**EXPERIMENT NO:9**

**PROGRAM:-**

#include <stdio.h>

#include <string.h>

void main() {

char stack[20], ip[20], opt[10][10][2], ter[10];

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

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

stack[i] = '\0'; // Use '\0' to represent null character

ip[i] = '\0';

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

opt[i][j][0] = '\0';

opt[i][j][1] = '\0';

}

}

printf("Enter the number of terminals: ");

scanf("%d", &n);

printf("\nEnter the terminals: ");

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("\nOPERATOR PRECEDENCE TABLE:\n");

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

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

}

printf("\n");

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

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

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

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

}

printf("\n");

}

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");

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");

}

}

**OUTPUT:**