



LAB REPORT

CSE312: Database Management System Lab

02

Topic: Solving String Problem Using C.

Submitted To

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Experiment No: 02		Mapping: CO1 and CO2
Experiment Name	Solving String Problem Using C	

Experiment Details:

Problem 01: Write a program that will **count vowel, consonant, and digit** from a given string .

Solution:

```
#include <stdio.h>
#include <string.h>
#include <ctype.h>
int main(){
    char s[200];
    gets(s);
    int cnt_d = 0, cnt_v = 0, cnt_c = 0;
    for(int i = 0; s[i] != '\0'; i++){
        s[i] = tolower(s[i]);
        if(s[i] >= '0' && s[i] <= '9')
            cnt_d++;
        else if(s[i] >= 'a' && s[i] <= 'z'){
            if (s[i] == 'a' || s[i] == 'e' || s[i] == 'i' ||
s[i] == 'o' || s[i] == 'u')
                cnt_v++;
            else
                cnt_c++;
        }
    }
    printf("Digits: %d\n", cnt_d);
    printf("Vowels: %d\n", cnt_v);
    printf("Consonant: %d\n", cnt_c );
}
```

Problem 02: Write **two** C program that will **tokenize a string**. (using strtok() and also without using any library function)

Solution (using strtok()):

```
#include <stdio.h>
#include <string.h>
int main() {
    char s[100], *token;
    printf("Enter a string: ");
    gets(s);

    token = strtok(s, " \n");
    while (token != NULL) {
        printf("%s\n", token);
        token = strtok(NULL, " \n");
    }

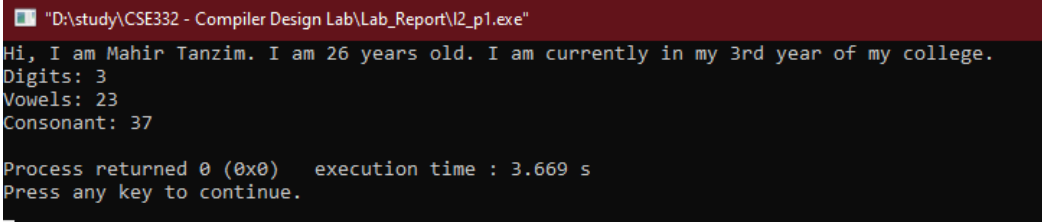

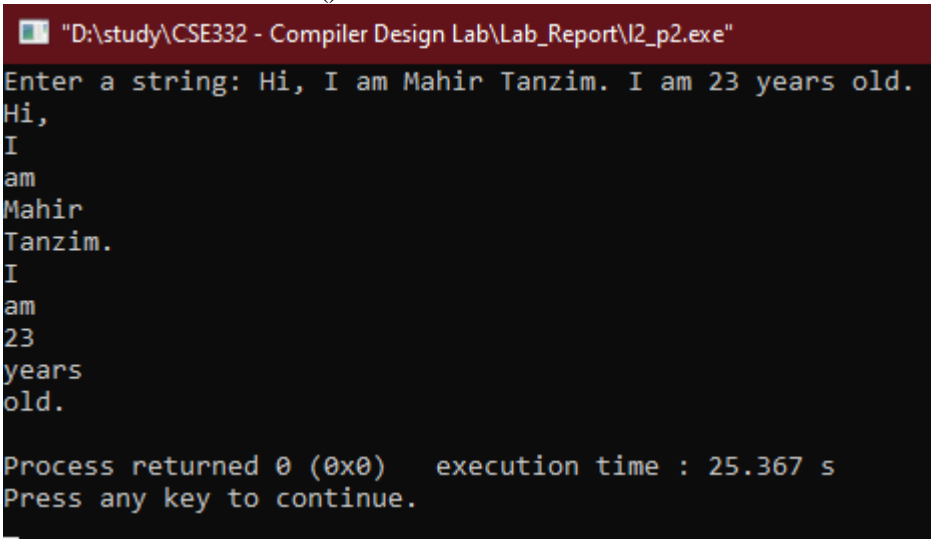
    return 0;
}
```

Solution (without strtok()) :

```
#include <stdio.h>
int main() {
    char s[100];
    printf("Enter a string: ");
    gets(s);
    int i = 0, start = 0;
    while (s[i] != '\0') {
        if (s[i] == ' ' || s[i] == '\n') {
            s[i] = '\0';
            printf("%s\n", &s[start]);
            start = i + 1;
        }
        i++;
    }
}
```

```
    if (start < i) {  
        printf("%s\n", &s[start]);  
    }  
    return 0;  
}
```

Obtained Output:

<p>Problem 01:</p>  <p>Problem 02: Using strtok()</p>  <p>Problem 03: without strtok()</p> 	<p>Desired Output?</p> <p>YES</p>
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Alternative Steps/Solution (If any):

- Instead of using **strtok()** , we can manually traverse the string and extract words using a separate buffer.
- Using **sscanf()** for tokenization can be an alternative method.
- Implementing a dynamic approach with **malloc()** can handle variable-length strings efficiently.

Observation/ Comments:

Both methods successfully tokenize the string. **strtok()** provides an easier implementation, but it modifies the original string. The manual approach gives more control but requires careful string manipulation. Using **sscanf()** or a buffer-based approach can offer additional flexibility.