

# Flat Assignment 1

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

```
/*Akash Kumar  
1801289021  
*/  
  
#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;  
}  
  
if(s[0]=='a')  
printf("Accepted!");  
else  
printf("Not Accepted!");  
}
```

```
D:\Coddig Set Ups\Programs\30 days Of Compatative Programming\Day 3>a  
Enter the string:aabab  
Accepted!  
D:\Coddig Set Ups\Programs\30 days Of Compatative Programming\Day 3>a  
Enter the string:abc  
Not Valid  
D:\Coddig Set Ups\Programs\30 days Of Compatative Programming\Day 3>a  
Enter the string:baab  
Not Accepted!  
D:\Coddig Set Ups\Programs\30 days Of Compatative Programming\Day 3>
```

**Q2.WAP in C construct a DFA over input alphabets {a,b} accepting all strings ending with 'a'.**

```
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 }
12 return 1;
13
14 }
15
16 }
17 main(){
18     char s[20];
19     printf("Enter the string:");
20     scanf("%s",&s);
21     int n=strlen(s);
22     if(validation(s,n)==0){
23         printf("Not Valid");
24         return;
25     }
26
27     if(s[n-1]=='a')
28         printf("Accepted!");
29     else
30         printf("Not Accepted!");
31 }
32
33
34
```

```
D:\Coddling Set Ups\Programs\Flat Codes>a
Enter the string:ababa
Accepted!
D:\Coddling Set Ups\Programs\Flat Codes>a
Enter the string:aabb
Not Accepted!
D:\Coddling Set Ups\Programs\Flat Codes>a
Enter the string:ababca
Not Valid
D:\Coddling Set Ups\Programs\Flat Codes>a
Enter the string:bbaba
Accepted!
D:\Coddling Set Ups\Programs\Flat Codes>a
Enter the string:baaaa
Accepted!
D:\Coddling Set Ups\Programs\Flat Codes>
```

**Q3.WAP in C construct a DFA over input alphabets {a,b} accepting all strings starting with 'aa'.**

```
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
14 main(){
15     char s[20];
16     printf("Enter the string:");
17     scanf("%s",&s);
18     int n=strlen(s);
19     if(validation(s,n)==0){
20         printf("Not Valid");
21         return;
22     }
23
24     if(s[0]=='a' && s[1]=='a')
25         printf("Accepted!");
26     else
27         printf("Not Accepted!");
28 }
29
30
```

```
D:\Coding Set Ups\Programs\Flat Codes>a
Enter the string:a
Not Accepted!
D:\Coding Set Ups\Programs\Flat Codes>a
Enter the string:aa
Accepted!
D:\Coding Set Ups\Programs\Flat Codes>a
Enter the string:ab
Not Accepted!
D:\Coding Set Ups\Programs\Flat Codes>aabb
'aabb' is not recognized as an internal or external command,
operable program or batch file.
D:\Coding Set Ups\Programs\Flat Codes>a
Enter the string:aabb
Accepted!
D:\Coding Set Ups\Programs\Flat Codes>a
Enter the string:bba
Not Accepted!
D:\Coding Set Ups\Programs\Flat Codes>a
Enter the string:abas
Not Valid
```

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