

Exp9 : ϵ -Closure

1. Start
2. Read no of transitions of e-NFA in n
3. Enter the transitions in a[10][10]
4. m = 0
5. read the state whose eclosure is to be found in c
6. eclosure(c)
7. print f

8. eclosure (c)
 1. for i=0 to n do
 1. if (a[i][0] = c & a[i][1] = e) then
f[m] = a[i][2]
m++
eclosure (a[i][2])
9. Stop

ϵ -closure of ϵ NFA (C)

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

```
int n,m = 0;
char a[10][10],f[10];
```

```
void eclosure(char c) {
    int i;
    for(i=0;i<n;i++) {
        if(a[i][0]==c && a[i][1]=='e'){
            f[m] = a[i][2];
            m++;
            eclosure(a[i][2]);
        }
    }
}
```

```
int main() {
    int i,z;
    char c,ch;
    printf("Enter the no of transitions = ");
    scanf("%d", &n);

    printf("Enter the transitions\n");
    for(i=0;i<n;i++) {
        scanf("%s%c",a[i],&ch);
    }

    do{
        m = 0;
        printf("Enter the state whose e-closure to be found : ");
        scanf("%c",&c);
```

```

printf("e-closure(%c) = { %c ",c,c);
eclosure(c);
for(i=0;i<m;i++) {
    printf("%c ",f[i]);
}
printf("}\n");
strcpy(f, " ");

printf("Continue(0/1) = ");
scanf("%d%c", &z, &ch);
}while(z==1);

return 0;
}

```

output

```

● deadpool@daredevil:~/Desktop/s7-CD/4 ε-closure of εNFA$ gcc eclosure.c
● deadpool@daredevil:~/Desktop/s7-CD/4 ε-closure of εNFA$ ./a.out
Enter the no of transitions = 5
Enter the transitions
101
1e2
212
2e3
303
Enter the state whose e-closure to be found : 1
e-closure(1) = { 1 2 3 }
Continue(0/1) = 1
Enter the state whose e-closure to be found : 2
e-closure(2) = { 2 3 }
Continue(0/1) = 1
Enter the state whose e-closure to be found : 3
e-closure(3) = { 3 }
Continue(0/1) = 0
● deadpool@daredevil:~/Desktop/s7-CD/4 ε-closure of εNFA$ ./a.out
Enter the no of transitions = 5
Enter the transitions
1e2
2e3
3e4
405
513
Enter the state whose e-closure to be found : 1
e-closure(1) = { 1 2 3 4 }
Continue(0/1) = 1
Enter the state whose e-closure to be found : 4
e-closure(4) = { 4 }
Continue(0/1) = 1
Enter the state whose e-closure to be found : 2
e-closure(2) = { 2 3 4 }
Continue(0/1) = 0
○ deadpool@daredevil:~/Desktop/s7-CD/4 ε-closure of εNFA$ █

```