

## // OPERATOR PRECEDENCE PARSER

```
#include<stdio.h>
#include<string.h>
void main()
{
    char stack[20],ip[20],opt[10][10][1],ter[10];
    int i,j,k,n,top=0,row,col;
    for(i=0;i<10;i++)
    {
        stack[i]=0;
        ip[i]=0;
        for(j=0;j<10;j++)
        {
            opt[i][j][1]=0;
        }
    }
    printf("Enter the no.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 ");
    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]='S';
printf("\n\nEnter the input string(append with $):");
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]) row=k;
        if(ip[i]==ter[k]) col=k;
    }
    if((stack[top]=='S')&&(ip[i]=='S'))
    {
        printf("String is ACCEPTED"); break;
    }
    else if((opt[row][col][0]=='<') || (opt[row][col][0]=='='))
    {
        stack[++top]=opt[row][col][0];
        stack[++top]=ip[i];
        ip[i]=' ';
        printf("Shift %c",ip[i]);
        i++;
    }
    else
    {
        if(opt[row][col][0]=='>')
        {
            while(stack[top]!='<')
            {
                --top;
            }
            top=top-1; printf("Reduce");
        }
        else
        {
            printf("\nString is not accepted"); break;
        }
    }
    printf("\n"); printf("%s\t\t\t%s\t\t\t",stack,ip);
}
getchar();
}

```