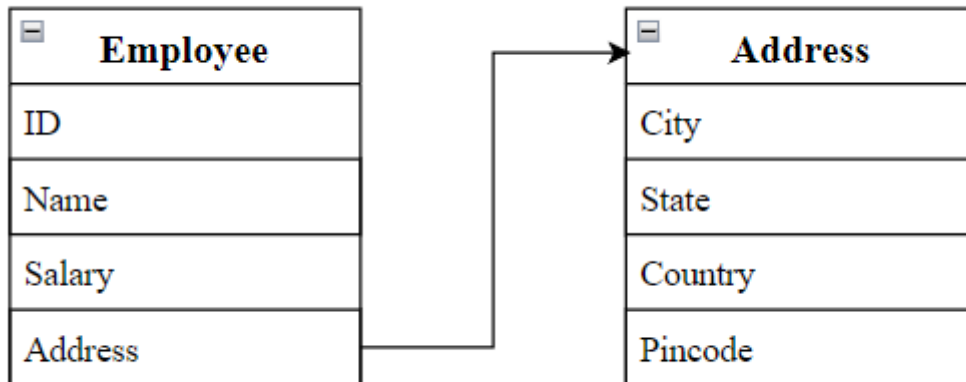


# Aggregation in Java

- Class having an entity as a reference is called as Aggregation.
- Represents **HAS-A** relationship.
- Consider for example, entity **Employee** contains data members as **ID**, **Name**, **Salary** and **Address**.
- Here, **Address** is another entity which contains data members as **City**, **State**, **Country** and **Pincode**.



- **Employee** has an entity reference **Address**, so relationship is **Employee HAS-A Address**.
- Code reuse is achieved.
- Inheritance should be used only if the relationship **IS-A** is maintained throughout the lifetime of the objects involved; otherwise, aggregation is the best choice.

## Example of aggregation

```
// Address.java
public class Address {
    String city, state, country;
    int pincode;

    public Address(String city, String state, String country, int pincode) {
        this.city = city;
        this.state = state;
        this.country = country;
        this.pincode = pincode;
    }
}

// Employee.java
public class Employee {
    int id;
    String name;
    double salary;
    Address address;
```

```

public Employee(int id, String name, double salary, Address address) {
    this.id = id;
    this.name = name;
    this.salary = salary;
    this.address = address;
}

void display() {
    System.out.println(id + " " + name + " " + salary);
    System.out.println(address.city + " " + address.state + " " +
address.country + " " + address.pincod);
}
}

// Main.java
public class Main {
    public static void main(String[] args) {
        Address address1 = new Address("Mumbai", "Maharashtra", "India",
400011);
        Address address2 = new Address("Surat", "Gujarat", "India", 335009);

        Employee employee1 = new Employee(101, "Parth", 50000, address1);
        Employee employee2 = new Employee(102, "Lily", 40000, address2);

        employee1.display();
        employee2.display();
    }
}

```

Output:

```

101 Parth 50000
Mumbai Maharashtra India 400011
102 Lily 40000
Surat Gujarat India 335009

```