2019 AP® COMPUTER SCIENCE A FREE-RESPONSE QUESTIONS

2. This question involves the implementation of a fitness tracking system that is represented by the StepTracker class. A StepTracker object is created with a parameter that defines the minimum number of steps that must be taken for a day to be considered *active*.

The StepTracker class provides a constructor and the following methods.

- addDailySteps, which accumulates information about steps, in readings taken once per day
- activeDays, which returns the number of active days
- averageSteps, which returns the average number of steps per day, calculated by dividing the total number of steps taken by the number of days tracked

The following table contains a sample code execution sequence and the corresponding results.

Statements and Expressions	Value Returned (blank if no value)	Comment
<pre>StepTracker tr = new StepTracker(10000);</pre>		Days with at least 10,000 steps are considered active. Assume that the parameter is positive.
<pre>tr.activeDays();</pre>	0	No data have been recorded yet.
<pre>tr.averageSteps();</pre>	0.0	When no step data have been recorded, the averageSteps method returns 0.0.
<pre>tr.addDailySteps(9000);</pre>		This is too few steps for the day to be considered active.
<pre>tr.addDailySteps(5000);</pre>		This is too few steps for the day to be considered active.
<pre>tr.activeDays();</pre>	0	No day had at least 10,000 steps.
<pre>tr.averageSteps();</pre>	7000.0	The average number of steps per day is (14000 / 2).
<pre>tr.addDailySteps(13000);</pre>		This represents an active day.
<pre>tr.activeDays();</pre>	1	Of the three days for which step data were entered, one day had at least 10,000 steps.
<pre>tr.averageSteps();</pre>	9000.0	The average number of steps per day is (27000 / 3).
<pre>tr.addDailySteps(23000);</pre>		This represents an active day.
<pre>tr.addDailySteps(1111);</pre>		This is too few steps for the day to be considered active.
<pre>tr.activeDays();</pre>	2	Of the five days for which step data were entered, two days had at least 10,000 steps.
<pre>tr.averageSteps();</pre>	10222.2	The average number of steps per day is (51111 / 5).

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Write the complete StepTracker class, including the constructor and any required instance variables and methods. Your implementation must meet all specifications and conform to the example.

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