CST250 Project 1: Simple Calculator

Learning Objectives:

- Become familiar with PLPTool features
- Use PLP arithmetic instructions
- Use PLP control flow instructions

The Task:

This lab will be done individually. Your program should start by loading the numbers 2015 and 250 into registers *$a0* and *$a1* respectively. The start of your program is a good place to initialize any other registers with values that you don't plan on changing inside the program. It should then have an infinite loop that performs two steps: reading the value of the switches and use control flow instructions to perform the indicated arithmetic operation. The result should be stored in register *$v0.* After doing this it should return to the start of the loop and repeat these two steps. If an undefined switch value is read, *$v0* should contain 0. Use the following switch convention:

Switch Number	Binary Switch Value	Operation	Result ($v0)
0	`0b00000001`	*$v0 = $a0 + $a1*	2265
1	`0b00000010`	*$v0 = $a0 - $a1*	1765
2	`0b00000100`	*$v0 = $a0 * $a1*	503750
3	`0b00001000`	*$v0 = $a0* AND *$a1*	218
4	`0b00010000`	*$v0 = $a0* OR *$a1*	2047

Verify, using the *Watcher Window*, that the correct value is being placed in register *$v0* for each switch value.

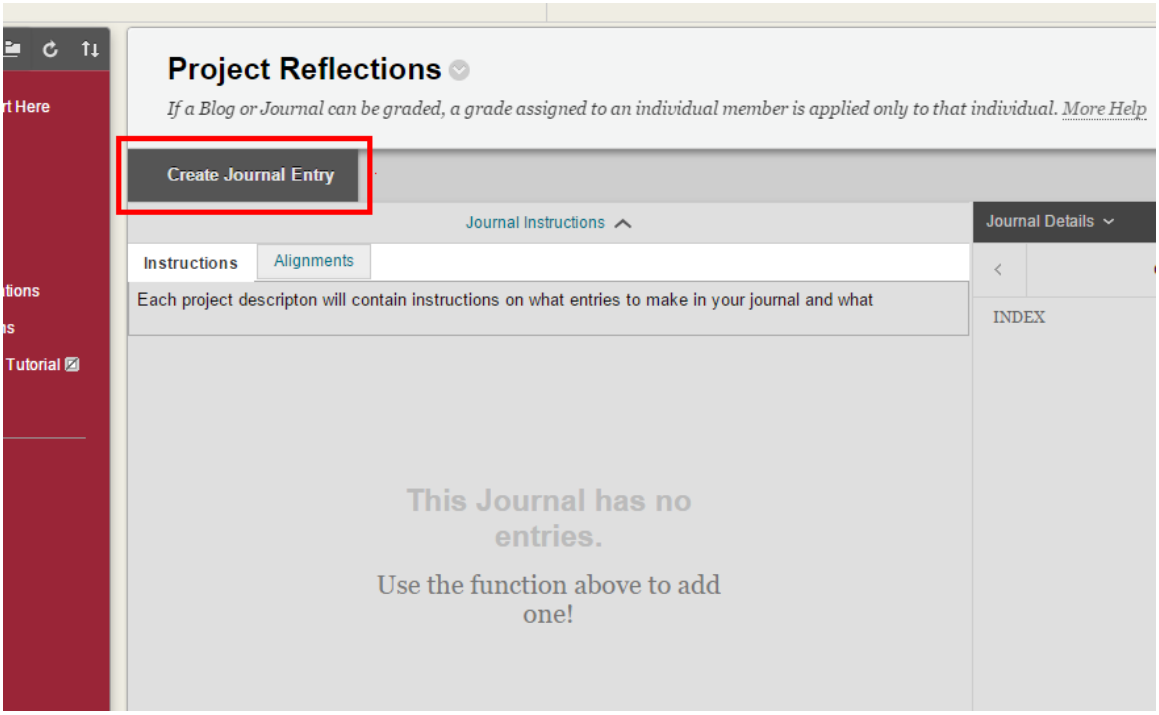
Through all of this, remember that the goal is to become comfortable with PLP and play around with it. The goal isn't to just get this done as quickly as possible. Enjoy!

Deliverables:

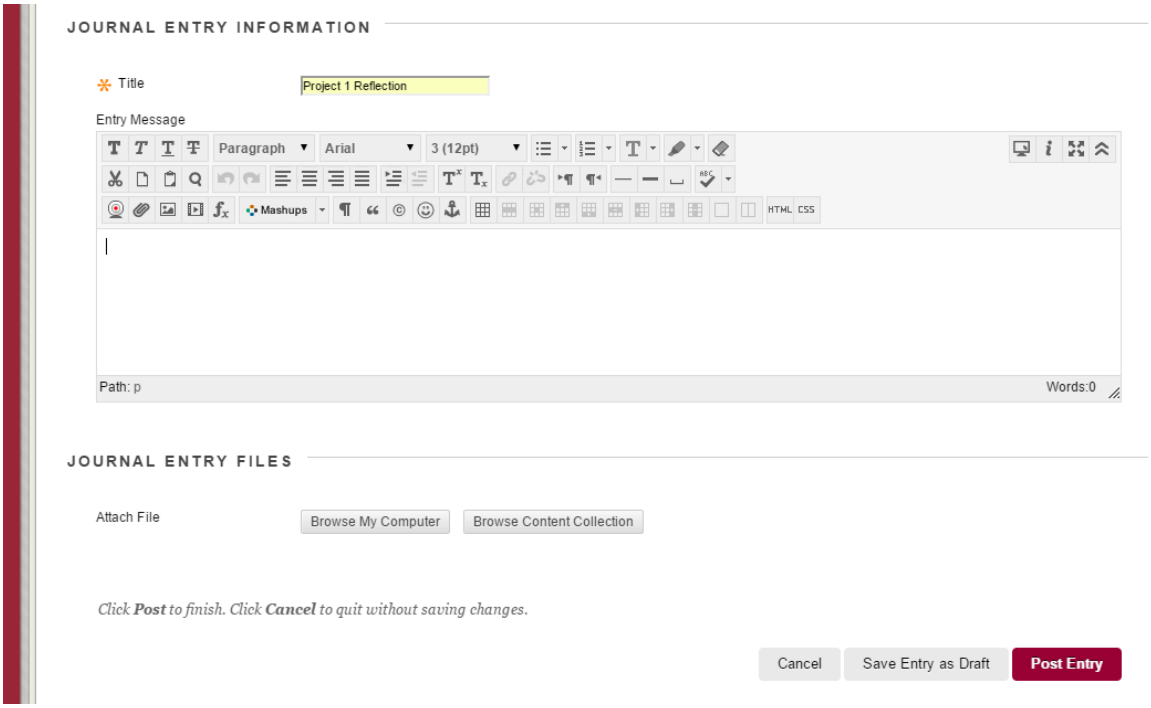
1. Write a Reflection in your Blackboard Journal in an entry titled *Project 1 Reflection*. Detailed information about how to create a Blackboard Journal entry are located on the next page. In this entry, discuss what you took away from this project. Did you have any misconceptions at the start of this project that you discovered while implementing the program? Did something not work the first time around? If it didn't, mention what it was and how you fixed it. Having completed the program, is there anything you would have done differently? (3 points)
2. Submit your program on blackboard with the format: lastname_project1.plp. (12 points)

Creating a Journal Entry

In the *Week 2* section of Blackboard, click *Project Reflections*. It will take you to the following page:



Select *Create Journal Entry* and you will be taken to the following page:



Titled the entry *Project 1 Reflection* (I would suggest writing the entry in a separate word processor and saving it to your computer, then copying the text from the document into the journal to avoid losing anything if Blackboard logs you out while you are writing). ***Do not*** attach any files to your journal entry.