1. Print elements of the given array present at odd indices and even indices.

```
#include <stdio.h>
void main()
{
   int i, n,arr[n];
   printf("Enter number of elements in the array: ");
   scanf("%d", &n);
   printf("Enter %d elements in the array:\n",n);
   for( i=0;i<n;i++)
   {
       printf("element %d : ",i);
      scanf("%d",&arr[i]);
   }
   printf("Even numbers in the array are: \n");
   for(int i=0;i<n;i++)
   {
      if(arr[i]%2==0)
         printf("%d ", arr[i]);
   }
   printf("\nOdd numbers in the array are: \n");
   for( i=0;i<n;i++)
   {
      if(arr[i]%2==1)
         printf("%d ", arr[i]);
   }
}
```

Output

```
/tmp/yyZA7iJTJZ.o
Enter number of elements in the array: 5
Enter 5 elements in the array:
element 0 : 6
element 1 : 5
element 2 : 4
element 3 : 2
element 4 : 3
Even numbers in the array are:
6 4 2
Odd numbers in the array are:
5 3
```

2 .Write a C program to calculate sum, product of all One Dimensional Array Elements.

```c
#include <stdio.h>
int main()
{
    int arr[10];
    int sum,product,i;
    printf("\nEnter elements : \n");
    for(i=0; i<10; i++)
    {
        printf("Enter arr[%d] : ",i);
        scanf("%d",&arr[i]);
    }
    sum=0;
    product=1;
    for(i=0; i<10; i++)
    {
      sum=sum+arr[i];
      product=product*arr[i];
    }
   printf("\nSum of array is     : %d"  ,sum);
   printf("\nProduct of array is : %d\n",product);
}
```

Output

```
/tmp/BrXw7qlnvO.o
Enter elements :
Enter arr[0] : 1
Enter arr[1] : 3
Enter arr[2] : 5
Enter arr[3] : 6
Enter arr[4] : 2
Enter arr[5] : 4
Enter arr[6] : 7
Enter arr[7] : 8
Enter arr[8] : 10
Enter arr[9] : 23
Sum of array is     : 69
Product of array is : 9273600
```

3. Write a C program to sort array elements in ascending order.

```c
#include <stdio.h>
void main (){
int num[20];
int i, j, a, n;
printf("enter number of elements in an array");
scanf("%d", &n);
printf("Enter the elements");
 for (i = 0; i < n; ++i)
  scanf("%d", &num[i]);
 for (i = 0; i < n; ++i){
  for (j = i + 1; j < n; ++j){
    if (num[i] > num[j]){
     a = num[i];
     num[i] = num[j];
     num[j] = a;
        }
     }
   }
   printf("The numbers in ascending order is:");
   for (i = 0; i < n; ++i)
   printf("%d\n", num[i]);

}
```

Output

```
/tmp/yyZA7iJTJZ.o
enter number of elements in an array5
Enter the elements
11
12
23
25
83
The numbers in ascending order is:11
12
23
25
83
```

4. Write a C program to find the first repeated element in an array.

```c
int main()
{
    int arr[5];
    int i,j,n=5;
    int ind,ele;
    for(i=0; i<n; i++)
    {
      printf("Enter element %d: ",i+1);
      scanf("%d",&arr[i]);
    }
    printf("Array elements are: ");
    for(i=0; i<n; i++)
    printf("%d ",arr[i]);
    printf("\n");
    ind=-1;
    for(i=0; i<n; i++)
    {
    for(j=i+1; j<n; j++)
    {
      if(arr[i]==arr[j])
    {
      ele=arr[j];
      ind=j;
      break;
          }
        }
        if(ind != -1)
        break;
    }
    if(ind!=-1)
        printf("%d repeated @ %d index\n",ele,ind);
    else
        printf("There is no repeated element\n");
return 0;
}
```

Output

```
/tmp/bk6C3jCjXF.o
Enter element 1: 4
Enter element 2: 5
Enter element 3: 6
Enter element 4: 2
Enter element 5: 3
Array elements are: 4 5 6 2 3
There is no repeated element
```

5. Write a C program to find the difference between the largest and smallest element in the array.

```c
#include <stdio.h>
int main()
{
    int arr[] = { 10, 20, 70, 40, 50 };
    int i = 0;
    int j = 0;
    int diff = 0;
diff = arr[1] - arr[0];
    for (i = 0; i < 5; i++) {
        for (j = i + 1; j < 5; j++) {
            if (arr[j] - arr[i] > diff)
                diff = arr[j] - arr[i];
        }
    }
 printf("Difference is: %d\n", diff);
return 0;
}
```

Output

```
/tmp/cEJtldiIAf.o
Difference is: 60
```