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AP Computer Science A  
For-Each Loop Practice

Consider the class Grade below:

public class Grade {
    private int grade;

    public Grade(int g) {
        grade = g;
    }

    public int getGrade() {
        return grade;
    }

    //return the letter grade. e.g. A for grades above 90, B for grades between 80 and 89, etc
    public String getLetterGrade() {
        //implementation not shown
    }
}

1. For the following ArrayList...

   ArrayList<Grade> values = ...;

   which is a correct way to add up all the grades?

A. int sum = 0;
   for(Grade g: values)
       sum += g;

B. int sum = 0;
   for(Grade g: values)
       sum += g.getGrade();

C. int sum = 0;
   for(int i = 0; i < values.size(); i++)
       Grade g = values.get(i);
       sum += g.getGrade();

D. int sum = 0;
   for(int i = 0; i < values.size(); i++)
       Grade g = values.get(i);
       sum += g.grade;

E. All of the above  

   Grade is private and cannot be accessed this way

   Starts out of bounds
2. Write code to declare another `ArrayList` of `Grade` objects. Add the grades 92, 86, 79, and 54 to the list. Then add the grade 100 between 86 and 79. Then change the grade of 54 to a 60 (they did extra credit). Then write a loop to remove all the even grades from the list. Finally, write a `for-each` loop to print out all the values with their letter grade (no if cases allowed!)

```
ArrayList<Grade> list = new ArrayList<Grade>();
list.add(new Grade(92));
list.add(new Grade(86));
list.add(new Grade(79));
list.add(new Grade(54));
list.add(2, new Grade(100));
list.set(4, new Grade(60));

for (int i = list.size() - 1; i >= 0; i--)
    if (list.get(i) % 2 == 0)
        list.remove(i);

for (Grade g : list)
    System.out.println(g.getGrade() + " " + g.getLetterGrade());
```

3) Write a method that takes an `ArrayList` of integer values as a parameter and returns the smallest value in the list.

```
public int smallest(ArrayList<Integer> list)
{
    int small = list.get(0);
    for (int x : list)
        if (x < small)
            small = x;
    return small;
}
```