Flat Assignment 2

Q1.WAP in C construct a DFA over input alphabets {a,b} accepting all strings starting with and ending with 'a'.

Start here | *Untitled1 | nano.c | *stratandend.c | nottogather.c | final.c | *StringStartedWithA.c | startingwitha

```c
/*Akash Kumar
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*/
#include<stdio.h>
#include<string.h>
int validation(char s[],int n){
for(int i=0;i<n;i++){
    if(s[i]!='a' && s[i]!='b')
        return 0;
}
return 1;
}
main(){
    char s[20];
    printf("Enter the string:");
    scanf("%s",&s);
    int n=strlen(s);
    if(validation(s,n)==0){
        printf("Not Valid");
        return;
    }
    else{
        printf("valid and ");
    }
    if(s[n-1]=='a'&& s[0]=='a')
        printf("Accepted!");
    else
        printf("Not Accepted!");
        }
```

```
D:\Codding Set Ups\Programs\Flat Codes>gcc stratandend.c

D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:a
Accepted!
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:ab
Not Accepted!
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:aba
Accepted!
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:aabb
Not Accepted!
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:abda
Not Valid
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:baadba
Not Valid
D:\Codding Set Ups\Programs\Flat Codes>
```

Q2.WAP in C to accept the string “nano” and will reject all other strings.

Start here | *Untitled1 | *nano.c | stratandend.c | nottogather.c | final.c | *StringStartedWithA.

```c

/*Akash Kumar 1801289021*/
#include<stdio.h>
int main()
{    char str[80], search[] = "nano";
    int count1 = 0, count2 = 0, i, j, flag;

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

    while (str[count1] != '\0')
        count1++;
    while (search[count2] != '\0')
        count2++;
    for (i = 0; i <= count1 - count2; i++)
    {
        for (j = i; j < i + count2; j++)
        {
            flag = 1;
            if (str[j] != search[j - i])
            {
                flag = 0;
                break;
            }
        }
        if (flag == 1)
            break;
    }
    if (flag == 1)
        printf("Accepted");
    else
        printf("Not Accepted");

    return 0;
}
```

```
D:\Codding Set Ups\Programs\Flat Codes>a
Enter a string:ababnanoab
Accepted
D:\Codding Set Ups\Programs\Flat Codes>a
Enter a string:ababdgs
Not Accepted
D:\Codding Set Ups\Programs\Flat Codes>a
Enter a string:abnan
Not Accepted
D:\Codding Set Ups\Programs\Flat Codes>nanoabasg
'nanoabasg' is not recognized as an internal or external command,
operable program or batch file.

D:\Codding Set Ups\Programs\Flat Codes>a
Enter a string:nanoabsag
Accepted
D:\Codding Set Ups\Programs\Flat Codes>a
Enter a string:asgasdg
Not Accepted
```

Q2.WAP in C for implementing DFA of Regular Expression(a+aa*b) *.This string can only start by 'a' and no two 'b' comes together.

```c
#include<stdio.h>
#include<string.h>
int validation(char s[],int n){
for(int i=0;i<n;i++){
    if(s[i]!='a' && s[i]!='b')
        return 0;
        }
return 1;
}
int  main(){
    char s[20];
    printf("Enter the string:");
    scanf("%s",&s);
    int n=strlen(s);
    if(validation(s,n)==0){
        printf("Not Valid");
        return 0;}
if(s[0]=='a'){
        for(int i=1;i<n-1;i++){
            if(s[i] == 'b'){

                if(s[i+1]=='b'){

                printf("rejected");
                return 0;

                 }
            }
        }
        printf("Accepted");

    }else{
    printf("rejected");
     }
}
```

```
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:aabab
Accepted
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:abababab
Accepted
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:ababba
rejected
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:abababac
Not Valid
D:\Codding Set Ups\Programs\Flat Codes>a
Enter the string:bbaba
rejected
```

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