1. Write a program in C to input a string and print it.

Test Data :
Input the string : Welcome, w3resource

Expected Output :

```
The string you entered is : Welcome, w3resource
```

2. Write a program in C to find the length of a string without using library functions.

Test Data :
Input the string : w3resource.com

Expected Output :

```
Length of the string is : 15
```

3. Write a program in C to separate individual characters from a string.

Test Data :
Input the string : w3resource.com

Expected Output :

```
The characters of the string are :
w  3  r  e  s  o  u  r  c  e  .  c  o  m
```

4. Write a program in C to print individual characters of a string in reverse order.

Test Data :
Input the string : w3resource.com

Expected Output :

```
The characters of the string in reverse are :
m  o  c  .  e  c  r  u  o  s  e  r  3  w
```

5. Write a program in C to count the total number of words in a string.

Test Data :
Input the string : This is w3resource.com

Expected Output :

```
Total number of words in the string is : 3
```

6. Write a program in C to compare two strings without using string library functions.

Test Data :
Check the length of two strings:

Input the 1st string : aabbcc
Input the 2nd string : abcdef
String1: aabbcc
String2: abcdef
Expected Output : Strings are not equal.

Check the length of two strings:

Input the 1st string : aabbcc
Input the 2nd string : aabbcc
String1: aabbcc
String2: aabbcc
Expected Output : Strings are equal.

7. Write a program in C to count the total number of alphabets, digits and special characters in a string.

Test Data :
Input the string : Welcome to w3resource.com

Expected Output :

```
Number of Alphabets in the string is : 21
Number of Digits in the string is : 1
Number of Special characters in the string is : 4
```

8. Write a program in C to copy one string to another string.

Test Data :
Input the string : This is a string to be copied.

Expected Output :

```
The First string is : This is a string to be copied.
The Second string is : This is a string to be copied.
Number of characters copied : 31
```

9. Write a program in C to count the total number of vowels or consonants in a string.

Test Data :
Input the string : Welcome to w3resource.com

Expected Output :

```
The total number of vowel in the string is : 9
The total number of consonant in the string is : 12
```

10. Write a program in C to find the maximum number of characters in a string.

Test Data :
Input the string : Welcome to w3resource.com.

Expected Output :

```
The Highest frequency of character 'e'
appears number of times : 4
```

11. Write a C program to sort a string array in ascending order.

Test Data :
Input the string : w3resource

Expected Output :

```
After sorting the string appears like :
3ceeorrsuw
```

12. Write a program in C to read a string from the keyboard and sort it using bubble sort.

Test Data :
Input number of strings :3
Input string 3 :
zero
one
two

Expected Output :

```
The strings appears after sorting :
one
two
zero
```

13. Write a program in C to extract a substring from a given string.

Test Data :
Input the string : this is test string
Input the position to start extraction :9
Input the length of substring :4

Expected Output :

```
The substring retrieve from the string is : " test "
```

14. Write a C program to check whether a substring is present in a string.

Test Data :
Input the string : This is a test string.
Input the substring to be search : search

Expected Output :

```
The substring is not exists in the string.
```

15. Write a program in C to read a sentence and replace lowercase characters with uppercase and vice versa.

Test Data :
Input the string : This Is A Test String.

Expected Output :

```
The given sentence is   : This Is A Test String.
After Case changed the string  is: tHIS iS a tEST sTRING.
```

16. Write a program in C to find the number of times a given word 'the' appears in the given string.

Test Data :
Input the string : The string where the word the present more than once.

Expected Output :

```
The frequency of the word 'the' is : 3
```

17. Write a program in C to remove characters from a string except alphabets.

Test Data :
Input the string : w3resource.com

Expected Output :

```
After removing the Output String : wresourcecom
```

18. Write a program in C to find the frequency of characters.

Test Data :
Input the string : This is a test string
Input the character to find frequency: i

Expected Output :

```
The frequency of 'i' is : 3
```

19. Write a program in C to combine two strings manually.

Test Data :
Input the first string : this is string one
Input the second string : this is string two

Expected Output :

```
After concatenation the string is :
this is string one this is string two
```

20. Write a program in C to find the largest and smallest words in a string.

Test Data :
Input the string : It is a string with smallest and largest word.

Expected Output :

```
The largest word is 'smallest'
and the smallest word is 'a'
in the string : 'It is a string with smallest and largest word.'.
```

21. Write a program in C to convert a string to uppercase.

Test Data :
Input a string in lowercase : the quick brown fox jumps over the lazy dog

Expected Output :

```
Here is the above string in UPPERCASE :
 THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.
```

22. Write a program in C to convert a string to lowercase.

Test Data :
Input a string in UPPERCASE : THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.

Expected Output :

```
Here is the above string in lowercase :
the quick brown fox jumps over the lazy dog.
```

23. Write a program in C to check whether a character is a Hexadecimal Digit or not.

Test Data :
Input a character : 7

Expected Output :

```
The entered character is a hexadecimal digit.
```

24. Write a program in C to check whether a letter is uppercase or not.

Test Data :
Input a character : p

Expected Output :

```
The entered letter is not an UPPERCASE letter.
```

25. Write a program in C to replace the spaces in a string with a specific character.

Test Data :
Input a string : Be glad to see the back of Input replace character : *

Expected Output :

```
After replacing the space with  * the new string is :
Be*glad*to*see*the*back*of*
```

26. Write a program in C to count the number of punctuation characters present in a string.

Test Data :
Input a string : The quick brown fox, jumps over the, lazy dog.

Expected Output :

```
The punctuation characters exists in the string is : 3
```

27. Write a program in C to print only the string before the new line character.

Note: isprint() will only print line one, because the newline character is not printable.

Expected Output :

```
The quick brown fox
```

28. Write a program in C to check whether a letter is lowercase or not.

Test Data :
Input a character : w

Expected Output :

```
The entered letter is a lowercase letter.
```

29. Write a program in C to read a file and remove the spaces between two words of its content.

Expected Output :

```
The content of the file is :
The quick brown fox jumps over the lazy dog
After removing the spaces the content is :
Thequickbrownfoxjumpsoverthelazydog
```

30. Write a program in C to check whether a character is a digit or not.

Test Data :
Input a character : 8

Expected Output :

```
The entered character is a digit.
```

31. Write a program in C to split strings by space into words.

Test Data :
Input a string : this is a test string

Expected Output :

```
Strings or words after split by space are :

this
is
a
test
string .
```

32. Write a C program to find the repeated character in a string.

Test Data :
Input a string: w3resource

Expected Output:

```
Input a string: The first repetitive character in w3resource is: r
```

33. Write a C program to count each character in a given string.

Test Data :
Input a string: w3resource

Expected Output:

```
Enter a str1ing: The count of each character in the string w3resource is
w       1
3       1
r       2
e       2
s       1
o       1
u       1
c       1
```

34. Write a C program to convert vowels into uppercase characters in a string.

Test Data :
Input a string : w3resource

Expected Output:

```
Input a sentence: The original string:
w3resource
After converting vowels into upper case the sentence becomes:
w3rEsOUrcE
```

35. Write a C program to find the length of the longest substring of a given string without repeating characters.

Test Data :
Input a string: “abcddefffd”

Expected Output:

```
Input a string: Length of the longest substring without repeating characters:
4
```

36. A given string contains the bracket characters '(', ')', '{', '}', '<', ‘>', '[' and ']', Write a C program to check if the string is valid or not. The input string will be valid when open brackets and closed brackets are same type of brackets.

Test Data :
Input a string: <>()[]{}

Expected Output:

```
Check bracket in the said string is valid or not? 1
```

37. Write a C program to multiply two positive numbers as strings. Return a string representation of the product.

Expected Output:

```
Original numbers: 100 and 15
Multiple two said numbers represent as string? 1500
```

38. Write a C program to reverse all the vowels present in a given string. Return the newly created string.

Test Data :
Input a string: “AEIou”

Expected Output:

```
Input a string: Check bracket in the said string is valid or not? "uoIEA"
```

39. Write a C program to find the longest palindromic substring from a given string. Return the substring.

Expected Output:

```
Original string: abcdcsdfabbccb
Longest Palindromic Substring from the said string? bccb
```

40. Write a C program to replace each lowercase letter with the same uppercase letter of a given string. Return the newly created string.

Sample Data:
("Python") -> "PYTHON"
("abcdcsd") -> "ABCDCSD"

41. Write a C program to calculate the length of the longest common subsequence of two given strings. The strings consist of alphabetical characters.

Sample Data:
("abcdkiou", "cabsdf") -> 3
("prjad", "qr") -> 2