

# 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 X *Untitled1 X nano.c X *stratandend.c X nottogather.c X final.c X *StringStartedWithA.c X startingwitha
1  /*Akash Kumar
2     1801289021
3  */
4  #include<stdio.h>
5  #include<string.h>
6  int validation(char s[],int n){
7  for(int i=0;i<n;i++){
8      if(s[i]!='a' && s[i]!='b')
9          return 0;
10 }
11 return 1;
12 }
13 main(){
14     char s[20];
15     printf("Enter the string:");
16     scanf("%s",&s);
17     int n=strlen(s);
18     if(validation(s,n)==0){
19         printf("Not Valid");
20         return;
21     }
22     else{
23         printf("valid and ");
24     }
25     if(s[n-1]=='a'&& s[0]=='a')
26         printf("Accepted!");
27     else
28         printf("Not Accepted!");
29 }
30
```

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

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

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

```
Start here X *Untitled1 X *nano.c X stratandend.c X nottogather.c X final.c X *StringStartedWithA.
1
2 /*Akash Kumar 1801289021*/
3 #include<stdio.h>
4 int main()
5 { char str[80], search[] = "nano";
6   int count1 = 0, count2 = 0, i, j, flag;
7
8   printf("Enter a string:");
9   gets(str);
10
11   while (str[count1] != '\0')
12     count1++;
13   while (search[count2] != '\0')
14     count2++;
15   for (i = 0; i <= count1 - count2; i++)
16   {
17     for (j = i; j < i + count2; j++)
18     {
19       flag = 1;
20       if (str[j] != search[j - i])
21       {
22         flag = 0;
23         break;
24       }
25     }
26     if (flag == 1)
27       break;
28   }
29   if (flag == 1)
30     printf("Accepted");
31   else
32     printf("Not Accepted");
33
34   return 0;
35 }
```

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

```
1  #include<stdio.h>
2  #include<string.h>
3  int validation(char s[],int n){
4  for(int i=0;i<n;i++){
5      if(s[i]!='a' && s[i]!='b')
6          return 0;
7      }
8  return 1;
9  }
10 int main(){
11     char s[20];
12     printf("Enter the string:");
13     scanf("%s",&s);
14     int n=strlen(s);
15     if(validation(s,n)==0){
16         printf("Not Valid");
17         return 0;}
18     if(s[0]=='a'){
19         for(int i=1;i<n-1;i++){
20             if(s[i] == 'b'){
21
22                 if(s[i+1]=='b'){
23
24                     printf("rejected");
25                     return 0;
26
27                 }
28             }
29         }
30         printf("Accepted");
31     }else{
32         printf("rejected");
33     }
34 }
35 }
```

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

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