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#include<stdio.h>

int n, m=0, cls[10];
char trans[20][20], states[10], closure[10][10];

void add(char, char *, int*);
int search(char, char *, int);
int epsClosure(char, int);

int main()
{
    int i, j;
    printf("Enter the number of transitions: ");
    scanf("%d", &n);
    printf("Enter the transitions (A,a=B) '^' for epsilon:\n");
    for (i=0; i<n; i++)
    {
        scanf("%s", trans[i]);
    }
    for (i=0; i<n; i++)
    {
        add(trans[i][0], states, &m);
        add(trans[i][4], states, &m);
    }
    for (i=0; i<m; i++)
    {
        epsClosure(states[i], 0);
    }
    for (i=0; i<m; i++)
    {
        printf("epsilon-closure(%c) = {" , states[i]);
        for (j=0; j<cls[i]-1; j++)
        {
            printf(" %c," , closure[i][j]);
        }
        printf(" %c }\n", closure[i][j]);
    }
}

void add(char c, char *p, int *size)
{
    if (search(c, p, *size) == -1)
        p[(*size)++] = c;
}

int search(char c, char *p, int size)
{
    for (int i=0; i<size; i++)
        if (c==p[i])
            return i;
    return -1;
}

int epsClosure(char st, int start)
{
    int index = search(st, states, m);
    add(st, closure[index], &cls[index]);
    for (int i=start; i<n; i++)
    {
        if (trans[i][0]==st && trans[i][2]=='^')
        {
            add(trans[i][4], closure[index], &cls[index]);
            int index2 = epsClosure(trans[i][4], start+1);
            for (int j=0; j<cls[index2]; j++)
            {
                add(closure[index2][j], closure[index], &cls[index]);
            }
        }
    }
    return index;
}

```