public class StormTrooper {

// Static variable to keep track of total number of storm troopers

private static int numStormTroopers = 0;

// Static variables to store the minimum and maximum storm trooper ages

private static final int MIN\_AGE = 18;

private static final int MAX\_AGE = 50;

// Instance variables to store storm trooper's name, rank, and weapon

private String name;

private String rank;

private String weapon;

// Constructor method

public StormTrooper(String name, String rank, String weapon) {

this.name = name;

this.rank = rank;

this.weapon = weapon;

numStormTroopers++;

}

// Static method to get the total number of storm troopers created

public static int getNumStormTroopers() {

return numStormTroopers;

}

// Instance method to get the storm trooper's name

public String getName() {

return name;

}

// Instance method to set the storm trooper's weapon

public void setWeapon(String weapon) {

this.weapon = weapon;

}

// Instance method to make the storm trooper shoot

public void shoot() {

System.out.println(rank + " " + name + " is shooting with a " + weapon);

}

// Static utility method to check if a given age is valid for a storm trooper

public static boolean isValidAge(int age) {

return age >= MIN\_AGE && age <= MAX\_AGE;

}

// Static utility method to generate a random storm trooper rank

public static String getRandomRank() {

String[] ranks = {"Private", "Corporal", "Sergeant", "Lieutenant", "Captain", "Major", "Colonel"};

int index = (int) (Math.random() \* ranks.length);

return ranks[index];

}

}

Informática II - Prepa Tec Campus Eugenio Garza Lagüera  
Actividad 8: StormTrooper Class

Resuelve el siguiente ejercicio, y sube las clases resultante StormTrooper y StormTrooperTest a Canvas.

1. Open the StormTrooper.java file that contains the StormTrooper class.
2. Review the class definition and make sure you understand the purpose of each instance and static variable and method.
3. Add the missing setter and getter methods for the instance variables of class StormTrooper.java.
4. Create a new Java file called StormTrooperTest.java and define a main method inside it.
5. Inside the main method, create two instances of the StormTrooper class using the constructor method. Assign a random rank to teach of the StormTrooper instances by using the static method getRandomRank and the rank setter method.
6. Call the shoot instance method on each instance to make them shoot their weapons.
7. Print the name and rank properties of each instance using their getName and getRank instance methods.
8. Call the getNumStormTroopers static method to get the total number of storm troopers created so far. Print the result.
9. Create another instance of the StormTrooper class and set its properties using the instance methods.
10. Call the getNumStormTroopers static method again and print the result to verify that it has increased by one.