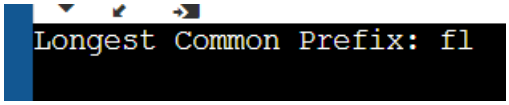
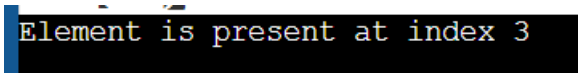
1)

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

char * longestCommonPrefix(char ** strs, int strsSize){
    if(strsSize == 0) return "";
    int prefixLen = strlen(strs[0]);
    for(int i=1; i<strsSize; i++){
        int j=0;
        while(j<prefixLen && strs[i][j]==strs[0][j]){
            j++;
        }
        prefixLen = j;
    }
    char *prefix = (char*)malloc(sizeof(char)*(prefixLen+1));
    strncpy(prefix, strs[0], prefixLen);
    prefix[prefixLen] = '\0';
    return prefix;
}

int main(){
    char *strs[] = {"flower","flow","flight"};
    int strsSize = 3;
    char *prefix = longestCommonPrefix(strs, strsSize);
    printf("Longest Common Prefix: %s\n", prefix);
    return 0;
}
```



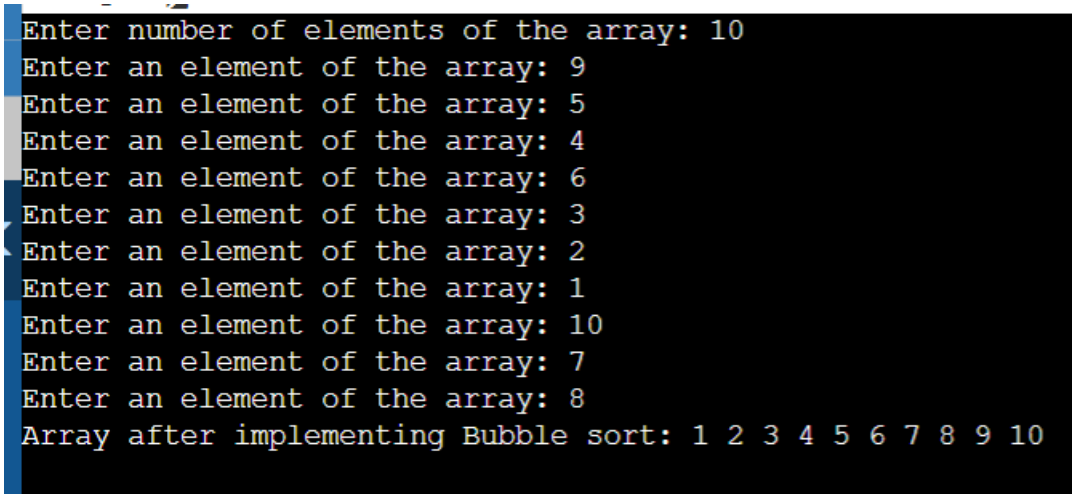
2)

```
#include <stdio.h>

int binarySearch(int arr[], int l, int r, int x) {
   while (l <= r) {
      int mid = l + (r - l) / 2;
      if (arr[mid] == x)
         return mid;
      if (arr[mid] < x)
         l = mid + 1;
      else
         r = mid - 1;
   }
   return -1;
}

int main() {
   int arr[] = { 2, 3, 4, 10, 40 };
   int n = sizeof(arr) / sizeof(arr[0]);
   int x = 10;
   int result = binarySearch(arr, 0, n - 1, x);
   (result == -1)
      ? printf("Element is not present in array")
      : printf("Element is present at index %d", result);
   return 0;
}
```



3)

```
#include <stdio.h>

int main() {
 int n, arr[20], i, j, temp; // fixed variable declaration and removed extra comma
 printf("Enter number of elements of the array: ");
 scanf("%d", &n); // fixed format specifier for integer input

 for (i = 0; i < n; i++) {
  printf("Enter an element of the array: ");
  scanf("%d", &arr[i]); // fixed format specifier for integer input
 }

 for (i = 0; i < n - 1; i++) {
  for (j = 0; j < n - i - 1; ++j) { // fixed variable name and array size
   if (arr[j] > arr[j + 1]) {
    temp = arr[j];
    arr[j] = arr[j + 1];
    arr[j + 1] = temp;
   }
  }
 }

 printf("Array after implementing Bubble sort: ");
 for (i = 0; i < n; i++) {
  printf("%d ", arr[i]); // fixed format specifier for integer output and added space
 }
 printf("\n"); // added newline character

 return 0;
}
```



4)

```
#include <stdio.h>

int multiply(int number1, int number2); // function prototype for multiply function
int addition(int number1, int number2); // function prototype for addition function

int main() {
   int number1; // first number
   int number2; // second number
   int result_multiply;
   int result_addition;

   printf("Please enter first number: ");
   scanf("%d", &number1);

   printf("Please enter second number: ");
   scanf("%d", &number2);

   result_multiply = multiply(number1, number2);
   printf("Multiplication of the two numbers is %d\n", result_multiply);

   result_addition = addition(number1, number2);
```

```
    printf("Addition of the two numbers is %d\n", result_addition);

    return 0;
}

int multiply(int number1, int number2) {
    return number1 * number2;
}

int addition(int number1, int number2) {
    return number1 + number2;
}
```

```
Please enter first number: 3
Please enter second number: 4
Multiplication of the two numbers is 12
Addition of the two numbers is 7
```

5)

```
#include <stdio.h>

int main() {
    int arr[] = {1, 9, 2, 7, 6, 3, 5, 10, 4, 8};
    int n = sizeof(arr) / sizeof(arr[0]);

    for(int i = 0; i < n; i++) {
        while(arr[i] != i+1) {
            int temp = arr[arr[i]-1];
            arr[arr[i]-1] = arr[i];
            arr[i] = temp;
        }
    }

    printf("Rearranged array: ");
```

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

    return 0;
}
```