

# 1. Car and Engine Relationship (Composition)

## Steps to Implement

### 1. Create an Engine class

- Add properties like `horsepower` and `fuelType` .
- Create a constructor to initialize these values.
- Create a method `startEngine()` to print a message.

### 2. Create a Car class

- Define an instance variable `engine` of type `Engine` .
- Initialize `Engine` inside the `Car` constructor (composition).
- Create a method `startCar()` that calls `engine.startEngine()` .

### 3. Create a main method

- Instantiate an `Engine` object.
  - Instantiate a `Car` object and pass the `Engine` .
  - Call `startCar()` to see the result.
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# 2. Library and Book Relationship (Aggregation)

## Steps to Implement

### 1. Create a Book class

- Define properties like `title` and `author` .
- Create a constructor to initialize these values.
- Create a method `displayBookInfo()` to print details.

### 2. Create a Library class

- Define an instance variable `book` of type `Book` .
- Create a constructor that accepts a `Book` object.
- Create a method `displayLibraryInfo()` that calls `book.displayBookInfo()` .

### 3. Create a main method

- Instantiate a `Book` object.
  - Instantiate a `Library` object with a `Book` .
  - Call `displayLibraryInfo()` .
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## 3. Employee and Address Relationship (Composition)

### Steps to Implement

#### 1. Create an `Address` class

- Define properties like `city` and `state` .
- Create a constructor to initialize them.
- Create a method `displayAddress()` to print details.

#### 2. Create an `Employee` class

- Define an instance variable `address` of type `Address` .
- Initialize `Address` within the `Employee` constructor.
- Create a method `displayEmployeeInfo()` that calls `address.displayAddress()` .

#### 3. Create a `main` method

- Instantiate an `Address` object.
  - Instantiate an `Employee` object with `Address` .
  - Call `displayEmployeeInfo()` .
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## 4. Bank and Account Relationship (Aggregation)

### Steps to Implement

#### 1. Create an `Account` class

- Define properties like `accountNumber` and `balance` .
- Create a constructor to initialize them.
- Create a method `displayAccountInfo()` .

#### 2. Create a `Bank` class

- Define an instance variable `account` of type `Account` .
- Create a constructor that accepts an `Account` object.
- Create a method `displayBankInfo()` that calls `account.displayAccountInfo()` .

#### 3. Create a `main` method

- Instantiate an `Account` object.
- Instantiate a `Bank` object with an `Account` .
- Call `displayBankInfo()` .