CS3330 LAB 2 DUE 48 HOURS AFTER LAB ENDS

# Objectives:

Constructors

Accessor and Mutator Methods

Basic Parsing

# Submission Info:

cs\_submit CS3330\_LAB-*<sectionletter>* LAB2 *<yourpawprint>*.cs3330.lab2.zip

# Lab Material:

This lab2.zip doesn’t contain a project, the contents are LabTwoDriver.java with main only and EmployeeData.csv to be stored in a folder you create called EmployeeData.

Create a project and create a plain old folder in your project. Right click on your lab 2 project and choose “new” and select **Folder**, create the new folder called “EmployeeData”.

## LabTwoDriver.java

### Attributes to add:

NONE

### Methods to implement:

**public static void displayEmployees(Employee[] employeeDatabase)**

Traverses the employeeDatabase array and displays to the user, the employee’s name and age.

**public static Employee findHighestPaidEmployee(Employee[] employeeDatabase)**

Traverses the employeeDatabase array and return the highest paid employee.

**public static double totalCostOfAllEmployees(Employee[] employeeDatabase)**

Traverses the employeeDatabase array and returns the total salary of the employees

## Employee.java

### Attributes to add:

private String name;

private int age;

private double salary;

### Methods to implement:

**Employee (String name, int age, double salary)**

Calls the setters (Mutators) for each passed parameter to initialize the classes attributes

**private void setSalary(double salary)**

Verifies if the salary is greater than or equal to zero, If so, set the attribute salary to the passed parameter salary. If not, set the attribute salary to 2500.00.

**private void setAge(int age)**

Verifies if the age is less than 150 and greater than or equal to 18. If so, set the attribute age to the passed parameter age. if not set the attribute to 18.

**private void setName(String name)**

Initializes the attribute name to the passed parameter name.

**public String getName()**

returns the attribute name

**public int getAge()**

returns the attribute age

**public double getSalary()**

returns the attribute salary

## EmployeeDataReader.java

### Attributes to add:

String filePath;

### Methods to implement:

**public EmployeeDataReader(String filePath)**

Calls the setters (Mutators) for each passed parameter to initialize the classes attributes

**public EmployeeDataReader[] getEmployeeData()**

Reads from the file stored in the attribute filePath. The file used is stored in EmployeeData/EmployeeData.csv. A “csv” is a file structure that uses commas to delimited values, thus the meaning comma separated values (csv). After you read a line from the file use the **split(“,”)** string method, that will decompose the line into an array of strings. Next you need to create a new Employee Object with the contents from the array of strings returned from split and store that into an array of Employee Objects. An initialized array of Employees will be returned to the caller.

***The EmployeeData.csv file structure is: name,age,salary***

**Note:** Check for overflow of your array, never trust that the number of lines in a file will be the same size as your array! Make sure you use the int **Integer.parseInt(String s)** and double **Double.parseDouble(String s)** to convert integers and doubles respectively. Consult the lab lecture slides for assistance (Posted Tuesday at 3pm).

**private void setFilePath (String filePath)**

Initializes the attribute name to the passed parameter name.

**private String getFilePath()**

returns the attribute filePath to this **class only,** usewhen creating the File object in getEmployeeData.

# PROGRAM OUTPUT

Matthew England 22

Ankil Patel 21

Madison DeHart 23

Terry Cruz 18

Chuck Norris 18

Donald Guillaims 35

Doctor Who 18

John Snow 18

Walter White 56

Steve Rogers 23

Highest Paid Employee is John Snow at 250000.0

Total Cost of All Employees is 880000.0

GRADE GUIDE

30 possible points plus 5 points possible

If your program does not compile, produce any input/output (I/O) because most of the source code is commented out then your lab will receive a grade of zero points. If your lab has any runtime errors (Such as NullPointerException or ArrayOutOfBounds), the homework will also receive zero points. If you don’t have your name on all your class files, you will receive a zero points as well.

# Grading Rubric

8 points: Java Commenting

2 points: displayEmployees

3 points: findHighestPaidEmployee

2 points: totalCostOfAllEmployees

8 points: Employee.java

7 points: EmployeeDataReader.java

# BONUS:

Implement this method inside of LabTwoDriver.java:

Make any change you want to achieve the bonus, cannot be hardcoded

**public static void findBiggestAgeDifferenceBetweenEmployees(Employee[] employeeDatabse)**

Finds the largest difference between the youngest and oldest employee in the employeeDatabse array. Outputs the age difference to the user.