*N.hari krishna reddy*

*192110021*

*EPSILON CLOSURE FOR NFA*

*#include<stdio.h>*

*#include<string.h>*

*int trans\_table[10][5][3];*

*char symbol[5],a;*

*int e\_closure[10][10],ptr,state;*

*void find\_e\_closure(int x);*

*int main()*

*{*

*int i,j,k,n,num\_states,num\_symbols;*

*for(i=0;i<10;i++)*

*{*

*for(j=0;j<5;j++)*

*{*

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

*{*

*trans\_table[i][j][k]=-1;*

*}*

*}*

*}*

*printf("How many states in the NFA with e-moves:");*

*scanf("%d",&num\_states);*

*printf("How many symbols in the input alphabet including e:");*

*scanf("%d",&num\_symbols);*

*printf("Enter the symbols without space.Give 'e' first:");*

*scanf("%s",symbol);*

*for(i=0;i<num\_states;i++)*

*{*

*for(j=0;j<num\_symbols;j++)*

*{*

*printf("How many transitions from state %d for the input %c:",i,symbol[j]);*

*scanf("%d",&n);*

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

*{*

*printf("Enter the transitions %d from state %d for the input %c:",i,symbol[j]);*

*scanf("%d",&trans\_table[i][j][k]);*

*}*

*}*

*}*

*for(i=0;i<10;i++)*

*{*

*for(j=0;j<10;j++)*

*{*

*e\_closure[i][j]=-1;*

*}*

*}*

*for(i=0;i<num\_states;i++)*

*e\_closure[i][0]=i;*

*for(i=0;i<num\_states;i++)*

*{*

*if(trans\_table[i][0][0]==-1)*

*continue;*

*else*

*{*

*state=i;*

*ptr=1;*

*find\_e\_closure(i);*

*}*

*}*

*for(i=0;i<num\_states;i++)*

*{*

*printf("e-closure(%d)={",i);*

*for(j=0;j<num\_states;j++)*

*{*

*if(e\_closure[i][j]!=-1)*

*{*

*printf("%d,",e\_closure[i][j]);*

*}*

*}*

*printf("}\n");*

*}*

*}*

*void find\_e\_closure(int x)*

*{*

*int i,j,y[10],num\_trans;*

*i=0;*

*while(trans\_table[x][0][i]!=-1)*

*{*

*y[i]=trans\_table[x][0][i];*

*i=i+1;*

*}*

*num\_trans=i;*

*for(j=0;j<num\_trans;j++)*

*{*

*e\_closure[state][ptr]=y[j];*

*ptr++;*

*find\_e\_closure(y[j]);*

*}*

*}*

