**Compiler Design**

* **Assignment – 8: Operator Precedence Parser**

**Implement the functionalities of Operator Precedence Parser using C language**

* **CODE:**

**#include<stdio.h>**

**#include<conio.h>**

**void main()**

**{**

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

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

**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:");**

**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("\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");**

**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();**

**}**

**Output:**

