Assignment - 02

```c
// C program to implement DFS that accepts all string that contains 10
#include <stdio.h>
#include <string.h>

int dfa = 0;

void state0(char c)
{
    if (c == '1')
    {
        dfa = 1;
    }
    else if (c == '0')
    {
        dfa = 0;
    }
    else {
        dfa = -1;
    }
}

void state1(char c)
{
    if (c == '1') {
        dfa = 1;
    }
    else if (c == '0') {
        dfa = 2;
    }
    else {
        dfa = -1;
    }
}

void state2(char c)
{
    if (c == '1' || c == '0') {
        dfa = 2;
    }
    else {
        dfa = -1;
    }
}

int isAccepted(char str[])
{
    int i, len = strlen(str);
```

```c
    for (i = 0; i < len; i++) {
        if (dfa == 0)
            state0(str[i]);

        else if (dfa == 1)
            state1(str[i]);

        else if (dfa == 2)
            state2(str[i]);
        else
            return 0;
    }
    if (dfa == 2)
        return 1;
    else
        return 0;
}

int main()
{
    int t;
    printf("Enter the number of testcases: ");
    scanf("%d", &t);
    while(t--){
        char str[20];
        printf("Enter a String: \n");
        scanf("%s", str);
        if (isAccepted(str))
            printf("ACCEPTED\n");
        else
            printf("NOT ACCEPTED\n");
    }
    return 0;
}
```
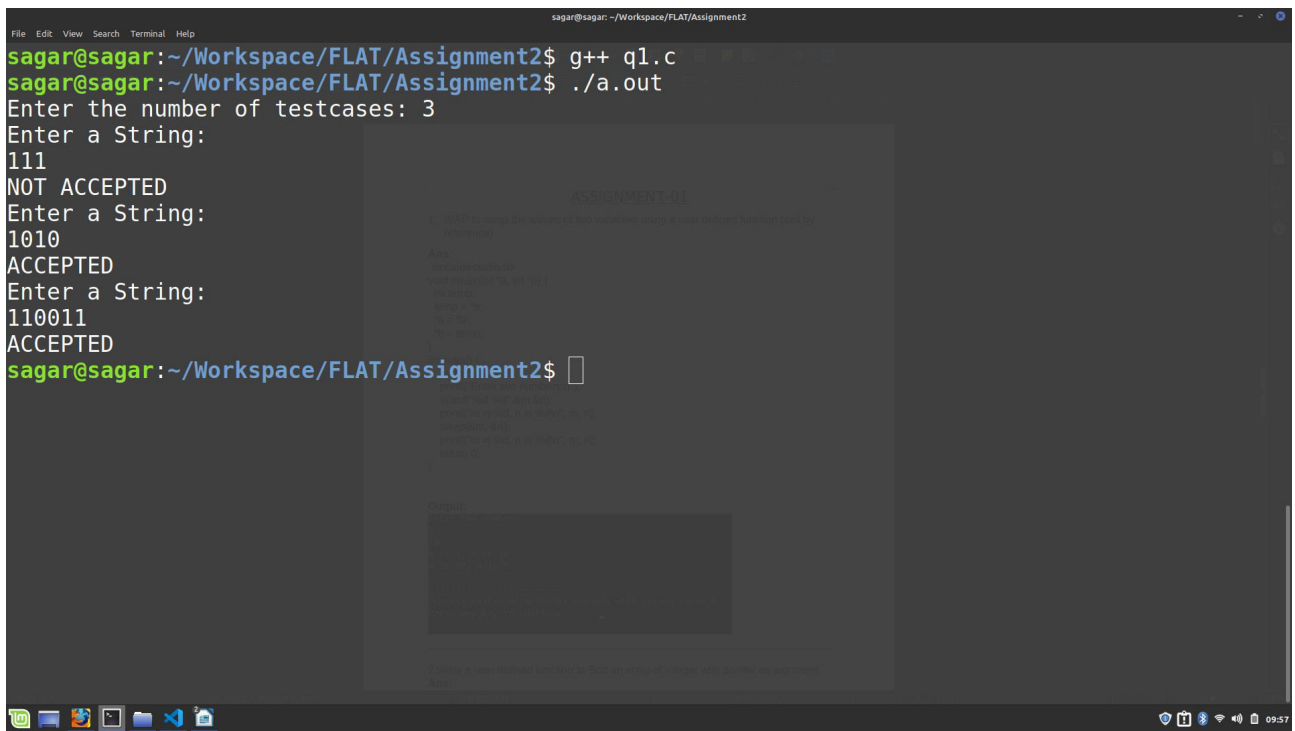
```
sagar@sagar: ~/Workspace/FLAT/Assignment2
File   Edit   View   Search   Terminal   Help
sagar@sagar:~/Workspace/FLAT/Assignment2$ g++ q1.c
sagar@sagar:~/Workspace/FLAT/Assignment2$ ./a.out
Enter the number of testcases: 3
Enter a String:
111
NOT ACCEPTED
Enter a String:
1010
ACCEPTED
Enter a String:
110011
ACCEPTED
sagar@sagar:~/Workspace/FLAT/Assignment2$ 
```

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