



**Daffodil**  
*International*  
**University**

# LAB REPORT

Report No: 03

Course Code: CSE332

Course Title: Compiler Design Lab

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1. Problem Statement: Write a C program that will remove white space from a string.

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

void remove_whitespace(char *str) {
    int i, j = 0;
    int length = strlen(str);

    for (i = 0; i < length; i++) {
        if (str[i] != ' ' && str[i] != '\t' && str[i] != '\n') {
            str[j++] = str[i];
        }
    }
    str[j] = '\0';
}
```

```
int main() {
    char str[100];

    printf("Enter the identifier input string:\n");
    fgets(str, sizeof(str), stdin);
    str[strcspn(str, "\n")] = '\0';

    remove_whitespace(str);

    printf("Output:\n%s\n", str);

    return 0;
}
```

- sakibnjr@fedora > ~/Desktop/compiler/lab3 > cd "/home/sakibnjr/Desktop/olve1  
Enter the identifier input string:  
Abcd xyz pqrs Hiiiiiii  
Output:  
AbcdxyzpqrsHiiiiiii
- sakibnjr@fedora > ~/Desktop/compiler/lab3 > □

2. Problem Statement: Write a C program that will count vowel, consonant and digit of a given string.

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

```

void count_vowels_consonants_digits(const char *str, int *vowels, int
*consonants, int *digits) {
    *vowels = *consonants = *digits = 0;

    for (int i = 0; str[i] != '\0'; i++) {
        char ch = tolower(str[i]);

        if (ch >= 'a' && ch <= 'z') {
            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
                (*vowels)++;
            } else {
                (*consonants)++;
            }
        } else if (isdigit(ch)) {
            (*digits)++;
        }
    }
}

int main() {
    char str[100];
    int vowels, consonants, digits;

    printf("Enter input string:\n");
    fgets(str, sizeof(str), stdin);

    str[strcspn(str, "\n")] = '\0';

    count_vowels_consonants_digits(str, &vowels, &consonants, &digits);

    printf("Output:\n");
    printf("No of vowels: %d\n", vowels);
    printf("No of consonants: %d\n", consonants);
    printf("No of digits: %d\n", digits);

    return 0;
}

```

- sakibnjr@fedora
~/Desktop/compiler/lab3
cd "/home/sakibnjr/Desktop/olve2  
Enter input string:  
Daffodil Batch 60  
Output:  
No of vowels: 4  
No of consonants: 9  
No of digits: 2

3. Problem Statement: Write a C program that will tokenize a string without using strtok() library function.

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

void tokenize_string(const char *str) {
    int i = 0, j = 0;
    char token[100];

    while (str[i] != '\0') {

        while (str[i] != '\0' && isspace(str[i])) {
            i++;
        }

        if (str[i] == '\0') {
            break;
        }

        j = 0;
        while (str[i] != '\0' && !isspace(str[i])) {
            token[j++] = str[i++];
        }

        token[j] = '\0';

        printf("%s\n", token);
    }
}

int main() {
    char str[100];

    printf("Enter the Identifier input string:\n");
    fgets(str, sizeof(str), stdin);

    str[strcspn(str, "\n")] = '\0';

    printf("Output:\n");
    tokenize_string(str);

    return 0;
}
```

- sakibnjr@fedora ~/Desktop/compiler/lab3 cd "/home/sakibnjr/Desktop/olve3  
Enter the Identifier input string:  
These are few words  
Output:  
These  
are  
few  
words
- sakibnjr@fedora ~/Desktop/compiler/lab3

4. Problem Statement: Write a C program that will tokenize a string using strtok() library function.

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

int main() {
    char str[100];

    printf("Enter the Identifier input string:\n");
    fgets(str, sizeof(str), stdin);

    str[strcspn(str, "\n")] = '\0';

    char *token = strtok(str, " ");
    printf("Output:\n");
    while (token != NULL) {
        printf("%s\n", token);
        token = strtok(NULL, " ");
    }

    return 0;
}
```

- sakibnjr@fedora ~/Desktop/compiler/lab3 cd "/home/sakibnjr/Desktop/olve4  
Enter the Identifier input string:  
These are fews words  
Output:  
These  
are  
fews  
words
- sakibnjr@fedora ~/Desktop/compiler/lab3