The University of Mississippi
CSCI 111 - Computer Science I

Lab 8 10 points

Lab Topic: Arrays, methods, reading from a file, and loops

Goals:

- Practice working with arrays
- Practice working with a text file to populate an array
- Practice working with methods
- Practice with loops

For this lab, you can use IntelliJ or NotePad++ and Command Prompt. If you are using IntelliJ,

For NotePad++ users:

- Simply open the Lab8 java file in NotePad++.
- You must have the baseballNumbers.txt file saved to the same directory or project as your Lab8.java file.

To start a program in IntelliJ:

- Open IntelliJ, click the New Project tab.
- Enter a name in the Project name (this could be CSCI111Lab8, or anything you want).
- If you are using a computer in Adler Lab, make sure you are saving your work to the H: drive instead of the ~ or C: drive for the Project location. Change it if needed.
- Ensure Java and IntelliJ are selected for Language and Build system. You shouldn't need to change the JDK. Uncheck the Add sample code and Generate code with onboarding tips checkboxes, then hit finish.

For IntelliJ users:

- Either drag and drop the provided Lab8.java file into the src folder OR right click on the src folder, select New, and then Java Class. Name the class Lab8, then copy and paste the code from the provided Lab8.java file into your class.

- You also need the baseballNumbers.txt file in the same project as your Lab8.java file. Simply drag the baseballNumbers.txt file to your Lab8 project in IntelliJ and drop it on the Project name (not in the src folder).

Task #1

- Do one task at a time!!! Be sure to run the code once you complete a Task.
- In IntelliJ to run the code:
- Click the green arrow to the left of the class header or main method. You should see your output in the Console area.

#1a: In the main method, Instantiate an integer array named: numbers - length 37.
#1b: Iterate through the "baseballNumbers.txt" file and populate the array (each cell of the array) using the data from the file. Remember a text file holds Strings, so you will need to use the Scanner nextInt method.
#1c: Iterate through the numbers array and print each number.
#1d: Sum the values from the array and print the total

Task #2

- Below and outside the main method, create a method to find the odd numbers in an integer array. The method should have an integer array in the parameter list.
- In the method, iterate through the integer array and calculate how many of the numbers are odd.
    - You will have to use the modulus operator.
- Print how many numbers were odd with a meaningful message.
- In the main method, call the method and pass the numbers array as the argument.

Task #3

- Below and outside the main method, create a method to print the length of words in a String array. The method should have a String array in the parameter list.
- In the method, using the parameter list String array, iterate through the array and print the length of each word with a meaningful message.
- In the main method, call the method and pass the words array as the argument.

Task #4

- Below and outside the main method, create a method to insert values into a double array. The method should return a double array, but has an empty parameter list.
- In the method, **#4a:** Instantiate a double array with a length of 20
- **#4b:** iterate through the array and place a value in each cell:
    - The value for each cell should be calculated by multiplying the loop control variable by .282 (the Ole Miss baseball team's overall batting average)
- In the main method, declare a double array and assign it a call to the method you just made.
- **#4c:** Iterate through the double array and print the values

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 8 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).

Using your own computer.

You should have an IdeaProjects folder under USERS/YourName for Windows and simply under your root directory for Mac’s. In that folder you should see the project name.

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.