

Exploring ORM Inheritance

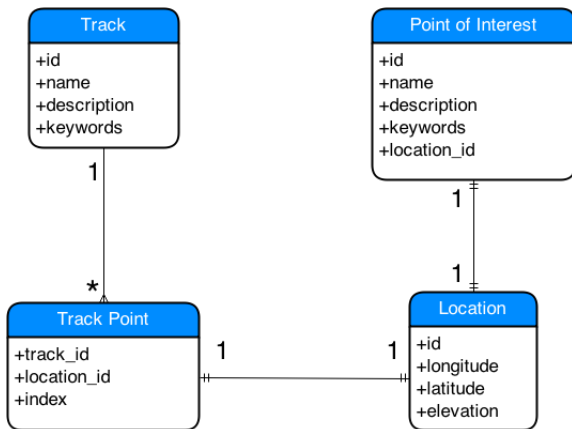
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November 10, 2014

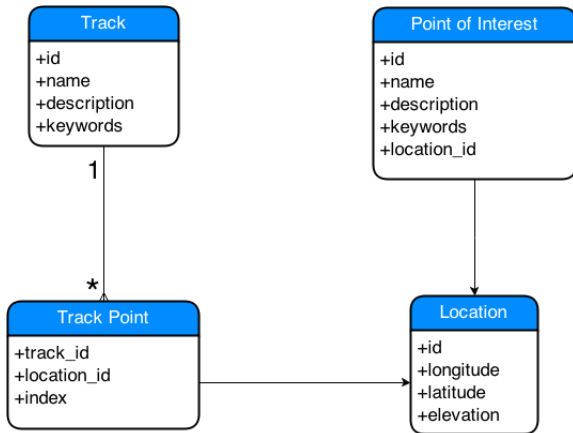
Object-Relational Mapper(ORM)

- Database Abstraction Layer
- Lets you query and manipulate data from a database using an object paradigm.
- Abstracts SQL statements.
- Can maintain model relationships in code.

Composition Design



Inheritance Design



Entity Framework

ORM for .NET Framework

Inheritance Types

- Table-per-Type (TPT) inheritance
- Table-per-Hierarchy (TPH) inheritance (default)
- Table-per-Concrete Class (TPC) inheritance

Table-per-Type (TPT) inheritance

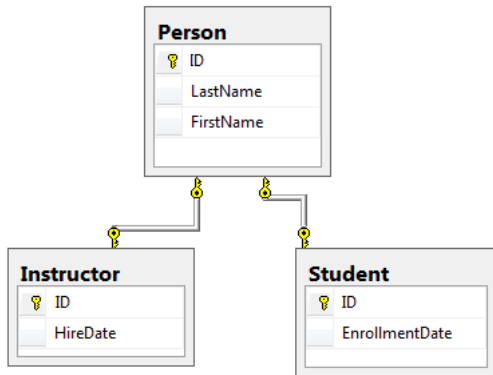


Table-per-Hierarchy (TPH) inheritance

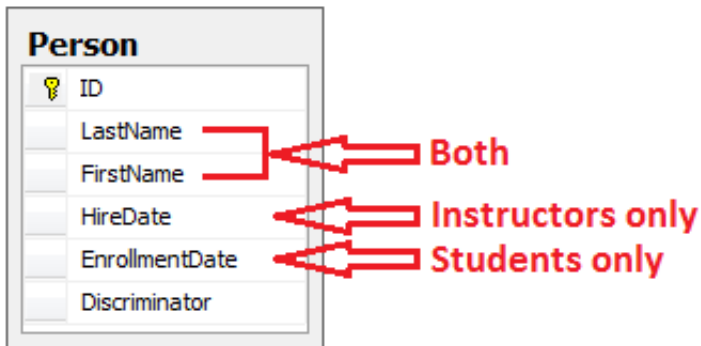
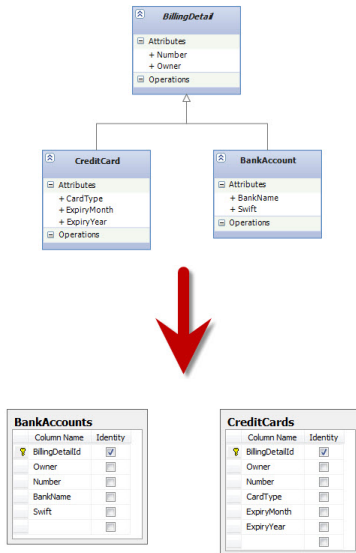


Table-per-Concrete Class (TPC) inheritance



Ruby on Rails: Active Record

Single Table Inheritance (STI)

```
1  class CreateLocation < ActiveRecord::Migration
2    def change
3      create_table :locations do |t|
4        t.decimal :longitude, precision: 10, scale: 6, null: false
5        t.decimal :latitude, precision: 10, scale: 6, null: false
6        t.decimal :elevation
7
8        t.string :type
9      end
10    end
11  end
12
13
```

Single Table Inheritance (STI)

```
1  class Location < ActiveRecord::Base
2  end
3
4  class TrackPoint < Location
5  end
6
7  class Waypoint < Location
8  end
9
```

Single Table Inheritance (STI)

- Useful for tables with same fields but different behaviours.
- Unable to add additional fields to subclasses.

Hibernate (Java)

- Table-per-Hierarchy (TPH) inheritance
- Table per Type (TPT) inheritance
- Table-per-Concrete Class (TPC) inheritance

Eloquent (Laravel 4)(PHP)

- Can manually create Single Table Inheritance support.
- <http://snooptank.com/single-table-inheritance-with-eloquent-laravel-4/>

Discussion

- Composition vs Inheritance
- Does inheritance belong in the database?
- Is the Don't-Repeat-Yourself principle violated with similar tables?

Questions?