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

Program -

```
#include<stdio.h>

int main()
{
    int arr[10] , i , sum = 0;

    printf("Enter 10 values\n");
    for(i = 0 ; i < 10 ; i++)
    {
        scanf("%d",&arr[i]);
        sum += arr[i];
    }

    printf("Sum of all the values stored in the array is %d",sum);
    return 0;
}
```

Output -

Enter 10 values
1 2 3 4 5 6 7 8 9 10
Sum of all the values stored in the array is 55

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

Program -

```
#include<stdio.h>

int main()
{
    int arr[10] , i , sum = 0;
    float avg;

    printf("Enter 10 values\n");
    for(i = 0 ; i < 10 ; i++)
    {
        scanf("%d",&arr[i]);
        sum += arr[i];
    }

    avg = sum / 10.0;
```

```
    printf("Average of all the values stored in the array is
%f",avg);
    return 0;
}
```

Output -
Enter 10 values
1 2 3 4 5 6 7 8 9 10
Average of all the values stored in the array is 5.500000

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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.

Program -

```
#include<stdio.h>

int main()
{
    int arr[10] , i , sum_even = 0 , sum_odd = 0;

    printf("Enter 10 values\n");
    for(i = 0 ; i < 10 ; i++)
    {
        scanf("%d",&arr[i]);
        if(arr[i] % 2 == 0)
            sum_even += arr[i];
        else
            sum_odd += arr[i];
    }

    printf("Sum of all the even numbers is %d",sum_even);
    printf("\nSum of all the odd numbers is %d",sum_odd);

    return 0;
}
```

Output -
Enter 10 values
1 2 3 4 5 6 7 8 9 10
Sum of all the even numbers is 30
Sum of all the odd numbers is 25

---

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

Program -

```
#include <stdio.h>

int greatest(int,int);

int main()
{
    int i , arr[10] , G;

    printf("Enter 10 values\n");
    for(i = 0 ; i < 10 ; i++)
        scanf("%d",&arr[i]);

    G = arr[0];
    for(i = 0 ; i < 10 ; i++)
    {
        G = greatest(G,arr[i]);
    }

    printf("\n\nGreatest number is %d",G);

    return 0;
}

int greatest(int a , int b)
{
    int g;
    g = a > b ? a : b;
    return g;
}
```

Output -

Enter 10 values
12 3 90 87 12 100 300 600 12 5
Greatest number is 600

---

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

Program -

```
#include <stdio.h>

int smallest(int,int);

int main()
{
    int i , arr[10] , S;
```

```
    printf("Enter 10 values\n");
    for(i = 0 ; i < 10 ; i++)
        scanf("%d",&arr[i]);

    S = arr[0];
    for(i = 0 ; i < 10 ; i++)
    {
        S = smallest(S,arr[i]);
    }

    printf("\n\nSmallest number is %d",S);

    return 0;
}

int smallest(int a , int b)
{
    int s;
    s = a < b ? a : b;
    return s;
}
```

Output -
Enter 10 values
12 3 90 87 12 100 300 600 12 5
Smallest number is 3

---

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

Program -

```
#include<stdio.h>

int main()
{
    int a[10] , i , j , s;

    printf("Enter 10 values\n");
    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])
           {
               s = a[j];
               a[j] = a[i];
```

```
                a[i] = s;
            }
        }
    }

    printf("Sorted array is\n");
    for(i = 0 ; i < 10 ; i++)
        printf("%d ",a[i]);

    return 0;
}
```

Output -
Enter 10 values
42 74 31 98 56 29 15 66 88 73
Sorted array is
15 29 31 42 56 66 73 74 88 98

---

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

Program -

```
#include<stdio.h>

void sortInDescending(int[],int);
int main()
{
    int a[10] , i , j;

    printf("Enter 10 array values\n");
    for(i = 0 ; i < 10 ; i++)
        scanf("%d",&a[i]);

    sortInDescending(a,10);

    int sl, flag = 0;
    for(i = 0 ; i < 10 ; i++)
    {
      for(j = i+1 ; j < 10 ; j++)
      {
          if(a[i] > a[j])
          {
              sl = a[j];
              flag = 1;
              break;
          }
      }
      if(flag == 1)
        break;
    }
```

```
    printf("\nSecond largest value is %d",sl);

    return 0;
}

void sortInDescending(int arr[],int N)
{
    int x , y , s;
    for(x = 0 ; x < N ; x++)
    {
       for(y = x+1 ; y < N ; y++)
       {
           if(arr[x] < arr[y])
           {
               s = arr[x];
               arr[x] = arr[y];
               arr[y] = s;
           }
       }
    }
}
```

Output -
Enter 10 array values
42 74 31 98 56 29 15 66 88 73
Second largest value is 88

---

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

Program -

```
#include<stdio.h>

void sort(int[],int);
int main()
{
    int a[10] , i , j;

    printf("Enter 10 array values\n");
    for(i = 0 ; i < 10 ; i++)
        scanf("%d",&a[i]);

    sort(a,10);

    int sl, flag = 0;
    for(i = 0 ; i < 10 ; i++)
    {
      for(j = i+1 ; j < 10 ; j++)
      {
          if(a[j] > a[i])
```

```
            {
                sl = a[j];
                flag = 1;
                break;
            }
        }
        if(flag == 1)
          break;
    }

    printf("\nSecond smallest value is %d",sl);

    return 0;
}

void sort(int arr[],int N)
{
    int x , y , s;
    for(x = 0 ; x < N ; x++)
    {
       for(y = x+1 ; y < N ; y++)
       {
           if(arr[x] > arr[y])
           {
               s = arr[y];
               arr[y] = arr[x];
               arr[x] = s;
           }
       }
    }
}
```

Output -
Enter 10 array values
12 90 31 89 36 68 54 8 72 77
Second smallest value is 12

---

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.

Program -

```
#include<stdio.h>

int main()
{
    int n , i , j;

    printf("Enter the size of array: ");
    scanf("%d",&n);
```

```
    int a[n];
    printf("Enter %d array values\n",n);
    for(i = 0 ; i < n ; i++)
        scanf("%d",&a[i]);

    printf("Entered array values are\n");
    for(i = 0 ; i < n ; i++)
        printf("%d ",a[i]);

    printf("\nArray in reverse order\n");
    for(i = n - 1 ; i >= 0 ; i--)
        printf("%d ",a[i]);
    return 0;
}
```

Output -
Enter the size of array: 4
Enter 4 array values
1 9 18 3
Entered array values are
1 9 18 3
Array in reverse order
3 18 9 1

---

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

Program -

```
#include<stdio.h>

int main()
{
    int n , i , j;

    printf("Enter the size of array: ");
    scanf("%d",&n);

    int a[n] , b[n];
    printf("Enter %d array values\n",n);
    for(i = 0 ; i < n ; i++)
    {
        scanf("%d",&a[i]);
        b[i] = a[i];
    }

    printf("Array \'a\':-\n");
    for(i = 0 ; i < n ; i++)
        printf("%d ",a[i]);

    printf("\nArray \'b\':-\n");
```

```
    for(i = 0 ; i < n ; i++)
        printf("%d ",b[i]);

    return 0;
}
```

Output -

Enter the size of array: 4
Enter 4 array values
2 3 1 5
Array 'a':-
2 3 1 5
Array 'b':-
2 3 1 5