# Lab: Inheritance

## Background

A company has three employee categories: salaried, wage and part-time. All employees have an employee ID number, name and SIN. Salaried employees have ID numbers starting with 0–4, whereas wage employee’s IDs start with 5–7 and part-time employee’s IDs start with 8–9. All employees are paid weekly and payment for each employee category is calculated as follows:

* Salaried employees are paid a set salary each week.
* Wage employees’ pay is calculated using **hourly** **rate \* work hours** with overtime paid at time and a half for any hours worked over 40 in one week.
* Part-time employees’ pay is calculated based on **hourly** **rate \* work hours** with no overtime paid.

## Instructions

1. Create the classes as shown in the diagram on the following page.
2. Place the **employees.txt** data file in the **res** folder.
3. Create an inheritance tree whereby Salaried, PartTime and Wages inherit from Employee.
4. Create an application with the following methods:
   1. Fill a list with objects based on the supplied data file.
   2. Calculate and return the average weekly pay for all employees.
   3. Calculate and return the highest weekly pay for the wage employees, including the name of the employee.
   4. Calculate and return the lowest salary for the salaried employees, including the name of the employee.
   5. What percentage of the company’s employees fall into each employee category?

+Employee()

+Employee(id:String,

name:String,

address:String,

phone:String,

sin:long,

dob:String,

dept:String)

Getters

Setters

+toString():String

**Employee**

-id:String

-name:String

-address:String

-phone:String

-sin:long

-dob:String

-dept:String

**Salaried**

**Wages**

**PartTime**

-salary:double

-rate:double

-hours:double

-rate:double

-hours:double

+Wages()

+Wages(

id:String,

name:String,

address:String,

phone:String,

sin:long,

dob:String,

dept:String,

rate:double,

hours:double)

Getters

Setters

+getPay():double

+toString():void

+Salaried()

+Salaried(

id:String,

name:String,

address:String,

phone:String,

sin:long,

dob:String,

dept:String,

salary:double)

Getters

Setters

+getPay():double

+toString():void

+PartTime()

+PartTime(

id:String,

name:String,

address:String,

phone:String,

sin:long,

dob:String,

dept:String,

rate:double,

hours:double)

Getters

Setters

+getPay():double

+toString():void