1. C Program that prints the odd & the even numbers in an array separately:

```c
#include <stdio.h>
void main()
{
    int i, num;
    printf("Enter size of
array:");
    scanf("%d", &num);
    int array[num];

    printf("Enter its
elements\n");
    for (i = 0; i < num; i++)
        scanf("%d", &array[i]);
```

```c
    printf("Even numbers in the array
are:");
    for (i = 0; i < num; i++) {
        if (array[i] % 2 == 0)
            printf("%d \t", array[i]);
    }
    printf("\nOdd numbers in the array
are:");
    for (i = 0; i < num; i++) {
        if (array[i] % 2 != 0)
            printf("%d \t", array[i]);
    }
}//main
```

Try yourself 1: Write a program that prints the no. of odd & no. of even numbers in an array.

2. C Program to find the largest value in a float type array:

```c
#include <stdio.h>
void main()
{
    int i,n;
    printf("No. of elements: ");
    scanf("%d",&n);
    float arr[n], max;
    printf("Enter %d numbers: ",n);
    for(i=0; i<n; ++i) // fill up array by user inputs
        scanf("%f",&arr[i]);
    max = arr[0]; //initially assume arr[0] is the max
    for(i=1; i<n; ++i) {
        if(max < arr[i]) //update max if arr[i] > current value of max
            max=arr[i];
    }
    printf("maximum=%.2f",max);
}
```

3. C Program to read two arrays from user, add them, and then output their sum:

```c
#include<stdio.h>
void main()
{
  int i, n;
  printf("No. of elements: ");
  scanf("%d",&n);
  int a[n],b[n],c[n];

  printf("Enter 1st array:");
  for (i=0; i<n; i++)
      scanf("%d",&a[i]);
```

```c
    printf("Enter 2nd array:");
    for (i=0; i<n; i++)
        scanf("%d",&b[i]);

    //compute sum of two arrays
    for(i=0; i<n; i++)
    {
        c[i]=a[i]+b[i];
        printf("\n %d+
%d=%d",a[i],b[i],c[i]);
    }
```

	`}`

Try yourself 3: Write a program reads two arrays from user and then output their product.

4. **C Program to read an array from user and an index and then delete the element in that index of array:**

```c
#include<stdio.h>
void main()
{
    int num, i, k;
    printf("\nEnter no of elements :");
    scanf("%d", &num);
    int arr[num];
    //Read elements in an array
    printf("\nEnter %d numbers :", num);
    for (i = 0; i < num; i++)
        scanf("%d", &arr[i]);
    printf("Index of element to
delete:");
    scanf("%d", &k);
```
```c
//shift each array element one cell
//left, starting from index k+1
    for(i=k; i<num-1; i++)
        arr[i] = arr[i+1];

    num--;  // decrease No of
elements

    printf("Array after deleting the
element at index: %d\n", k);
    for (i = 0; i < num; i++)
        printf("%d ", arr[i]);
}
```

5. **C Program to find the number of spaces in a string (character array):**

```c
#include<stdio.h>
void main()
{
    char s[100];//assume that user won't enter a string of size > 100
    int i,numSpace=0;//counter to count #of spaces
    printf("Enter a string:");
    gets(s); //read string from user
    for(i=0; s[i]!='\0'; i++) {
        if(s[i] == ' ') numSpace++;
    }
    printf("%d spaces\n", numSpace);
}
```

EXERCISE:
1. Write a program that searches for a given value (called a <u>search key</u>) in an array and prints the first and last index in which that value appears.
2. Write a program that prints all the indexes in which a search key appears.
3. Write a program that prints ALL indexes in which the largest value of array is present.
4. Write a program that prints ALL indexes in which the smallest value of array is present.

Assignment:
1. Write a program that deletes the first element in an array which matches a search key.
2. (Bonus marks) Write a program that deletes all the elements in an array which match a search key.
3. Write a C program to print the 2nd largest & 2nd smallest elements of an array.
4. Write a program that reads the size and elements of an float array from user and then computes the average of the numbers in it and prints it. Then it should compute number of elements which are greater than average and prints those elements. Sample input/output:
   Enter array size: **5**
   Enter elements: **12 13 16 15 14**

Average = 14.000000, The elements greater than average are: 16, 15

5. **Write C program to check if an input string is a palindrome (e.g. "madam", "dad", etc.) or not.**
6. **Write C program to count the number of capital letters and the number of small letters in an input string and print those numbers.**