

4. Create a program in C to search for a substring within a larger string with a user defined function.

```
#include <stdio.h>

#include <string.h>

int substring_search(char *str, char *substr)
{
    int i, j, k;
    for (i = 0; str[i] != '\0'; i++)
    {
        if (str[i] == substr[0])
        {
            for (j = 1, k = i + 1; substr[j] != '\0' && str[k] != '\0'; j++, k++)
            {
                if (substr[j] != str[k])
                {
                    break;
                }
                if (substr[j] == '\0')
                {
                    return i;
                }
            }
        }
    }
    return -1;
}
```

```
int main()
{
    char str[100], substr[10];
    int index;

    printf("Enter the larger string: ");
    scanf("%s", str);

    printf("Enter the substring to search for: ");
    scanf("%s", substr);

    index = substring_search(str, substr);

    if (index != -1)
    {
        printf("The substring \"%s\" was found at index %d in the larger string\n\"%s\"\n", substr, index, str);
    }
    else
    {
        printf("The substring \"%s\" was not found in the larger string \"%s\"\n", substr, str);
    }

    return (0);
}
```