

AP Computer Science Principles

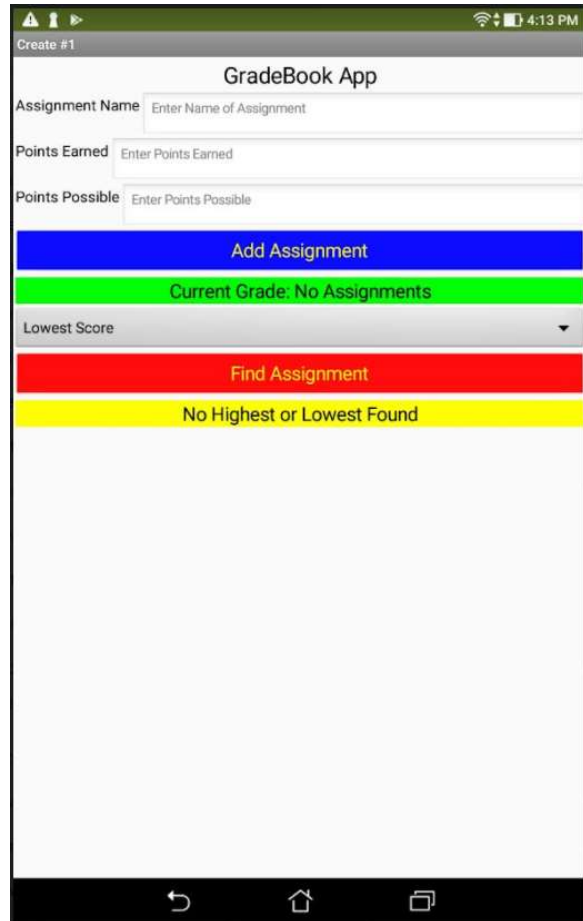
Create #1 – The Gradebook App

Day 3 (Friday): Add the capability to find the highest or lowest score

1) You should add two elements to the User Interface.

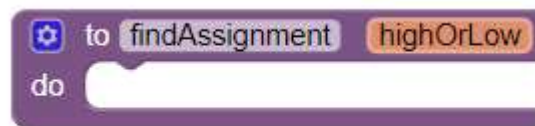
- A Spinner (a selection tool)
- A Button
- A Label to show highest or lowest

It could look like this to the right.

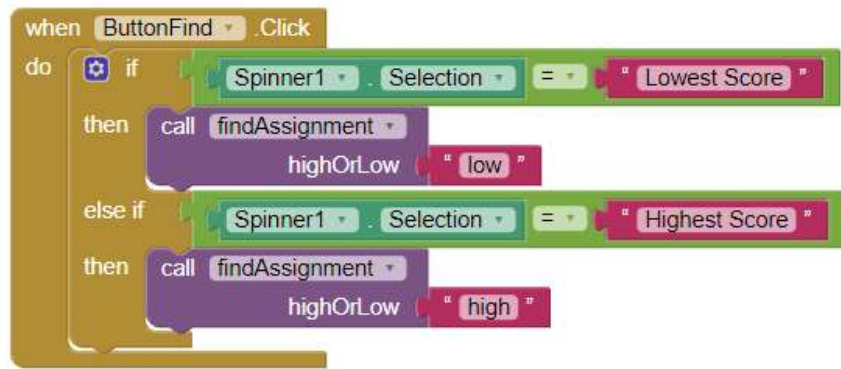


2) Create a procedure with a parameter that will be used to find the highest or lowest assignment.

It could look like this to the right

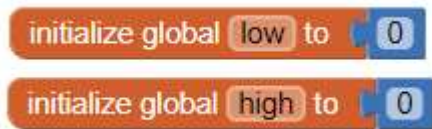


3) Add the event handler on the right for your new Button to Find an Assignment



4) Complete the procedure to find the highest or lowest assignment.

First you need two more variables. You can call them high and low like this below:



Now, we will write part of the procedure as a class.

Here is the pseudocode:

If the parameter is indicating to find the high score

- Set the variable high to earned/possible at index 1 of the lists pointsEarned and PointsPossible
- Traverse through the two Lists at the same time (we cannot use the loop like we did the other day) and calculate the value earned/possible
- If the value is greater than the current high score
 - o Replace the high score with the value just calculated.
- Set the label for HighOrLow to the current high score.

Otherwise if the parameter is indicating to find the low score

- Set the variable low to earned/possible at index 1 of the lists pointsEarned and PointsPossible
- Traverse through the two Lists at the same time (we cannot use the loop like we did the other day) and calculate the value earned/possible
- If the value is less than the current low score
 - o Replace the low score with the value just calculated.
- Set the label for HighOrLow to the current high score.

See the next page for what the output might look like

After entering the following scores,

20/25 15/15 3/12 and 16/32

The output would look like this:

Lowest Score

The screenshot shows the GradeBook App interface on a mobile device. At the top, the status bar displays the time as 1:56 PM. The app title is "GradeBook App". Below the title, there are three input fields: "Assignment Name" (placeholder: "Enter Name of Assignment"), "Points Earned" (placeholder: "Enter Points Earned"), and "Points Possible" (placeholder: "Enter Points Possible"). The "Points Possible" field is highlighted with an orange border. Below the input fields is a blue button labeled "Add Assignment". Underneath the button is a green bar displaying "Current Grade: 64.28571%". Below that is a grey bar with a dropdown arrow labeled "Lowest Score". A red bar displays "Find Assignment". Below the red bar is a yellow bar displaying "Lowest Score: 25%". The bottom of the screen shows a standard Android keyboard with a "Done" button. The Android navigation bar is visible at the very bottom.

Highest Score

The screenshot shows the GradeBook App interface. At the top, there is a status bar with a warning icon, a key icon, a play icon, a Wi-Fi icon, a battery icon, and the time 1:57 PM. Below the status bar is a header bar with the text "Create #1". The main content area is titled "GradeBook App" and contains three input fields: "Assignment Name" with the placeholder "Enter Name of Assignment", "Points Earned" with the placeholder "Enter Points Earned", and "Points Possible" with the placeholder "Enter Points Possible". Below these fields are three buttons: a blue "Add Assignment" button, a green "Current Grade: 64.28571%" button, and a red "Find Assignment" button. Below the "Find Assignment" button is a yellow "Highest Score: 100%" button. At the bottom of the screen is a navigation bar with three icons: a back arrow, a home icon, and a recent apps icon.