Assignment4.1

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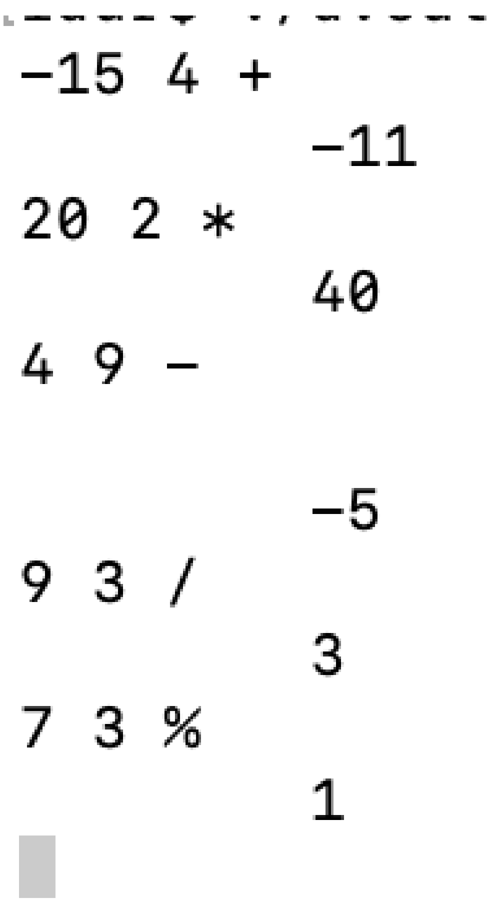
Calculator

```c
int modGetop(char s[]){
    int i,c;
    static int lastc;
    if(lastc == 0){
        c= Getch();
    } else {
        c = lastc;
        lastc = 0;
    }
    while ( (s[0] = c) == ' ' || c == '\t'){
        c = Getch();
    }
    s[1] = '\0';

    //handling negative numbers
    //bug -- need to enter twice to get result
    i = 0;
    int hold;
    if (c == '-' && (isdigit(hold = Getch()))){ // check for is negative and number after
        s[++i] = hold;
        while(isdigit(s[++i] = (c = Getch()))); //take digits

        if (c =='.'){
            while (isdigit(s[++i] = c = Getch())); // take digits
        }
        s[i] = '\0';

        if(c != EOF){
            unGetch(c); //go into buffer
        }

        return NUMBER;
    }

    if (!isdigit(c) && c != '.'){
        return c; //main()
    }

    if(isdigit(c)){
        while(isdigit(s[++i] = c = Getch()));
    }

    if (c =='.'){
        while (isdigit(s[++i] = c = Getch()));
    }
    s[i] = '\0';
    if(c != EOF){
        lastc = c; //go into buffer
    }
    return NUMBER; //symbol
}

int main(){
    int type; //type where switch statement will work
    double op2; //division/subtraction
    while((type = modGetop(s)) != EOF){
        switch(type)
        {
            case NUMBER:
                push(Atof(s));
                break;
            case '+':
                push(pop() + pop());
                break;
            case '*':
                push(pop() * pop());
                break;
            case '-':
                op2 = pop();
                push( pop() - op2);
                break;
            case '/':
                op2 = pop();
                if(op2 != 0.0){
                    push(pop() / op2);
                } else {
                    printf("zero division\n");
                }
                break;
            //modulus
            case '%':
                op2 = pop(); //pop out the most recent to be the divisor
                if(op2 != 0.0){
                    push(fmod(pop(), op2));
                } else {
                    printf("zero division\n"); //can't be divided by 0
                }
                break;
            case '\n':
                printf("\t%g\n", pop());
                break;
            default:
                printf("error: unknown command %s\n", s);
        }
    }
    return 0;
```

```
}
```



```
-15 4 +
        -11
20 2 *
        40
4 9 -


        -5
9 3 /
        3
7 3 %
        1
```