**EXPERIMENT NO:4**

**PROGRAM**

#include<stdio.h>

#include<string.h>

char result[20][20],copy[3],states[20][20];

void add\_state(char a[3],int i)

{

strcpy(result[i],a);

}

void display(int n)

{

int k=0;

printf("\nEpsilon closure of %s = { ",copy);

while(k < n){

printf(" %s",result[k]);

k++;

}

printf(" } ");

}

int main()

{

FILE \*INPUT;

INPUT=fopen("input.txt","r");

char state[3];

int end,i=0,n,k=0;

char state1[3],input[3],state2[3];

printf("Enter the no of states: ");

scanf("%d",&n);

printf("Enter the states: ");

for(k=0;k<3;k++){

scanf("%s",states[k]);

}

for( k=0;k<n;k++){

i=0;

strcpy(state,states[k]);

strcpy(copy,state);

add\_state(state,i++);

while(1){

end = fscanf(INPUT,"%s%s%s",state1,input,state2);

if (end == EOF ){

break;

}

if( strcmp(state,state1) == 0 ){

if( strcmp(input,"e") == 0 ) {

add\_state(state2,i++);

strcpy(state, state2);

}

}

}

display(i);

rewind(INPUT);

}

printf("\n");

return 0;

}

**input.dat**

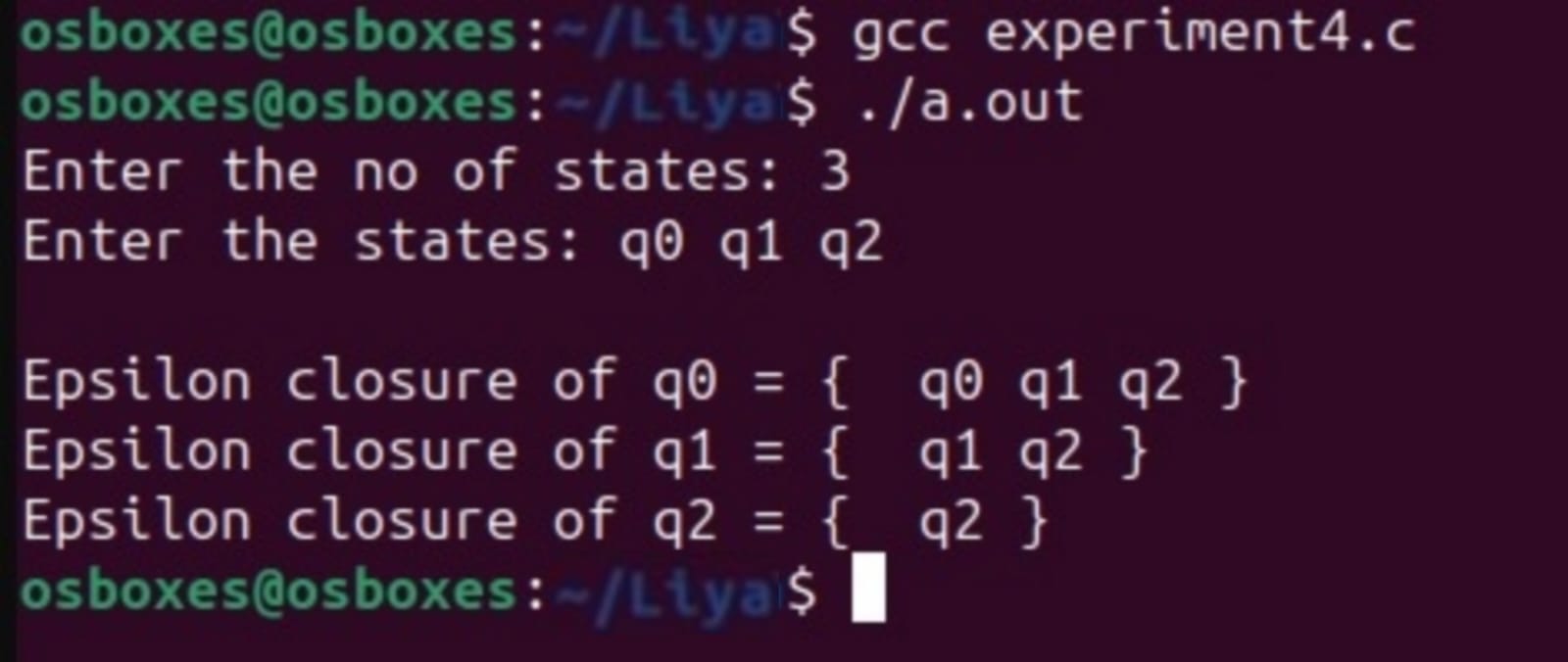
q0 0 q0

q0 1 q1

q0 e q1

q1 e q2

**OUTPUT**

****