

## CS 435/535 Assignment #6 – Spring 2020

**Project Overview:** In this project, you will use **Smalltalk** to complete the same payroll project done previously. Again, you will implement four (4) classes: **Employee**, **SalariedEmployee**, **HourlyEmployee**, and **CommissionEmployee**. **Employee** is the base class, and the other three classes are derived from the **Employee** class. They need to be saved into four different files, **employee.st**, **salaried.st**, **hourly.st**, and **commission.st** respectively.

For this project, you need to write the **payroll.st** file that will read the employees from a file with its filename furnished as a command line argument. You can download a sample employees file named **employee.dat** from Blackboard. As shown below, each employee occupies one line and two attributes are separated by one or more spaces. The number of employees in the file is unknown in advance.

```
salaried Jeremy Greer 1800
hourly Maria Garcia 25 8.50
commission Floyd Jenkins 300 3000 .08
hourly Carlton West 45 12.50
commission Rose Harvey 300 15000 .15
hourly Viola Jennings 65 17.50
salaried Robert Johnson 2700
```

The user can execute your program in two ways, with two or four arguments. For example,  
**gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat count**  
or

**gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat count ge 2000**

If the number of arguments is incorrect, please print out a usage message and quit. If the employees file can't be opened for reading, print out an error message and quit. Please see the sample executions at the end for details. You can assume the user will enter the other arguments correctly. You can also assume the employees file follows the correct format and contains valid data if it can be opened.

It is not required, but it might be a good idea to define another class in **payroll.st** to represent all the employees and the class can respond to the messages that correspond different actions requested (e.g. **count print min max total avg**).

### What You Need To Do

- Create a directory named **project6** for this assignment. Download **employees.dat** from Blackboard to the **project6** directory, if needed.
- Create 4 classes to be saved in **employee.st**, **salaried.st**, **hourly.st**, and **commission.st** respectively.
- Create another file named **payroll.st** to read the employees file and to perform the requested action.
- When you are ready to submit your project, compress your **project6** directory into a single (compressed) zip file, **project6.zip**.
- Once you have a compressed zip file named **project6.zip**, submit that zip file to Blackboard.
- Your submission will be graded on **cs-parallel.ua.edu**. Make sure to test it on that machine before submission.
- Make sure to follow the above instructions exactly. Otherwise your submission may not be graded.

**Assignment #6 is due at 11:59pm on Wednesday, March 25. Late projects are not accepted.**

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**You may not post this document or a portion of this document to a site  
such as chegg.com without prior written authorization.**

**An assignment shall be completed individually, with no sharing of code or solutions.**

**All submissions will go through MOSS (Measure Of Software Similarity) for similarity check.**

**The University of Alabama's Code of Academic Conduct will be rigorously enforced.**

## Sample executions of the program

gst employee.st salaried.st hourly.st commission.st -f payroll.st

Usage: gst employee.st salaried.st hourly.st commission.st -f payroll.st action

or

Usage: gst employee.st salaried.st hourly.st commission.st -f payroll.st action operator threshold

Valid actions: count print min max total avg

Valid operators: eq ne gt ge lt le

gst employee.st salaried.st hourly.st commission.st -f payroll.st xxxx.dat count

Unable to open xxxx.dat for reading

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat count

There are 7 employees

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat total

Total payment is \$9343.75

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat avg

Average payment per employee is \$1334.82

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat min

Hourly employee: Maria Garcia

hours worked: 25.00, hourly rate: 8.50

earned \$212.50

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat max

Salaried employee: Robert Johnson

weekly salary: 2700.00

earned \$2700.00

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat print ge 2000

Commission employee: Rose Harvey

minimum salary: 300.00, sales amount: 15000.00, commission rate: 15.00%

earned \$2250.00

Salaried employee: Robert Johnson

weekly salary: 2700.00

earned \$2700.00

gst employee.st salaried.st hourly.st commission.st -f payroll.st employees.dat max lt 1800

Hourly employee: Viola Jennings

hours worked: 65.00, hourly rate: 17.50

earned \$1487.50