# Chapter Review Questions

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Chapter 7 Review Questions (10 points):

1. Explain the purpose of keyword new and what happens when you use it.

**The purpose of the keyword new is to create an object of a class. When used, the object that is specified is created and its constructor is called to ensure proper initialization.**

1. What is a default constructor? How are an object’s instance variables initialized if a class has only a default constructor?

**A default constructor is a constructor that has no parameters. If a class only has a default constructor, all instance variables are initialized to their default values.**

1. What is the purpose of an instance variable?

**An instance variable allows us to store information for an object of a class. Moreover, this information is only known to a specific instance of a class, not all other instances.**

1. How can a program use class Scanner without importing it?

**A program can use a class’s fully qualified class name to avoid having to specify an import declaration. By using the Scanner class’s fully qualified name, you don’t need to import it.**

1. Explain why a class might provide a set method and a get method for an instance variable.

**A class might need to only give access to instance variables within the class and not to the outside. This is part of data encapsulation. A set method would allow us to use a method to modify the value of an instance variable, without having direct access to it. A get method is useful in returning data that we don’t have direct access to.**

1. Explain the concept of data encapsulation/information hiding.

**Data encapsulation refers to the idea of restricting direct access to a class’s attributes. Only the class that contains these members will have direct access to them. This is a good programming practice that ensures data protection. The data is only visible to the class and hidden for everyone else.**

1. Explain the difference between a local variable and an instance variable.

**A local variable’s contents are lost when the method that contains it completes its execution. On the other hand, an instance variable’s contents are stored or saved.**

1. What keyword is used for requesting memory from the system to store an object, then calls the corresponding class’s constructor to initialize the object?

**The keyword new is used.**

1. Write the Java code necessary to declare a class named Student.

**public class Student {**

**//Attributes and Methods Go Here.**

**}**

1. Write the Java code necessary to create a constructor named Student, that has the following parameters: first\_name as a String, last\_name as a String, and school\_year as an integer.

**public class Student {**

**private String firstName;**

**private String lastName;**

**private int schoolYear;**

**public Student(String firstName, String lastName, int schoolYear){**

**//Code goes here.**

**}**

**}**