Assignment - 14 A Job Ready Bootcamp in C++, DSA and IOT

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("Enter 10 numbers ");
   for(i=0;i<10;i++)
   {
      scanf("%d",&a[i]);
      sum=sum+a[i];
   }
   printf("Sum of 10 numbers is %d",sum);
   return 0;
}
```

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;
   float avg;
   printf("Enter 10 numbers ");
   for(i=0;i<10;i++)
   {
      scanf("%d",&a[i]);
      sum=sum+a[i];
   }
   avg=sum/10.0;
   printf("Average of 10 numbers is %.2f",avg);
   return 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>
 int main()
 {
    int a[10],i,EvSum=0,OdSum=0;
```

```c
        printf("Enter 10 numbers of an array ");
        for(i=0;i<10;i++)
        {
           scanf("%d",&a[i]);
        }
        for(i=0;i<10;i++)
        {
           if(a[i]%2==0)
             EvSum=EvSum+a[i];
           else
             OdSum=OdSum+a[i];
        }
        printf("Sum of all Even numbers is %d ",EvSum);
        printf("\nSum of all Even numbers is %d ",OdSum);

        return 0;
     }
```

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;
        printf("Enter 10 numbers of an array ");
        for(i=1;i<10;i++)
        {
           scanf("%d",&a[i]);
           if(a[0]<a[i])
             a[0]=a[i];
        }
        printf("Greatest number is %d ",a[0]);
        return 0;
     }
```

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

```c
     #include<stdio.h>
     int main()
     {
        int a[10],i;
        printf("Enter 10 numbers of an array ");
        for(i=0;i<10;i++)
        {
```

```c
        scanf("%d",&a[i]);
        if(a[0]>a[i])
            a[0]=a[i];
    }
    printf("Smallest number is %d ",a[0]);

    return 0;
}
```

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

```c
#include<stdio.h>
int main()
{
    int a[10],i,j,swap;
    printf("Enter the elements of array ");
    for(i=0;i<10;i++)
        scanf("%d",&a[i]);

    for(i=0;i<9;i++)
    {
      for(j=i+1;j<10;j++)
        {
            if(a[i]>a[j])
            {
                swap=a[i];
                a[i]=a[j];
                a[j]=swap;
            }
        }
    }
    printf("After sorting elements are ");
    for(i=0;i<10;i++)
        printf("%d ",a[i]);

    return 0;
}
```

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

```c
#include<stdio.h>
int main()
{
    int a[10],i,j,swap;
    printf("Enter elements of an array ");
    for(i=0;i<10;i++)
```

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

    for(i=0;i<9;i++)
    {
     for(j=i+1;j<10;j++)
      {
        if(a[i]>a[j])
        {
           swap=a[i];
           a[i]=a[j];
           a[j]=swap;
        }
      }
    }
    printf("Second largest element is %d",a[8]);

    return 0;
}
```

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,j,swap;
    printf("Enter elements of an array ");
    for(i=0;i<10;i++)
        scanf("%d",&a[i]);

    for(i=0;i<9;i++)
    {
     for(j=i+1;j<10;j++)
      {
        if(a[i]>a[j])
        {
           swap=a[i];
           a[i]=a[j];
           a[j]=swap;
        }
      }
    }
    printf("Second smallest number is %d",a[1]);
    return 0;
}
```

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.**

```c
#include<stdio.h>
int main()
{
    int a[100],i,n;

    printf("Enter array size ");
    scanf("%d",&n);
    printf("Enter array elements ");
    for(i=0;i<n;i++)
        scanf("%d",&a[i]);

    printf("Reverse order elements are ");
    for(i=n-1;i>=0;i--)
        printf("%d ",a[i]);

    return 0;
}
```

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

```c
#include<stdio.h>
int main()
{
    int A[5],i;
    int B[5];
    printf("Enter the elements of an A array ");
    for(i=0;i<5;i++)
        scanf("%d",&A[i]);

    printf("Elements of an B array are ");
    for(i=0;i<5;i++)
    {
        B[i]=A[i];
        printf("%d ",B[i]);
    }
    return 0;
}
```