North South University
Department of Electrical and Computer Engineering
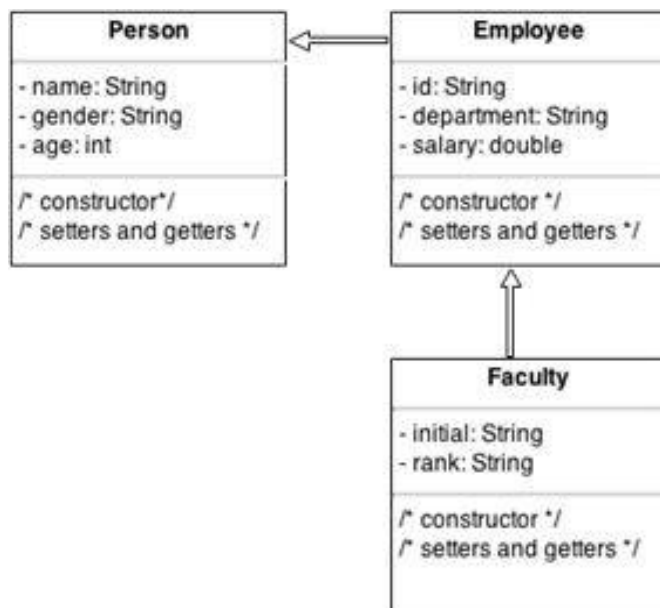## CSE 215L: Programming Language II Lab

Lab – 9: Inheritance

Objective:
- To understand inheritance and its usage
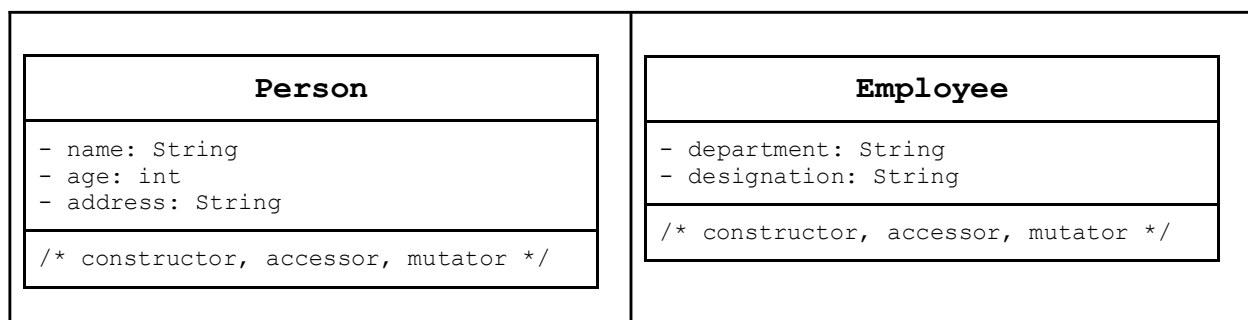- To learn to utilize inheritance to ensure reusability of existing code

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Task:

1. Implement the following classes:

```
      Person                        Employee
--------------------          --------------------
- name: String                - id: String
- gender: String              - department: String
- age: int                    - salary: double
--------------------          --------------------
/* constructor*/              /* constructor */
/* setters and getters */     /* setters and getters */


                              Faculty
                        --------------------
                        - initial: String
                        - rank: String
                        --------------------
                        /* constructor */
                        /* setters and getters */
```

In main method, create a Faculty object and display name, age, salary and initial. Call the toString() method of the Faculty object to display all of its information.

2. Implement the following classes:

```
        Person                              Employee
-----------------------------     -----------------------------
- name: String                    - department: String
- age: int                        - designation: String
- address: String                 -----------------------------
-----------------------------     /* constructor, accessor, mutator */
/* constructor, accessor, mutator */
```

```
┌─────────────────────────────────────────┬─────────────────────────────────────────┐
│          PartTimeEmployee               │          FullTimeEmployee               │
├─────────────────────────────────────────┼─────────────────────────────────────────┤
│ - hours: double                         │ - basic: double                         │
│ - rate: double                          │ - allowance: double                     │
├─────────────────────────────────────────┼─────────────────────────────────────────┤
│ /* constructor */                       │ /* constructor */                       │
│ /* accessor-mutator */                  │ /* accessor-mutator */                  │
│ /* toString */                          │ /* toString */                          │
│ + salary(): double                      │ + salary(): double                      │
└─────────────────────────────────────────┴─────────────────────────────────────────┘
```

The relationship is as follows:

Employee extends Person

PartTimeEmployee extends Employee

FullTimeEmployee extends Employee

Create an object for PartTimeEmployee and FullTimeEmployee and print their salary.

For FullTimeEmployee, basic is the base salary, i.e. 15000.

Allowance is usually provided as percentage, i.e. 25%.

So the total salary of a full time employee = 15000 + 25% of 15000 = 18750