```c
// WAP to search an element in an array.
#include <stdio.h>
#define MAX 5
int main()
{
    int number[MAX], key;
    for (int i = 0; i < MAX; i++)
    {
        printf("Enter the %d th elements of array: ", i + 1);
        scanf("%d", &number[i]);
    }

    printf("Enter the number you want to search in array: ");
    scanf("%d", &key);

    // Search for the key in the array
    int found = 0; // A flag to indicate whether the key is found

    for (int i = 0; i < MAX; i++)
    {
        if (number[i] == key)
        {
            printf("%d was found at index %d", key, i);
            found = 1;
            break;
        }
    }

    if (!found)
    {
        printf("%d was not found.", key);
    }
    return 0;
}
```

```
manish@fedora: ~/Documents/BCA/2nd Sem/C/College_Assignment/assignment16
$ ./question1
Enter the 1 th elements of array: 1
Enter the 2 th elements of array: 2
Enter the 3 th elements of array: 3
Enter the 4 th elements of array: 4
Enter the 5 th elements of array: 5
Enter the number you want to search in array: 3
3 was found at index 2%

manish@fedora: ~/Documents/BCA/2nd Sem/C/College_Assignment/assignment16
$ ./question1
Enter the 1 th elements of array: 4
Enter the 2 th elements of array: 5
Enter the 3 th elements of array: 6
Enter the 4 th elements of array: 7
Enter the 5 th elements of array: 8
Enter the number you want to search in array: 45
45 was not found.%
```

```c
// Program to sort an array of numbers in ascending order

#include <stdio.h>

int main() {
    int arr[100], n;

    // Read the number of elements from the user
    printf("\nHow many numbers you want to sort?: ");
    scanf("%d", &n);

    // Read the elements into an array
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    // Display the original order of the elements
    printf("\nThe numbers before sorting are:\n");
    for (int i = 0; i < n; i++) {
        printf("%d\t", arr[i]);
    }

    // Bubble Sort algorithm for ascending order
    for (int i = 0; i < n - 1; i++) {
        for (int j = 0; j < n - 1 - i; j++) {
            if (arr[j] > arr[j + 1]) {
                // Swap elements if they are in the wrong order
                int temp = arr[j];
                arr[j] = arr[j + 1];
                arr[j + 1] = temp;
            }
        }
    }

    // Display the elements in ascending order
    printf("\nThe numbers in ascending order are:\n");
    for (int i = 0; i < n; i++) {
        printf("%d\t", arr[i]);
    }

    return 0;
}

```

```
manish@fedora: ~/Documents/BCA/2nd Sem/C/College_Assignment/assignment16
$ ./question2

How many numbers you want to sort?: 5
2 43 22 16 3

The numbers before sorting are:
2       43      22      16      3
The numbers in ascending order are:
2       3       16      22      43
```

```c
// WAP to find the smallest and largest element in the array.
#include <stdio.h>

int main()
{
    int arr[100], n;

    // Read the number of elements from the user
    printf("Enter the number of elements in the array: ");
    scanf("%d", &n);

    // Read the elements into an array
    printf("Enter the elements of the array:\n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &arr[i]);
    }

    // Assume the first element as the initial min and max
    int smallest = arr[0];
    int largest = arr[0];

    // Iterate through the array to find the smallest and largest
    for (int i = 1; i < n; i++)
    {
        if (arr[i] < smallest)
        {
            smallest = arr[i];
        }
        if (arr[i] > largest)
        {
            largest = arr[i];
        }
    }

    // Display the results
    printf("The smallest number is: %d\n", smallest);
    printf("The largest number is: %d\n", largest);

    return 0;
}

```

```
manish@fedora: ~/Documents/BCA/2nd Sem/C/College_Assignment/assignment16
$ ./question3
Enter the number of elements in the array: 5
Enter the elements of the array:
33 21 7 96 4
The smallest number is: 4
The largest number is: 96

manish@fedora: ~/Documents/BCA/2nd Sem/C/College_Assignment/assignment16
$
```