#include <stdio.h>

#include <conio.h>

void main() {

/\*OPERATOR PRECEDENCE PARSER\*/

char stack[20], ip[20], opt[10][10][1], ter[10];

int i, j, k, n, top = 0, col, row;

clrscr();

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

{

stack[i] = NULL;

ip[i] = NULL;

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

{

opt[i][j][1] = NULL;

}

}

printf("Enter the no.of terminals :\n");

scanf("%d", &n);

printf("\nEnter the terminals :\n");

scanf("%s", &ter);

printf("\nEnter the table values :\n");

for (i = 0; i < n; i++)

{

for (j = 0; j < n; j++)

{

printf("Enter the value for %c %c:", ter[i], ter[j]);

scanf("%s", opt[i][j]);

}

}

printf("\n\*\*\*\* OPERATOR PRECEDENCE TABLE \*\*\*\*\n");

for (i = 0; i < n; i++)

{

printf("\t%c", ter[i]);

}

printf("\n");

for (i = 0; i < n; i++)

{

printf("\n%c", ter[i]);

for (j = 0; j < n; j++)

{

printf("\t%c", opt[i][j][0]);

}

}

stack[top] = '$';

printf("\nEnter the input string:");

scanf("%s", ip);

i = 0;

printf("\nSTACK\t\t\tINPUT STRING\t\t\tACTION\n");

printf("\n%s\t\t\t%s\t\t\t", stack, ip);

while (i <= strlen(ip))

{

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

{

if (stack[top] == ter[k])

col = k;

if (ip[i] == ter[k])

row = k;

}

if ((stack[top] == '$') && (ip[i] == '$'))

{

printf("String is accepted\n");

break;

}

else if ((opt[col][row][0] == '<') || (opt[col][row][0] == '='))

{

stack[++top] = opt[col][row][0];

stack[++top] = ip[i];

printf("Shift %c", ip[i]);

i++;

}

else

{

if (opt[col][row][0] == '>')

{

while (stack[top] != '<')

{

--top;

}

top = top - 1;

printf("Reduce");

}

else

{

printf("\nString is not accepted");

break;

}

}

printf("\n");

for (k = 0; k <= top; k++)

{

printf("%c", stack[k]);

}

printf("\t\t\t");

for (k = i; k < strlen(ip); k++)

{

printf("%c", ip[k]);

}

printf("\t\t\t");

}

getch();

}