

Lesson 97: AP Prep #6 (W33D2)

Balboa High School

Michael Ferraro

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Do Now

- Make sure you have a copy of the 2015 practice test from the College Board.
- Take out your solution to [2007 FRQ #4](#).
- Using the docs [here](#),
 - 1 score your solution and then
 - 2 check the reference answers.

Aim

Students will work on problems in preparation for the AP exam.

Questions about 2007 FRQ #4?

- What questions do you have after having seen the solutions and scoring guide?

Quick Exercises

- Do these using a text editor and compile/run **only after you think you've got working code.**
- Pretend these are being graded for partial credit, just as you've seen you can get points awarded for parts of solutions to FRQs.
- Advance at your own pace.
- When finished, start the 2015 Practice Exam (see HW slide).

Quick Exercise #1

Write a class called `Stuff`.

- Give it a static variable that is used to count how many instances of `Stuff` have been created. Make this var private.
- The no-args constructor must increment the instance-counting var.
- Add a static method called `getPopulation()` that returns the # of instances of `Stuff`.¹
- Create a `main()` in which you create instances of `Stuff` and test `getPopulation()`.

¹recall that a static method may be called in this way:

`ClassName.methodName()`.

Quick Exercise #2


Write class `ArrayOfStuff`. In its `main()`,

- Declare an array of `Stuffs` that can hold 10 such objects.
- Before creating any `Stuffs`, print out the population of `Stuffs` using `getPopulation()`.
- Using a `for()` loop, fill the array. Instead of using the constant 10 in your `for()` loop's condition, use the appropriate keyword for arrays that indicates how many elements it may hold.
- Once the array is filled to capacity, print out the new population of `Stuffs`. This values should equal the array's capacity.

Quick Exercise #3

Modify `ArrayOfStuff`. After the statements you added to `main()` for the last exercise, add statements to do this:

- Resize the array of `Stuffs` to hold 15 objects.
- Check that the `#` of `Stuffs` is still 10. When doing so, make sure you print the return value from `getPopulation()` on the screen.
- Fill the remaining slots using a `for()` loop. Here's the catch: You cannot use any numerical constants in the setup of the `for()` loop!²
- Show that `getPopulation()` now returns 15.

² i.e., in `for (a ; b ; c)`, there may not be any numbers. 

Quick Exercise #4

Create class `ArrayListOfStuff`. In its `main()`,

- Create an `ArrayList` suitable for holding `Stuff` objects.
- Print the `ArrayList`'s starting size.
- Populate the `ArrayList` with `Stuffs` until the population is 107. Use a `while()` loop that uses `getPopulation()` as part of its running condition.
- Make sure the `ArrayList`'s size matches the population of `Stuffs`.
- Remove the last element.
- Do `ArrayList`'s size and population of `Stuffs` match? If not, explain why!

2015 Practice Exam: MC #1-20 (online version [here](#))

- Take no more than **40min!**
- Write on the exam.
- Answers are to be recorded online after you finish the second half of the problems (next class' HW).