*Break into POGIL teams of 4 and assign each team member one of the following roles.*

|  |  |  |
| --- | --- | --- |
| **Student Name** | **Role** | **Responsibility** |
|  | Facilitator | Reads the questions aloud, keeps track of time and makes sure everyone contributes appropriately. |
|  | Spokesperson | Talks to the instructor and other teams. |
|  | Quality Control | Records all answers & questions, and provides team’s reflection to team and instructor. |
|  | Process Analyst | Considers how the team could work and learn more effectively. |

Writing Pseudocode: Critical Thinking Questions

***Pseudocode*** is a cross between computer code and everyday English. There are many different varieties. Pseudocode is less precise than actual computer code, such as Java or Python or App Inventor, but more precise and less wordy than everyday English.

Suppose we have a list of numbers -- e.g., 5, 10, -2, -3, 7, 8, 12 Here's an algorithm that uses sequence, selection, and iteration (repetition) to add all the ***even numbers*** in the list and print out their sum. Notice how indentation is used to clarify the different parts of the algorithm.

1. Set the running total to 0.

2. For each number in the list:

3. If the number is even

4. Add the number to the running total.

5. Print the running total.

This algorithm contains five lines and includes examples of all three types of control structures, sequence, selection, and repetition. The lines are numbered for convenience.

1. Which line(s) of the algorithm contain a repetition control structure? Remember a control structure can consist of multiple statements.

The lines that contain a repetition control structure is line 2

1. Which line(s) of the algorithm contain a selection control structure?

Line 3

1. If you ran this algorithm on the above list of numbers, what would it print?

It would print 28

1. (**Portfolio**) Suppose you had a list of positive numbers such as 5, 10, 12, 13, 6, 7, 1, 3, 2, 1. And suppose for each of the numbers in the list you added the number to a running total if it is even and subtracted it if it is odd. What result would you get for this list of numbers?

You would get -1 as a final answer

1. (**Portfolio**) Write a pseudocode algorithm that implements the algorithm you used to calculate this total.

Let Total = 0

For items in list (list) {

If item in list at index i == even {

Let Total = total + item

Else {

Let Total = total - item

}

Let i = i + 1

}