

- *Summary:**
- 1) a constructor is code that runs when **new** is invoked such as:
 student1 = **new** Grade04A();
 - 2) a constructor is not a method although it looks like one without the return type in front of it.
 - 3) constructors have the same name as the class.
 - 4) constructors are usually used to initialize the instance class variables.
 - 5) If no value is assigned to the instance variables they are given default values such as 0 and null for strings.
 - 6) If there is no written code for a constructor Java supplies one with default values for the instance variables
 - 7) the default constructor is a no argument passing constructor
 i.e. nothing is in the parenthesis such as
 student1 = new Grade04A();
 - 8) a constructor with items(arguments) in the parenthesis is a constructor also and must use the same name as the class making it and the default constructor *overloaded* (same name produces 2 different results)

II. Use the original programs **APch02lab04TestA** and **Grade04A** to answer the following

- 1) What was the name of the constructor function 1) _____
- 2) How many constructor functions were there? 2) _____
- 3) How many default constructor functions were there? 3) _____
- 4) In the default constructor function what were the values for
 a) gradeAverage and b) finalExam? 4a) _____
b) _____

Turn in this sheet to be graded!

I. A) Constructors (2.6)

- 1) a) Open **Grade04A.java***
- b) Open and Run **APch02lab04TestA**
- c) Complete the output:

Done with the default constructor
 Done with the other constructor
 Student 1's grade info:
 getGrade() method:
 Grade Average:
 Final Exam:
 is the final average

Student 2's grade info:
 getGrade() method:
 Grade Average:
 Final Exam:
 is the final average

- 2) a) In **APch02lab04TestA** change **Grade04A student2 = new Grade04A(100, 80);** to
 Grade04A student2 = new Grade04A(60, 90);
- b) Run **APch02lab04TestA**
- c) Is the output the same for Student 1 as in #1) above? (yes/no) 2c) _____
- d) Is the output the same for Student 2 as in #1) above? (yes/no) 2d) _____
- e) In **APch02lab04TestA** change **Grade04A student2 = new Grade04A(60, 90);** back to
 Grade04A student2 = new Grade04A(100, 80);

- 3) a) In **Grade04A** in the *default constructor* change
 gradeAverage = 92; and **finalExam = 86;** to
 //gradeAverage = 92; and *//finalExam = 86;* (i.e. comment out the 2 statements)
- b) Run **APch02lab04TestA**
- c) Is the output the same for Student 1 as in #1) above? (yes/no) 3c) _____
- d) Is the output the same for Student 2 as in #1) above? (yes/no) 3d) _____
- e) In **Grade04A** in the *default constructor* change
 //gradeAverage = 92; and *//finalExam = 86;* back to
 gradeAverage = 92; and **finalExam = 86;** (i.e. uncomment out the 2 statements)

- 4) a) In **Grade04A** comment out the *default constructor* header, braces, and 3 lines of code
- b) Run **APch02lab04TestA**
- c) What is the error message _____

- d) In **Grade04A** uncomment out the *default constructor* header, braces, and 3 lines of code

(Note: Read pages 49(bottom)-51(top) for an explanation of constructors.)

OVER