

# The University of Mississippi

## CSCI 111 - Computer Science I

### Lab 9

10 points

**Lab Topic:** Objects, Arrays, and reading from a file

#### Goals:

- Practice working with creating objects
- Practice working with an array of objects
- Practice with files

For this lab, you should use IntelliJ as it will be easier than NotePad++ and Command Prompt when dealing with multiple classes. Make sure you are saving your work to the H: drive. If not, enter H:

#### To start a program in IntelliJ:

- Select the New Project tab. Select Java, then hit next twice. Enter a name in the Project name (this could be CSCI111Lab9, or anything you want), make sure you are saving your work to the H: drive instead of the ~ for the Project location. Change it if needed. then hit finish.
- You now have a location to put your class.
- For this Lab, you will need to create two classes in this folder.

#### Task #1 Create a class called Puppy

- right click on the src folder, select New, and then Java Class. Make sure Class is highlighted as you will be making a class and name the class Puppy

This class will have 2 variables

1. A breed with coloring
2. And number of puppies of this type (breed and color)

Make sure they cannot be accessed directly outside of this class.

You will need an empty constructor.

You will need set and get methods for each variable.

#### Task #2 Create a class called Lab9Driver

- The same way you made the Puppy, see above.
- 1. In the main method, you will need a Puppy array of size 15
- 2. Iterate through the array to instantiate each cell of the array using the Puppy class's empty constructor.

\* For the below part, you may need a variable to keep track of how many elements of the array actually have data (logical size) and indexing.

3. Create File and Scanner objects

4. Using a loop, read through the provided file (puppyFile.txt)
  - a. Using a decision structure:
    - i. the length of a line from the text file will indicate which set method is needed to be called
    - ii. populate each cell of the Puppy array by calling and passing the values found in the text file.
  - \*You will need to reset the logical length variable for indexing.
5. Iterate through the array two different times to:
  - a. Print out all the data in the array.
  - b. Calculate and print the total number of puppies

Click the green arrow to the left of the class header or main method to run your code. You should see your output in the Console area.

### Submitting Your Work:

When complete, use the queue system to let the TA know that you are ready for your work to be checked. You will then be asked to demonstrate that your code works correctly. Submit your java file to Lab 9 on Blackboard.

To zip the work to submit:

while the project is open in IntelliJ, select "File" from the top menu, move the cursor down to "Export" then select "Project to Zip File". In the popup, select the destination (the default file name should be correct).

On the Lab computers:

You should have an IdeaProjects folder in your H: drive that contains your projects.

Ask a TA to help you if you are having problems.

### Sample output:

Breed's and coloring:	Number of puppies:
Golden Lab	3
Chocolate Lab	4
Spotted Hound	1
Blue Tick Hound	2
Chocolate Boxer	5
Spotted Boxer	2
Chocolate Pug	2
Spotted Beagle	7
Golden Great Dane	2
Blue Great Dane	3

There is a total of 31 puppies.