LAB REPORT

Report No: 02

Course Code: CSE332

Course Title: Compiler Design Lab

Submitted By:

Md. Najmus Sakib Nahid
ID : 213-15-4575
Section : 60_A2
Dept. of CSE
Daffodil International
University

Submitted To:

Ms. Fatama Jannat Tisha
Lecturer
Dept. of CSE
Daffodil International
University

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1. Problem Statement: Write a C\C++ Program that accepts a+.

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

int matches_a_plus(const char *str) {
    if (str == NULL || *str == '\0') {
        return 0;
    }
}
#include <stdio.h>
#include <string.h>

int matches_a_plus(const char *str) {
    if (str == NULL || *str == '\0') {
        return 0;
    }

    while (*str) {
        if (*str != 'a') {
            return 0;
        }
        str++;
    }

    return 1;
}

int main() {
    char input[100];

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

    printf("Input: %s\n", input);
    if (matches_a_plus(input)) {
        printf("Output: Accepted\n");
    } else {
        printf("Output: Rejected\n");
    }

    return 0;
}
    while (*str) {
        if (*str != 'a') {
            return 0;
        }
        str++;
    }
```

```c
        return 1;
}

int main() {
    char input[100];

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

    printf("Input: %s\n", input);
    if (matches_a_plus(input)) {
        printf("Output: Accepted\n");
    } else {
        printf("Output: Rejected\n");
    }

    return 0;
}
```

sakibnjr@fedora ~/Desktop/compiler cd "/home/sakibn
e1
Enter the input string: aaaa
Input: aaaa
Output: Accepted
sakibnjr@fedora ~/Desktop/compiler/lab 2 cd "/home/
/"solve1
Enter the input string: aaab
Input: aaab
Output: Rejected
sakibnjr@fedora ~/Desktop/compiler/lab 2 ☐

2. Problem Statement: Write a C\C++ Program that accepts a*b.

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

int matches_a_star_b(const char *str) {
    int i = 0;
    while (str[i] == 'a') {
        i++;
    }
    if (str[i] == 'b' && str[i + 1] == '\0') {
```

```c
        return 1;
    }
    return 0;
}

int main() {
    char input[100];

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

    printf("Input: %s\n", input);
    if (matches_a_star_b(input)) {
        printf("Output: Accepted\n");
    } else {
        printf("Output: Rejected\n");
    }
    return 0;
}
```

● ⬤ sakibnjr@fedora ⟩ ~/Desktop/compiler/lab 2 ⟩ cd "/home/s
/"solve2
Enter the input string: b
Input: b
Output: Accepted
● ⬤ sakibnjr@fedora ⟩ ~/Desktop/compiler/lab 2 ⟩ cd "/home/s
/"solve2
Enter the input string: aaabb
Input: aaabb
Output: Rejected
○ sakibnjr@fedora ⟩ ~/Desktop/compiler/lab 2 ⟩ ▯

3. Problem Statement: Write a C\C++ Program that accepts a*b (read input from file).

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

bool match_a_star_b(const char *str) {
    int i = 0;
    while (str[i] == 'a') {
        i++;
```

```c
    }

    if (str[i] == 'b' && str[i + 1] == '\0') {
        return true;
    } else {
        return false;
    }
}

int main() {
    FILE *file = fopen("input.txt", "r");
    if (file == NULL) {
        printf("Error opening file.\n");
        return 1;
    }

    char str[100];
    while (fgets(str, sizeof(str), file) != NULL) {

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

        char *start = str;
        while (*start == ' ') start++;
        char *end = start + strlen(start) - 1;
        while (end > start && *end == ' ') end--;
        *(end + 1) = '\0';

        if (match_a_star_b(start)) {
            printf("Accepted\n");
        } else {
            printf("Rejected\n");
        }
    }

    fclose(file);
    return 0;
}
```

```
1   b
2   aaaab
3   aabb
4   
```