



Computer Science Virtual Learning

HS Computer Science A

April 10th, 2020



Lesson: **Unit Summary**

Objective/Learning Target:

1. Students will recap concepts learned throughout the unit/week.

Activity

In this unit you started to learn a bit about the Java programming language. You were also introduced to the concept of a class or classification. A class in Java defines the properties of an object, which are called fields, and what an object can do, which are called methods. Classes also have constructors which initialize the values of the fields and can have a main method which is where execution will start.

Throughout this unit, we have covered different parts of a java class including Fields, Methods, Constructors and Main Methods for testing. These can be seen in the code to the right for the Vehicle class:

```
public class Vehicle {  
    private boolean usedFlag;  
    private String model;  
    private int numTires;  
  
    public Vehicle(boolean used, String theModel, int tires)  
    {  
        usedFlag = used;  
        model = theModel;  
        numTires = tires;  
    }  
  
    public void start() {}  
    public void turnLeft() {}  
    public void turnRight() {}  
    public void stop() {}  
    public void forward(int speed) {}  
  
    public static void main(String[] args)  
    {  
        Vehicle motorcycle1 = new Vehicle(false, "Honda", 2);  
        Vehicle car1 = new Vehicle(true, "Toyota", 4);  
        motorcycle1.startEngine();  
        car1.startEngine();  
        motorcycle1.forward(20);  
    }  
} // end class
```

Fields

Constructor

Methods

main for testing



Check Your Understanding - Parts of a Java Class

View the code to the right and group the code according to Fields, Constructors, Methods and Main for testing as shown in the example above.

```
public class Dog {  
    private boolean adopted;  
    private String breed;  
    private int age;  
    public Dog(boolean adopted, String breed, int age)  
    {  
        adopted = adopted;  
        breed = theBreed;  
        age = age;  
    }  
    public void bark() {}  
    public void eat() {}  
    public void drink() {}  
    public void sleep() {}  
    public static void main(String[] args)  
    {  
        Dog puppy1 = new Dog(true, "Beagle", 2);  
        Dog puppy2 = new Dog(false, "Poodle", 1);  
        puppy1.bark();  
        puppy2.eat();  
        puppy2.sleep();  
    }  
}
```



Check Your Understanding- Vocabulary

Match the following vocabulary covered in this unit with its definition:

- ___ Class
- ___ Compiler
- ___ Compile time error
- ___ Constructor
- ___ Fields
- ___ Java
- ___ Main Method
- ___ Method
- ___ Object
- ___ Syntax Error
- ___ Public
- ___ Private

- a. defines a type and is used to define what all objects of that class know and can do.
- b. Software that translates the Java source code (ends in .java) into the Java class file (ends in .class).
- c. a visibility keyword which is used to control the classes that have access. The keyword private means that only the code in the current class has direct access.
- d. an error in the specification of the program.
- e. An error that is found during the compilation. These are also called syntax errors.
- f. do the actual work in an object-oriented program.
- g. a visibility keyword which is used to control the classes that have access. The keyword public means the code in any class has direct access.
- h. Used to initialize fields in a newly created object.
- i. Defines behavior - what an object can do.
- j. holds data or a property - what an object knows or keeps track of.
- k. Where execution starts in a Java program.
- l. A programming language that you can use to tell a computer what to do.



For More Resources and to Check Answers

Go to: <https://runestone.academy/runestone/books/published/apcsareview/JavaBasics/Summary.htm>