```
    else
    {
        val = st[top];
```

WEEK - 2 LAB - 2 28/12/23

Infix to postfix conversion

```
#include <stdio.h>
#include <string.h>
#include <ctype.h>
# define max 100
char st[100];
int top = -1;
char ele;

void push (char ele)
{
    if (top == (max) - 1)
    {
        printf("stack is full");
    }
    else
    {
        top ++;
        st[top] = ele;
    }
}
char pop()
{
  if ( top == 1)
  {
      printf("stack is empty");
    }
  else
  {
      top= top-1;
      return (st[top+1]);
   }
}
char pre (char a)
{
     if(a=='^')
     {
        return(5);
     }
     else if (a == '*')
     {
        return(4);
      }
      else if (a=='/')
      {
        return(3);
      }
      else if (a=='+')
      {
        return(2);
      }
      else if (a=='-')
      {
        return(1);
      }
      else
      return(0);
  }
```

```
int main()
{
    char postfix[100];
    char infix[100];
    int i=0;

    printf("Enter the infix expression \n");
    scanf("%s", infix);

    while(infix[i]!='\0')
    {
        if (isalpha(infix[i]))
          postfix[i] = infix[i];
        else if (infix[i]=='^' || infix[i]=='*' || infix[i]=='+'
                 || infix[i]=='-')
        {
            if(pre(st[top]) > pre(infix[i]))
            {
                postfix[i]=pop();
                push(infix[i]);
            }
            else
            push(infix[i]);
        }
        i++;
    }
    postfix[i]= st[top];
    printf("Postfix expression is:\n");
    for(i=0; i<=strlen(infix)+1; i++)
    {
        printf("%c", postfix[i]);
    }
}
```

Output :

```
Enter the infix expression
A+B-C
Postfix expression is:
AB+C-
```

Postfix Evaluation LAB-3

```
#include <stdio.h>
int st[20];
int top = -1;

void push (int x)
{
        st[++top] = x;
}
int pop()
{
        return st[top--];
}
int main()
{
        char exp[20];
        char *e;
        int n1,n2,n3,num;
        printf("Enter the expression :: ");
        scanf("%s", exp);
        e = exp;
        while(*e != '\0')
        {
                if(isdigit(*e))
{ num = *e -48;
  push(num);
}
else
{
        n1 = pop();
        n2 = pop();
        Switch (*e)
        {
            Case '+':
              n3 = n1 +n2;
              break;
            Case '-':
              n3 = n2 - n1;
              break;
            Case '*':
                n3 = n1*n2;
                break;
            case '/':
                n3 = n2/n1;
                break;
        }
            push(n3);
        }
        e++;
    }
printf("\nThe result of expression %s = %d\n\n",exp
        pop());
```

output: Enter the expression.

```
1+2
The result of expression 1+2 is 3
```