Assignment 7

Use your knowledge of floating point to create a floating point calculator.

Write these procedures:

- **addCalc**: This procedure will add two floating point numbers (in $f12 and $f13) and return the result in $f0.
- **subCalc**: This procedure will subtract two floating point numbers (in $f12 and $f13) and return the result in $f0.
- **mulCalc**: This procedure will multiply two floating point numbers (in $f12 and $f13) and return the result in $f0.
- **divCalc**: This procedure will divide two floating point numbers (in $f12 and $f13) and return the result in $f0.

In your mainline,

- Ask the user for the first floating point number.
- Ask the user for the operator (+,-,*,/.&)
- If the operator & was entered, exit the program.
- Ask the user for the second operator.
- Determine the appropriate procedure to call based on the operator entered. Make sure you use jal to call the procedure. (Jump to a label based on the operator and then call the procedure)
- If any value other than the following operator were entered, print a message that the user entered an invalid operator.
- Print the result to the console.
- Loop back to ask the user for the next operator.

Example output:

```
Enter First Float: 45.2
Enter Operator: +
Enter Second Float: 2
Result = 47.2
Enter First Float: 56
Enter Operator: -
Enter Second Float: 3.4
Result = 52.6
Enter First Float: 5.2
Enter Operator: *
Enter Second Float: 2
Result = 10.4
Enter First Float: 65
Enter Operator: /
Enter Second Float: 4
Result = 16.25
Enter First Float: 1
Enter Operator: )
Enter Second Float: 3
Invalid operator was entered.
Enter First Float: 1
Enter Operator: &
Goodbye.
```

Hint
Define each operator in the data segment and compare the user operator with the defined operator and branch to a label.

```
.data
      AddOp:  .byte '+'
      SubOp:  .byte '-'
      MulOp:  .byte '*'
      DivOp:  .byte '/'
      QuitOp: .byte '&'
```

Challenge/Bonus Question (10 points):

- Write a procedure **power**, which accept a number and an exponent. For example, if the number is 2 and the exponent is 3, the result is 8.
- Add the operator '^' to calculate the power of a number by calling the **power** procedure.

Required for all assignments and are included in the rubric for grading:

- You need to name your file as "LastName-Name-Assign7.asm" (Example: Talley-Michelle-Assign7.asm)
- Your program will need to have the exact output unless otherwise stated. ***Make sure to use spaces and newlines as required.***
- Your source needs to have comments that explain your implementation.
- Your procedures need to have comments
- You need to make sure you exit your program and avoid calling procedures unnecessarily.
- You need to include the following set of comments at the top of your source code for all assignments.
  #Your Name
  #Assignment # (Example: Assignment #7)
- You need to submit your source code on blackboard.
- Please submit your files in a zip file named LastName-FirstName-Assign7.zip) and make sure you include any files that are used as includes in the zip file (Example: utils.asm).