**Java**

Object Oriented Development

SOLID Exercises

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| 1.0 | 20/ 11 / 20 | Adrian O'Brien | First draft |
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## Exercises

1. You have been provided with the following class diagram.

|  |
| --- |
| Employee |
| -employeeId: int  -employeeName: String  -salary: double |
| +addEmployee(employee: Employee)  +removeEmployee(employeeId:int)  +updateEmployee(employee:Employee)  +listEmployees(): List<Employee> |

In this exercise you need to redesign the classes to allow a list of employees to be maintained using all the above methods. Make sure your solution adheres to SOLID principles.

2. In what ways does the following class break SOLID principles?

|  |
| --- |
| Account |
| -hasOverdraft  -hasInterestPayment  -hasInterestCharge  -accountNumber  -accountName  -balance  -PIN |
| // getter and setter methods |

Redesign the system so that it adheres to SOLID principles.

3. Rewrite this system adhering to SOLID principles:

|  |
| --- |
| Employee |
| -employeeId  -employeeName  -salary  +add(manager: Manager)  +add(director: Director)  +add(commissionWorker: CommissionWorker)  +add(salariedWorker: SalariedWorker) |
| // getter and setter methods |

4. You have received the following class:

|  |
| --- |
| Vehicle |
| -engineSize: int  -manualAssistance: boolean  -waterPowered: boolean  -currentSpeedInNauticalMilesPerHour  -currentSpeedInLandMilesPerHour  -abilityToFly: boolean  -numberOfAxles: int |
| // getter and setter methods |

Redesign this class so that it adheres to SOLID principles