Assignment 7 – Arrays

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Q1) Find minimum and maximum number in array.

```c
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of array\n");
    scanf("%d", &n);

    int arr[n];
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }
    int max = arr[0], min = arr[0];
    for (int i = 0; i < n; i++)
    {
        printf("Value at index %d: %d\n", i, arr[i]);
        if(arr[i]<min){
            min = arr[i];
        }
        if(arr[i]>max){
            max = arr[i];
        }
    }
    printf("\nLargest number in array is %d\n", max);
    printf("Smallest number in array is %d\n", min);

    return 0;
}
```

```
Enter the value at index 1: 5
Enter the value at index 2: 0
Enter the value at index 3: -20
Enter the value at index 4: 18
Value at index 0: -1
Value at index 1: 5
Value at index 2: 0
Value at index 3: -20
Value at index 4: 18

Largest number in array is 18
Smallest number in array is -20
```

Q2) Search the given number in array.

```c
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n];
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }
    int searchNum, flag= 1;
    printf("Enter a number u want to search in array\n");
    scanf("%d", &searchNum);

    for (int i = 0; i < n; i++)
    {
        if(arr[i]==searchNum){
            printf("%d is on index: %d\n", searchNum, i);
            flag = 0;
            break;
        }
    }
    if (flag)
    {
        printf("%d is not available in array\n", searchNum);
    }
```

```
    return 0;
}
```

```
PS D:\Firstbit Solutions\C Programming\Assignments\Assignment 7>
rchingNum_array.c -o 2_searchingNum_array } ; if ($?) { .\2_searc
Enter the size of an array:
3
Enter the value at index 0: 10
Enter the value at index 1: 20
Enter the value at index 2: 30
Enter a number u want to search in array
20
20 is on index: 1
PS D:\Firstbit Solutions\C Programming\Assignments\Assignment 7>
```

Q3) Find sum of all numbers.

```
#include<stdio.h>
int main(){
     int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n], sum = 0;
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
        sum += arr[i];
    }

    printf("Sum of all number of array is %d", sum);
    return 0;
}
```

```
Enter the size of an array:
5
Enter the value at index 0: 10
Enter the value at index 1: 20
Enter the value at index 2: 30
Enter the value at index 3: 40
Enter the value at index 4: 50
Sum of all number of array is 150
PS D:\Firstbit Solutions\C Programming\Assignments\Assignment 7>
```

Q4) Find odd and even among the numbers.

```c
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n], sum = 0;
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }

    //print even number
    printf("--------Even Nums in Array-------\n");
    for (int i = 0; i < n; i++)
    {
        !(arr[i]%2) && printf("%d ", arr[i]);
    }
    //print odd number
    printf("\n--------Odd Nums in Array-------\n");
    for (int i = 0; i < n; i++)
    {
        arr[i]%2 && printf("%d ", arr[i]);
    }

    return 0;
}
```

```
EvenNums_array.c -o 4_oddEvenNums_array } ; if ($?) { .\4_oddEvenNums_array }
Enter the size of an array:
5
Enter the value at index 0: 10
Enter the value at index 1: 11
Enter the value at index 2: 12
Enter the value at index 3: 15
Enter the value at index 4: 28
--------Even Nums in Array-------
10 12 28
--------Odd Nums in Array-------
11 15
```

Q5) Print alternate elements in array.

```c
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);
```

```
    int arr[n], sum = 0;
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }

    for (int i = 0; i < n; i=i+2)
    {
        printf("%d ", arr[i]);
    }

    return 0;
}
```

```
33;CEnter the size of an array:
6
Enter the value at index 0: 20
Enter the value at index 1: 10
Enter the value at index 2: 25
Enter the value at index 3: 30
Enter the value at index 4: 15
Enter the value at index 5: 41
20 25 15
```

Q6) Accept array and print only prime numbers of array.

```
#include<stdio.h>

void checkPrime(int arr[], int n){
    for (int i = 0; i < n; i++)
    {
        if(arr[i]==1) continue;

        int isPrime = 1;
        for (int j = 2; j*j <= arr[i]; j++)
        {
            if(arr[i] % j == 0){
                isPrime = 0;
                break;
            }
        }
        if (isPrime)
        {
            printf("%d ", arr[i]);
        }
    }
```

```
}

int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n], sum = 0;
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }

    checkPrime(arr,n);

    return 0;
}
```

```
Enter the size of an array:
5
Enter the value at index 0: 10
Enter the value at index 1: 11
Enter the value at index 2: 13
Enter the value at index 3: 25
Enter the value at index 4: 29
11 13 29
```

Q7) Take two array and add sum in third array
Example-
arr[5]= {1,2, 3, 4,5}
brr[5]={10,20,30, 40, 50}
crr[5]={11,22,33,44,55}

```
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n], sum = 0;

    //taking arr 1 from user
    printf("------Array 1 - arr --------\n");
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }
```

```
    int brr[n], crr[n];

    //taking brr (2) from user
    printf("------Array 1 - arr --------\n");
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &brr[i]);
    }

    //find sum and adding in crr in respective element
    for (int i = 0; i < n; i++)
    {
        crr[i] = arr[i] + brr[i];
        printf("crr[%d] = %d\n",i, crr[i]);
    }
    return 0;
}
```

```
Enter the size of an array:
5
------Array 1 - arr --------
Enter the value at index 0: 10
Enter the value at index 1: 20
Enter the value at index 2: 30
Enter the value at index 3: 40
Enter the value at index 4: 50
------Array 1 - arr --------
Enter the value at index 0: 1
Enter the value at index 1: 2
Enter the value at index 2: 3
Enter the value at index 3: 4
Enter the value at index 4: 5
crr[0] = 11
crr[1] = 22
crr[2] = 33
crr[3] = 44
crr[4] = 55
```

Q8)Merge Two arrays

```
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr1[n], arr2[n];

    //taking arr 1 from user
    printf("-----Enter values for Array 1-----\n");
```

```c
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr1[i]);
    }

    //taking arr 2 from user
    printf("-----Enter values for Array 2-----\n");
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr2[i]);
    }

    int arr3[2*n];
    //adding values from arr1 to arr3
    for (int i = 0; i < n; i++)
    {
        arr3[i] = arr1[i];
    }
    //adding values from arr2 to arr3
    for (int i = n; i < 2*n; i++)
    {
        arr3[i] = arr2[i-n]; //i=4, arr[]
    }


    //printing arr3
    for (int i = 0; i < 2*n; i++)
    {
        printf("%d ", arr3[i]);
    }

    return 0;
}
```

```
Enter the size of an array:
3
-----Enter values for Array 1-----
Enter the value at index 0: 10
Enter the value at index 1: 20
Enter the value at index 2: 30
-----Enter values for Array 2-----
Enter the value at index 0: 2
Enter the value at index 1: 5
Enter the value at index 2: 8
10 20 30 2 5 8
```

Q9)Reverse given array

```c
#include<stdio.h>

void reverseArray(int arr[], int n){
    for (int i = 0; i <= n/2; i++)
    {
        int temp = arr[i];  //1 2
        arr[i] = arr[n-i-1];  //a[0] = a[3-0-1] = a[2] = 3 2
        arr[n-i-1] = temp; // a[2] = temp = 1 2

        // printf("%d ", arr[i]);
    }

    //printng reversed array
    for (int i = 0; i < n; i++)
    {
        printf("%d ", arr[i]);
    }
}

int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n];

    //taking arr from user
    printf("-----Enter values for Array 1-----\n");
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }

    //reverse array
    reverseArray(arr,n);

    return 0;
}
```

```
Enter the size of an array:
4
-----Enter values for Array 1-----
Enter the value at index 0: 1
Enter the value at index 1: 2
Enter the value at index 2: 3
Enter the value at index 3: 4
4 2 3 1
```

Q10) Sort the array.

```c
#include<stdio.h>
int main(){
    int n;
    printf("Enter the size of an array:\n");
    scanf("%d", &n);

    int arr[n];

    //taking arr from user
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value at index %d: ", i);
        scanf("%d", &arr[i]);
    }

    for (int i = 0; i < n; i++)
    {
        for (int j = i+1; j < n; j++)
        {
            if(arr[i]>arr[j]){
                int temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }
    }

    //printing array
    for (int i = 0; i < n; i++)
    {
        printf("%d ", arr[i]);
    }

    return 0;
}
```

```
Enter the size of an array:
5
Enter the value at index 0: 5
Enter the value at index 1: 6
Enter the value at index 2: 0
Enter the value at index 3: 1
Enter the value at index 4: 3
0 1 3 5 6
```

-------END-------