

Inheritance, Instance Variables, Superclasses and overriding

The code below defines a class that can be used to represent an employee of a company:

```
public class Employee{
    private String firstName;
    private String lastName;
    private int yearOfBirth;
    private static int employeeCount = 0;

    public Employee(String fName, String lName, int year){
        firstName = fName;
        lastName = lName;
        yearOfBirth = year;
        employeeCount ++;
    }

    public static int getCount(){
        return employeeCount;
    }
}
```

i) Write a toString method that returns the names and date of birth in one line.

ii) Write some code that:

- Creates two instances of the Employee class – using different names for each
- Prints out the names of the employees using the toString method.
(Do you need to explicitly call the toString method?)
- Uses the getCount method (of the Employee class) to print out the number of employees before and after the creation of the two instances of the Employee class.

iii) Write a new class called FixedTermEmployee which is a subclass of Employee:

- Include an attribute to represent the length of the employee's contract (in months).
- Include a constructor method (with four parameters) that utilises the superclass constructor method and also sets the additional contract length variable.
- Write a toString method that will both utilise the toString method of the superclass, and override the superclass method when it is called on an instance of the FixedTermEmployee class.

iv) Questions about inheritance:

1. Can a class extend more than one class or only one class?
2. Can a class be extended by more than one class?
3. From what java class do all classes implicitly inherit?