PROJCT NO : 6

AIM: Write an appropriate language description for a layman language which can do mathematical operations using English like sentences.

EXAMPLE:

Add 100 ,200,300,400 . Sub 250 from result.

Mul 400 to it . Div the answer by 2. Show me

the answer.

Lab3: Scanner phase implementation of assigned project in "C" language.

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We use “c++” instead of “c”.

Regular Defination	Examples:
Keywords	From, from, Show, show, by, to, it, result, the, me, Answer, answer
Operation	Add, Sub(Subtract), Mul(Multiply), Div(Divide)
Digit(Number)	[0-9]
Que. Mark	“?”(EOF)
White Space	$(\text{Tab} \mid \text{Newline})^{+}$
Letter	[A-Za-z]

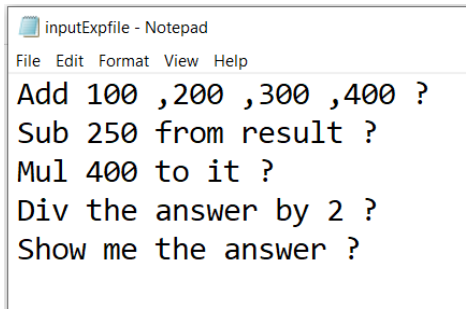
Code:

```
#include <bits/stdc++.h>
using namespace std;
int operation(char buf[])
{
   char op[10][10]={"Add","add","Sub","sub","Mul","mul","Div","div"};
   for(int i=0;i<8;i++)
   {
      if(strcmp(op[i],buf)==0)
      return 1;
   }
   return 0;
}
int keyword(char buf[])
{
   char key[20][20]={"From", "from", "Show", "show", "by", "to", "it", "number", "and", "result","Result",
"the", "me", "Answer", "answer" };
   for(int i=0;i<15;i++)
   {
      if(strcmp(key[i],buf)==0)
      return 1;
   }
   return 0;
}
int number(char buf[])
{
   int n=strlen(buf);
   for(int i=0;i<n;i++)
   {
      if(buf[i]>='0' && buf[i]<='9')
      {
         return 1;
      }
```

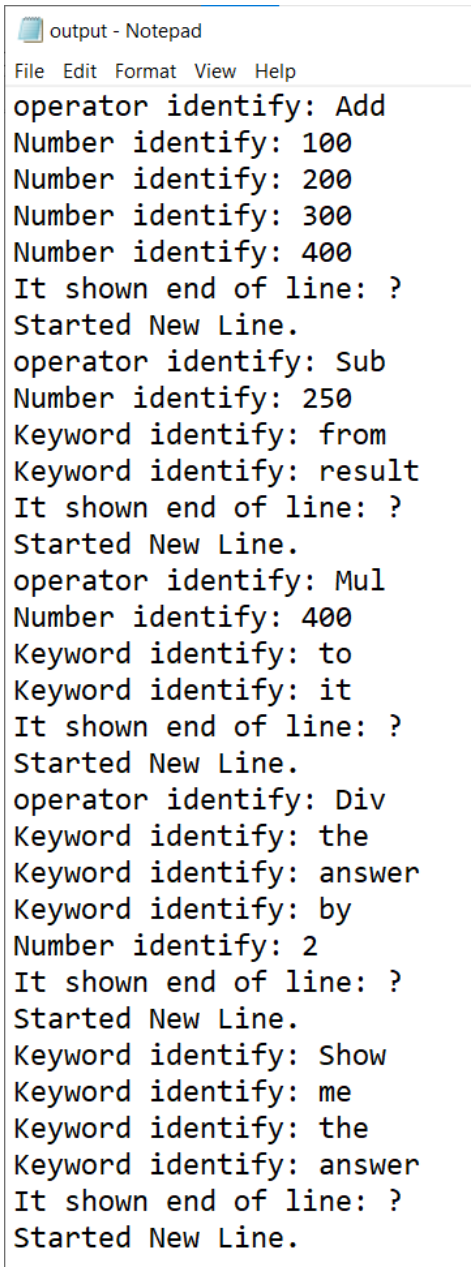
```
        else
        {
            return 0;
        }
    }
    return 1;
}
int main()
{

    FILE *f;
    f=freopen("D:/00 Study/SEM 6/0LAB/LT/LAB 3/inputExpfile2.txt", "r", stdin);
    freopen("D:/00 Study/SEM 6/0LAB/LT/LAB 3/output2.txt", "w", stdout);
    char ch,buffer[15];
    int d=0;
    while((ch = fgetc(f)) != EOF){
        if(ch=='\n')
        {
            printf("Started New Line. \n");
            continue;
        }
        if(ch=='?')
        {
            printf("It shown end of line: %c\n",ch);
            continue;
        }
        if(isalnum(ch))
        {
            buffer[d++]=ch;
        }
        else if((ch==' ' || ch=='\n') && (d!=0)){
            buffer[d]='\0';
            d=0;
```

```
        if(ch!=',')
        {
           if(number(buffer)==1){
              printf("Number identify: %s\n", buffer);
           }
        }
        else{
           printf("\n");
           continue;
        }
        if(operation(buffer)==1)
        {
           printf("operator identify: %s\n",buffer);
        }
        else if(keyword(buffer)==1)
        {
           printf("Keyword identify: %s\n",buffer);
        }
     }
     else if(ch==','||ch==' ')
     {
           continue;
     }
     else
     {
        printf("Not identify token %c\n",ch);
     }
  }
}
```

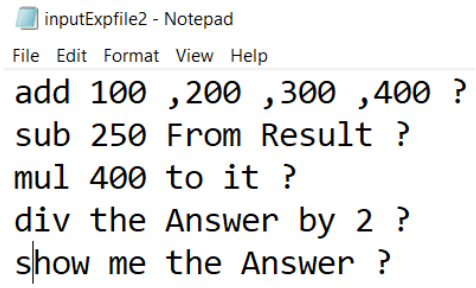
Input File:



Output File:



Input File2: Show case sensitive



Output File2: