EXPERIMENT NO: 2

TITLE: Develop a program to solve simple computational problems using arithmetic expression and use of each operator leading to simulation of a commercial calculator. (No built-in math function)

PROGRAME:

```
#include <stdio.h>
void main()
{
int num1, num2;
char op;
printf("Enter an expression\n");
scanf("%d%c%d",&num1,&op,&num2);
switch(op)
{
case '+' : printf("%d\n",num1+num2);
            break;
case '-' : printf("%d\n",num1-num2);
            break;
case '*' : printf("%d\n",num1*num2);
            break;
case '/' : if(num2==0)
           {
                printf("Divide by zero error\n");
                break;
            }
           printf("%f\n",(float)num1/num2);
           break;
case '%' : if(num2==0)
            {
                printf("Divide by zero error\n");
                break;
            }
           printf("%d\n",num1%num2);
           break;
default : printf("Invalid expression\n");
 }
}
```

OUTPUTS:

- Enter an expression
  4+7
  11
- Enter an expression
  4-7
  -3
- Enter an expression
  4*7
  28
- Enter an expression
  4/7
  0.571429
- Enter an expression
  4/0

Divide by zero error

- Enter an expression
  4%7
  4
- Enter an expression
  4%0
  Divide by zero error
- Enter an expression
  4@7
  Invalid expression

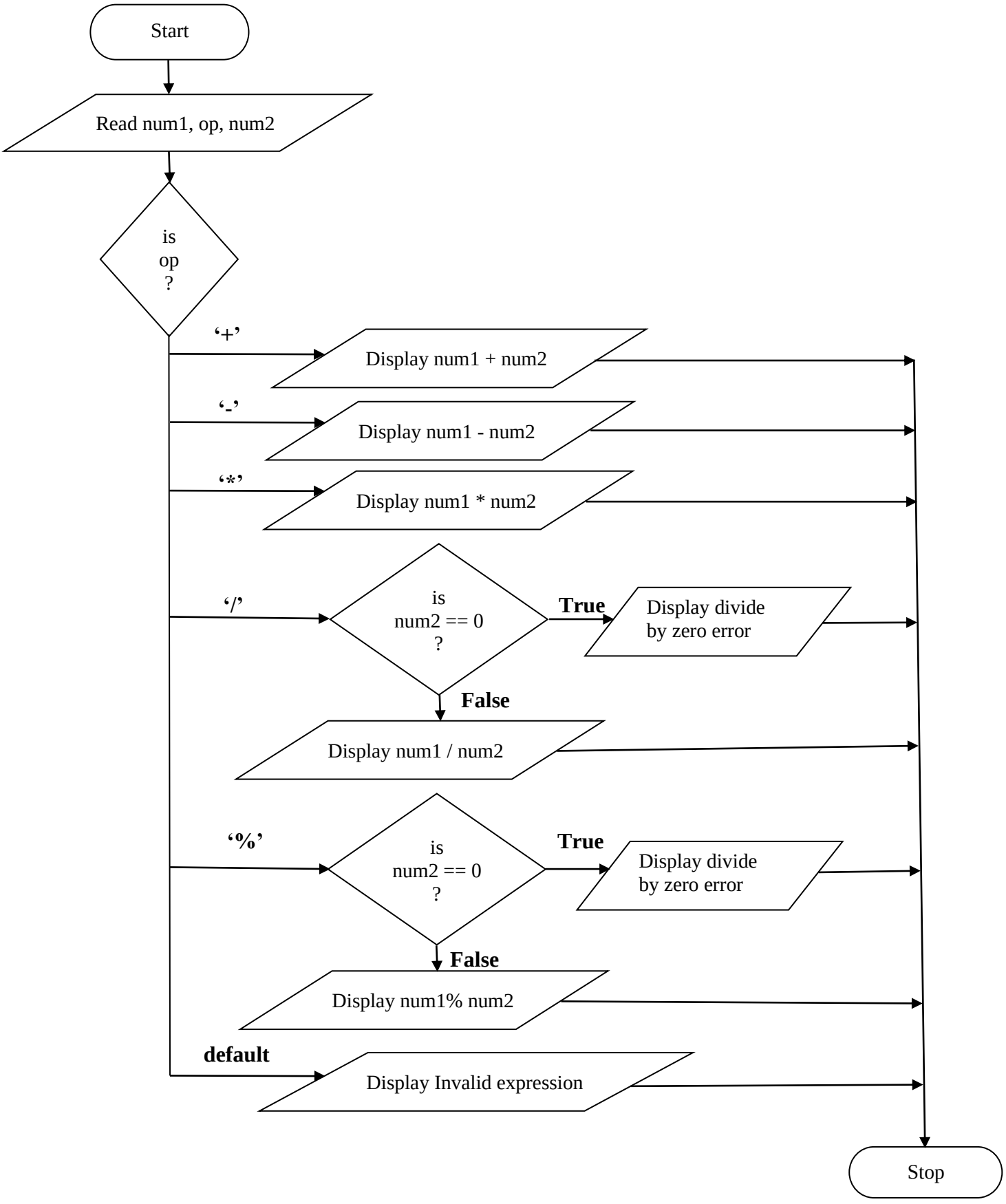
ALGORITHM:

STEP 1: Start

STEP 2: Read num1, op and num2

STEP 3: if **(op = '+')**
display num1+ num2
goto STEP 9
STEP 4: if **(op = '-')**
display num1- num2
goto STEP 9
STEP 5: if **(op = '*')**
display num1* num2
goto STEP 9
STEP 6: if **(op = '/')**
check **(num2 = = 0)**
if **yes** display divide by zero error
goto STEP 9
if **no** display num1/ num2
goto STEP 9
STEP 7: if **(op = '%')**
check **(num2 = = 0)**
if **yes** display divide by zero error
goto STEP 9
if **no** display num1% num2
goto STEP 9
STEP 8: if **(no match)** display Invalid Expression
STEP 9: Stop

FLOWCHART:


Start
Read num1, op, num2
is
op
?
'+'
Display num1 + num2
'-'
Display num1 - num2
'*'
Display num1 * num2
'/'
is
num2 == 0
?
True
Display divide
by zero error
False
Display num1 / num2
'%'
is
num2 == 0
?
True
Display divide
by zero error
False
Display num1% num2
default
Display Invalid expression
Stop