AP Computer Science Principles

Create #1 – The Gradebook App

Day 2 (Wednesday): Write the Program Code to Add Assignments to the Gradebook and Calculate the Current Grade (Blocks)

Your Create Project <u>MUST</u> use a collection of some sort. The easiest collection to use in App Inventor is the List. You have been using lists in the past two units.
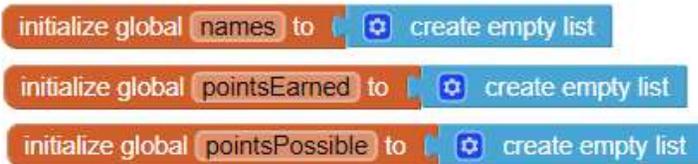
This Gradebook App will utilize "parallel" lists like the Quiz App used.

The parallel lists will hold the following:

- The Name of the Assignment
- The Points Earned on the Assignment
- The Points Possible for the Assignment

Your lists will allow your Gradebook App to hold a large number of assignments.

You will need the following list variables:

You will also need the following three numerical variables:

<u>Write the program code to implement the following pseudocode:</u>

1) When the user clicks on the Button to Add an Assignment
     If any of the three textboxes is empty (good place for "OR" blocks)
         Notify the user that "At least one of the data fields is empty"
     Otherwise
         Use the "add items to list" block to:
            Add the Assignment Name to the list that holds the names
            Add the Points Earned to the list that holds the points earned
            Add the Points Possible to the list that holds the points possible
         Set all the textboxes back to an empty text String
         Call the Procedure named CalculateGrade (will be done next!)
         Set the Label for the Current Grade with the gradePercent (calculated next)

2) Create the Procedure CalculateGrade

The CalculateGrade procedure should:

      Set the variables totalPointsEarned, totalPointsPossible, and gradePercent to 0

      Traverse the list of Points Earned and add all the values into totalPointsEarned

            (You can use the "for each item in list" block)

      Traverse the list of Points Possible and add all of the values into totalPointsPossible

            (You can use the "for each item in list" block)

      Calculate the gradePercent (100 * totalPointsEarned / totalPointsPossible)

TEST YOUR APP WITH KNOWN VALUES TO MAKE SURE IT IS CALCULATING THE GRADE PERCENT PROPERLY!!