] :
65
Enter the value of a[2] :
98
Enter the value of a[3] :
74
Enter the value of a[4] :
12
Enter the value of a[5] :
15
Enter which smallest element you want:
4
74 is the 4th smallest element

S.No: 4	Exp. Name: ***Design an algorithm and implement using C language the following exchanges***	Date: 2023-03-31

Aim:

Design an algorithm and implement using C language the following exchanges **a** ← **b** ← **c** ← **d** ← **a** and print the result as shown in the example.

```
Sample Input and Output:
Enter values of a, b, c and d: 98 74 21 36
After swapping
a = 74
b = 21
c = 36
d = 98
```

Source Code:

exchange.c

```
#include<stdio.h>
int main()
{
        int a,b,c,d,temp;
        printf("Enter values of a, b, c and d: ");
        scanf("%d%d%d%d",&a,&b,&c,&d);
        temp=a;
        a=b;
        b=c;
        c=d;
        d=temp;
        printf("After swapping\na = %d\nb = %d\nc = %d\nd = %d\n",a,b,c,d);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter values of a, b, c and d:
1 2 3 4
After swapping
a = 2
b = 3
c = 4
d = 1

Test Case - 2
User Output
Enter values of a, b, c and d:
98 74 21 36
After swapping
a = 74

```
b = 21
c = 36
d = 98
```