

Homework 11

Part a.

Part a will use the file HW11a, and will create lambda functions to check the value of a student GPA. You will need to do the following (comments in HW11a will give information about where to do what, and a hint or two):

1. Create an interface GPAToPrint that has a single abstract function defined, checkGPA, which takes a float as a parameter and returns a Boolean.
2. In the function printGPA, you will add an if statement and a println statement. An iterator is supplied that shows how to iterate a Java Map and get both the Key and the Data from the map. Use the lambda function checker, passed as a parameter, to check the Float part of the map entry value, and print the student id and gpa if checker returns true.
3. Define two lambda functions GT3_5 and GT3_0 that take a float and return true if the float is ≥ 3.5 and ≥ 3.0 , respectively.
4. Call the printGPA function twice, where indicated by comments, to print out the list of students with GPAs ≥ 3.5 and 3.0 , respectively.

Part b.

Part b will do the same thing as Part a but will use a local class and uses the file HW11b.java.

1. Create an interface GPAToPrint that has a single abstract function defined, checkGPA, which takes a float as a parameter and returns a Boolean.
2. Create a local class GT3_5 that implements a checkGPA function that returns true if the float argument is ≥ 3.5 .
3. Create a local class GT3_0 that implements a checkGPA function that returns true if the float argument is ≥ 3.0 .
4. In the function printGPA, you will add an if statement and a println statement. An iterator is supplied that shows how to iterate a Java Map and get both the Key and the Data from the map. Call the checker function, using the GPAToPrint reference passed as a parameter, to check the Float part of the map entry value, and print the student id and gpa if checker returns true.
5. Create GT3_5 and GT3_0 objects, and call printGPA, passing them (and the map) as arguments to print out the list of students with GPAs ≥ 3.5 and 3.0 , respectively.

What to turn in:

Turn in a <userid> directory with the files HW11a.java and HW11b.java.

Grading points:

HW11a: 3 points for creating and using the lambda functions to check the values, 2 points for correct output (in particular, you should have values ≥ 3.5 and 3.0 , and all values ≥ 3.5 printed when checking for students with a GPA ≥ 3.0 should also be printed when checking for students with a GPA ≥ 3.5).

HW11b: 3 points for creating and using the lambda functions to check the values, 2 points for correct output (in particular, you should have values ≥ 3.5 and 3.0, and all values ≥ 3.5 printed when checking for students with a GPA ≥ 3.0 should also be printed when checking for students with a GPA ≥ 3.5).