Assignment - 14

Array in C Language

1. Write a program to calculate the sum of numbers stored in an array of size 10. Take array values from the user.

```
#include<stdio.h>
int main()
{
    int a[10], i, sum = 0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
        sum = sum + a[i];
    }
    printf("\nSum of numbers is %d", sum);
}
```

2. Write a program to calculate the average of numbers stored in an array of size 10. Take array values from the user.

```
#include<stdio.h>
int main()
{
    int a[10], i, sum = 0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
        sum = sum + a[i];
    }
    printf("\nAvg. of numbers is %.2f", sum/10.0);
}
```

3. Write a program to calculate the sum of all even numbers and sum of all odd numbers, which are stored in an array of size 10. Take array values from the user.

```
#include<stdio.h>
```

```c
int main()
{
    int a[10], i, se = 0, so = 0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
        if (a[i]%2==0)
        {
            se = se + a[i];
        }
        else
        {
            so = so + a[i];
        }
    }
    printf("\nSum of all even numbers is %d", se);
    printf("\nSum of all odd numbers is %d", so);
}
```

4. Write a program to find the greatest number stored in an array of size 10. Take array values from the user.

```c
#include<stdio.h>
int main()
{
    int a[10], i, se = 0, so = 0, j, temp=0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
    }
    for ( i = 0; i < 10; i++)
    {
        for ( j = 0; j < 10; j++)
        {
            if (a[i] < a[j])
            {
                temp = a[j];
                a[j] = a[i];
                a[i] = temp;
            }
        }
```

```
    }
    printf("\nthe greatest number stored in an array of size 10 is %d", a[i]);
}
```

5. Write a program to find the smallest number stored in an array of size 10. Take array values from the user.

```
#include<stdio.h>
int main()
{
    int a[10], i, se = 0, so = 0, j, temp=0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
    }
    for ( i = 0; i < 10; i++)
    {
        for ( j = 0; j < 10; j++)
        {
            if (a[i] > a[j])
            {
                temp = a[j];
                a[j] = a[i];
                a[i] = temp;
            }
        }
    }
    printf("\nthe greatest number stored in an array of size 10 is %d", a[i]);
}
```

6. Write a program to sort elements of an array of size 10. Take array values from the user.

```
#include<stdio.h>
int main()
{
    int a[10], i, j, temp;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; ++i)
    {
        scanf("%d",&a[i]);
    }
```

```
    for ( i = 0; i < 10; ++i)
    {
        for ( j = i+1; j < 10; ++j)
        {
            if (a[i] > a[j])
            {
                temp = a[i];
                a[i] = a[j];
                a[j] = temp;
            }
        }
    }
    printf("\nSorted array is :");
    for ( i = 0; i < 10; ++i)
    {
        printf("\t%d", a[i]);
    }
}
```

7. Write a program to find second largest in an array.Take array values from the user.

```
#include<stdio.h>
int main()
{
    int a[10], i, se = 0, so = 0, j, temp=0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
    }
    for ( i = 0; i < 10; i++)
    {
        for ( j = 0; j < 10; j++)
        {
            if (a[i] < a[j])
            {
                temp = a[j];
                a[j] = a[i];
                a[i] = temp;
            }
        }
    }
```

```
    printf("\nsecond largest number in an array of size 10 is %d", a[i-1]);
}
```

8. Write a program to find the second smallest number in an array.Take array values from the user.

```
#include<stdio.h>
int main()
{
    int a[10], i, se = 0, so = 0, j, temp=0;
    printf("\nEnter 10 numbers: ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
    }
    for ( i = 0; i < 10; i++)
    {
        for ( j = 0; j < 10; j++)
        {
            if (a[i] > a[j])
            {
                temp = a[j];
                a[j] = a[i];
                a[i] = temp;
            }
        }
    }
    printf("\nthe second smallest number in an array of size 10 is %d", a[i-2]);
}
```

9. Write a program in C to read n number of values in an array and display it in reverse order. Take array values from the user.

```
#include<stdio.h>
int main()
{
    int  i, n;
    printf("\nEnter size of array: ");
    scanf("%d",&n);
    int a[n];
    for ( i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
```

```
    }
    for ( i = 1; i <= n; i++)
    {
        printf("\t%d",a[n-i]);
    }
}
```

10. Write a program in C to copy the elements of one array into another array.Take array values from the user.

```
#include<stdio.h>
int main()
{
    int  i, n;
    printf("\nEnter size of array: ");
    scanf("%d",&n);
    int a[n], b[n];
    for ( i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
        b[i] = a[i];
    }
    for ( i = 0; i < n; i++)
    {
        printf("\t%d",b[i]);
    }
}
```