Lab 1

Instructions: Create two C calculator programs which perform arithmetic operations over two integers and output the results.

Objectives:

- Get familiar with basic terminal usage (`pwd`, `ls`, `cd`, `mkdir`, `touch`, etc.)
- Explore basic input/output in C. (`printf`, `scanf`)
- Use variables and arithmetic operations in C. (`+`, `-`, `*`, `/`)
- Compile and run C programs.

Task 1: Basic calculator with hardcoded inputs.

- Create a .c source file named "`Lab1a.c`".
- In `Lab1a.c`:
  - Declare and initialize 2 integer variables `inputNum1` and `inputNum2`.
    - Assign 20 to `inputNum1`.
    - Assign 5 to `inputNum2`.
  - Declare three integer variables `sum`, `difference`, and `product`. Declare one float variable `quotient`.
    - Assign the sum of `inputNum1` and `inputNum2` to `sum`.
    - Assign the difference of `inputNum1` and `inputNum2` to `difference`.
    - Assign the product of `inputNum1` and `inputNum2` to `product`.
    - Assign the quotient of `inputNum1` and `inputNum2` to `quotient`.
  - Print variables to the user as presented in Figure 1.

```
/home/user/CIS190/Lab1$ ./Lab1a.out
20 + 5 = 25
20 - 5 = 15
20 * 5 = 100
20 / 5 = 4.000000
```

Figure 1. Example output for `Lab1a.c`.

- Note: To compile and run, you can use the following commands in a terminal opened in the same directory as `Lab1a.c`:

  `$ gcc Lab1a.c -o Lab1a.out` (Compiles to executable Lab1a.out)

  `$ ./Lab1a.out` (Runs executable Lab1a.out)

Task 2: Basic calculator with user inputs.

- Create a .c source file named "`Lab1b.c`".
- In `Lab1b.c`:
    - Perform all the same steps as in Task 1, but instead of hardcoding values for `inputNum1` and `inputNum2`, ask the user to input values for these variables as shown in Figure 2.

```
/home/user/CIS190/Lab1$ ./Lab1b.out
Enter an integer value for inputNum1: 4
Enter an integer value for inputNum2: 8
4 + 8 = 12
4 - 8 = -4
4 * 8 = 32
4 / 8 = 0.500000
```

Figure 2. Example input/output for `Lab1b.c`.

Submission details:

- From a terminal in the same directory as Lab1a.c and Lab1b.c, run the following command to produce a compressed archive containing both .c files:

  ```
  $ tar -czvf Lab1_LastName.tar.gz Lab1a.c Lab1b.c
  ```

  where "LastName" is your last name.

- Submit `Lab1_LastName.tar.gz`.