ASSIGNMENT 5 (7.08.2025)

1. Find length of a string without using strlen()
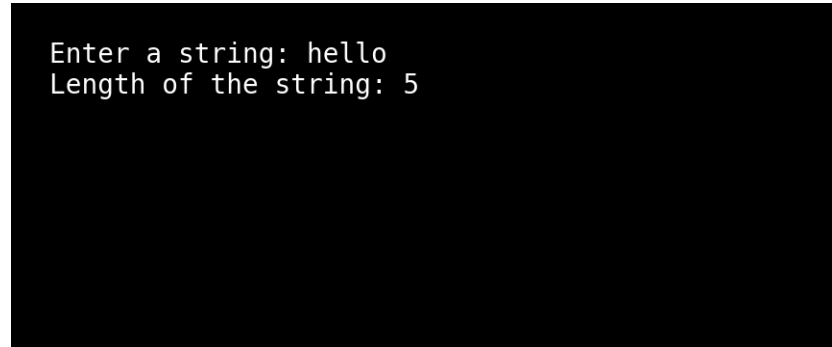
```c
#include <stdio.h>
void main()
{
    char str[100];
    int i, length = 0;

    printf("Enter a string: ");
    gets(str);

    for(i = 0; str[i] != '\0'; i++)
        length++;

    printf("Length of the string: %d\n", length);
}
```

Sample Output Screenshot:

```
Enter a string: hello
Length of the string: 5
```

2. Copy one string to another

```c
#include <stdio.h>
void main()
{
    char str1[100], str2[100];
    int i;

    printf("Enter a string: ");
    gets(str1);
```

```
    for(i = 0; str1[i] != '\0'; i++)
        str2[i] = str1[i];
    str2[i] = '\0';

    printf("Copied string: %s\n", str2);
}
```

Sample Output Screenshot:


```
Enter a string: hello
Copied string: hello
```

3. Concatenate two strings

```
#include <stdio.h>
void main()
{
    char str1[100], str2[100];
    int i, j;

    printf("Enter first string: ");
    gets(str1);
    printf("Enter second string: ");
    gets(str2);

    for(i = 0; str1[i] != '\0'; i++);
    for(j = 0; str2[j] != '\0'; j++, i++)
        str1[i] = str2[j];
    str1[i] = '\0';

    printf("Concatenated string: %s\n", str1);
}
```

Sample Output Screenshot:

```
 Enter first string: hello
 Enter second string: world
 Concatenated string: helloworld
```

Compare two strings
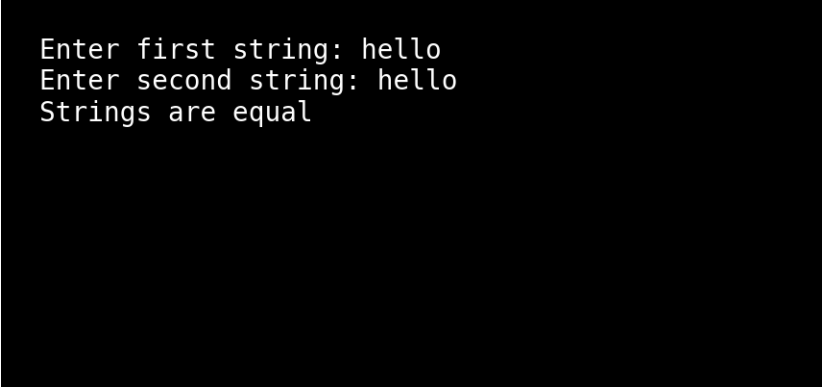
```c
#include <stdio.h>
void main()
{
    char str1[100], str2[100];
    int i, flag = 0;

    printf("Enter first string: ");
    gets(str1);
    printf("Enter second string: ");
    gets(str2);

    for(i = 0; str1[i] != '\0' || str2[i] != '\0'; i++)
    {
        if(str1[i] != str2[i])
        {
            flag = 1;
            break;
        }
    }

    if(flag == 0)
        printf("Strings are equal\n");
    else
        printf("Strings are not equal\n");
}
```

Sample Output Screenshot:

```
Enter first string: hello
Enter second string: hello
Strings are equal
```

4. Count vowels and consonants in a string

```c
#include <stdio.h>
void main()
{
    char str[100];
    int i, vowels = 0, consonants = 0;

    printf("Enter a string: ");
    gets(str);

    for(i = 0; str[i] != '\0'; i++)
    {
        if((str[i] >= 'a' && str[i] <= 'z') || (str[i] >= 'A' && str[i] <= 'Z'))
        {
            char ch = (str[i] >= 'A' && str[i] <= 'Z') ? str[i] + 32 : str[i];
            if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u')
                vowels++;
            else
                consonants++;
        }
    }

    printf("Vowels: %d\nConsonants: %d\n", vowels, consonants);
}
```

Sample Output Screenshot:

```
Enter a string: Hello World
Vowels: 3
Consonants: 7
```

5. Convert lowercase to uppercase and vice versa

```c
#include <stdio.h>
void main()
{
   char str[100];
   int i;

   printf("Enter a string: ");
   gets(str);

   for(i = 0; str[i] != '\0'; i++)
   {
     if(str[i] >= 'a' && str[i] <= 'z')
        str[i] -= 32;
     else if(str[i] >= 'A' && str[i] <= 'Z')
        str[i] += 32;
   }

   printf("Toggled case string: %s\n", str);
}
```

Sample Output Screenshot:

```
Enter a string: Hello World
Toggled case string: hELLO wORLD
```

6. Check if a string is palindrome

```c
#include <stdio.h>
void main()
{
    char str[100];
    int i, length = 0, flag = 0;

    printf("Enter a string: ");
    gets(str);

    for(i = 0; str[i] != '\0'; i++)
        length++;

    for(i = 0; i < length / 2; i++)
    {
        if(str[i] != str[length - i - 1])
        {
            flag = 1;
            break;
        }
    }

    if(flag == 0)
        printf("String is palindrome\n");
    else
        printf("String is not palindrome\n");
}
```
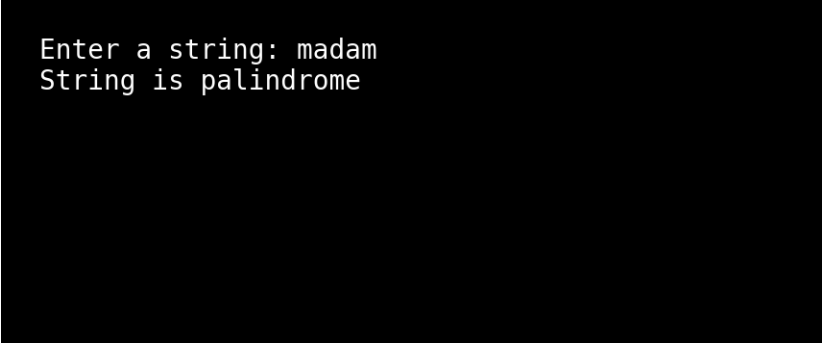
Sample Output Screenshot:

```
Enter a string: madam
String is palindrome
```

7. Reverse a string

```c
#include <stdio.h>
void main()
{
    char str[100], rev[100];
    int i, j, length = 0;

    printf("Enter a string: ");
    gets(str);

    for(i = 0; str[i] != '\0'; i++)
        length++;

    for(i = length - 1, j = 0; i >= 0; i--, j++)
        rev[j] = str[i];
    rev[j] = '\0';

    printf("Reversed string: %s\n", rev);
}
```

Sample Output Screenshot:

```
Enter a string: hello
Reversed string: olleh
```

8. Count words in a string
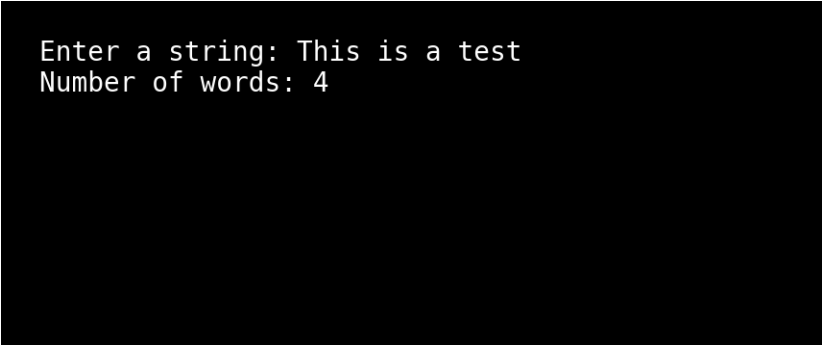
```c
#include <stdio.h>
void main()
{
    char str[200];
    int i, words = 1;

    printf("Enter a string: ");
    gets(str);

    for(i = 0; str[i] != '\0'; i++)
    {
        if(str[i] == ' ' && str[i+1] != ' ' && str[i+1] != '\0')
            words++;
    }

    printf("Number of words: %d\n", words);
}
```

Sample Output Screenshot:

```
Enter a string: This is a test
Number of words: 4
```

9. Find the frequency of each character in a string

```c
#include <stdio.h>
void main()
{
    char str[200];
    int freq[256] = {0}, i;

    printf("Enter a string: ");
    gets(str);
```
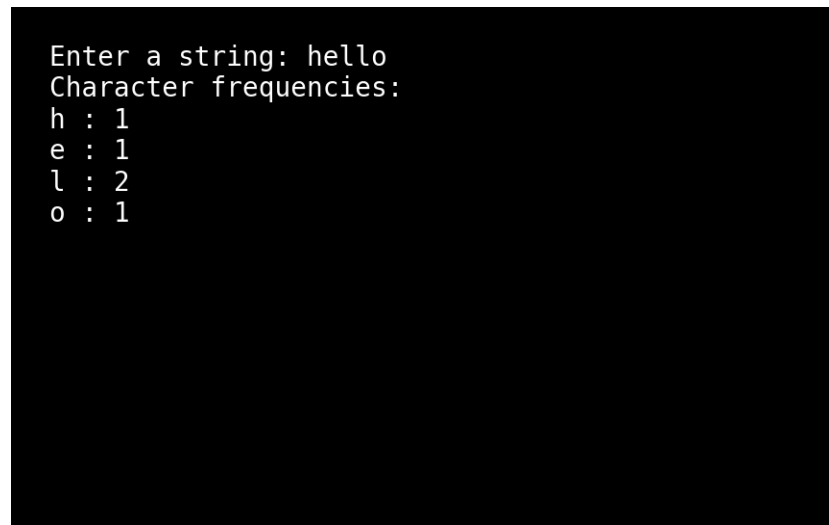
```c
    for(i = 0; str[i] != '\0'; i++)
        freq[(unsigned char)str[i]]++;

    printf("Character frequencies:\n");
    for(i = 0; i < 256; i++)
    {
        if(freq[i] != 0)
            printf("%c : %d\n", i, freq[i]);
    }
}
```

Sample Output Screenshot:

```
Enter a string: hello
Character frequencies:
h : 1
e : 1
l : 2
o : 1
```

10. Write a program to compare two strings

```c
#include <stdio.h>
void main()
{
    char str1[100], str2[100];
    int i, flag = 0;
    printf("Enter first string: ");
    gets(str1);
    printf("Enter second string: ");
    gets(str2);

    for(i = 0; str1[i] != '\0' || str2[i] != '\0'; i++)
    {
        if(str1[i] != str2[i])
        {
            flag = 1;
            break;
        }
    }

    if(flag == 0)
        printf("Strings are equal\n");
    else
        printf("Strings are not equal\n");
}
```

```
Enter first string: hello
Enter second string: hello
Strings are equal
```