

Mapping Many-to-Many and One-to-One Relationships



Julie Lerman

MOST TRUSTED AUTHORITY ON ENTITY FRAMEWORK

@julielerman thedatafarm.com



Module Overview



Understanding nature of many-to-many in EF Core

Aligning classes and mappings for many-to-many

Adding a one-to-one relationship

Migrating the database to reflect model changes



Understanding EF Core's Many-to-Many Mapping



EF Core will not
magically work out
many-to-many relationships



Many-to-Many Pattern We'd Like to Use

This was supported in EF6. Uses “magic” to map to join table.

```
public class Samurai
{
    public int SamuraiId {get;set;}
    public string Name {get;set;}
    public List<Battle> BattlesFought {get;set;}
}

public class Battle
{
    public int BattleId {get;set;}
    public string Name {get;set;}
    public List<Samurai> SamuraisInBattle {get;set;}
}
```



Many-to-Many Pattern Required for EF Core

Future version will also allow the alternate way

```
public class Samurai
{
    public int SamuraiId {get;set;}
    public string Name {get;set;}
    public List<SamuraiBattle> BattlesFought {get;set;}
}

public class SamuraiBattle
{
    public int BattleId {get;set;}
    public int SamuraiId {get;set;}
}

public class Battle
{
    public int BattleId {get;set;}
    public string Name {get;set;}
    public List<SamuraiBattle> SamuraisInBattle {get;set;}
}
```

} Map composite key



Many-to-Many Relationship

Relational Database: Join Table



EF Core: Join Entity



You can configure
mappings that don't follow
EF Core's conventions



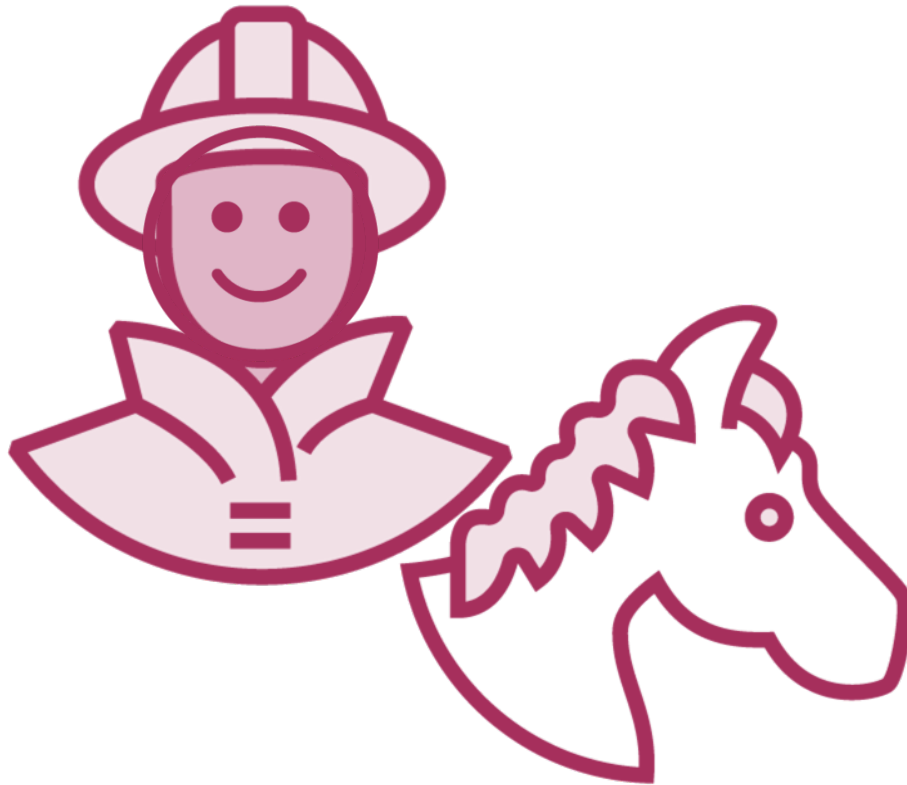
Setting Up the Many-to-Many Relationship



Adding a One-to-One Relationship



Dependent End of 1:1 is Always Optional



Samurai can have a horse

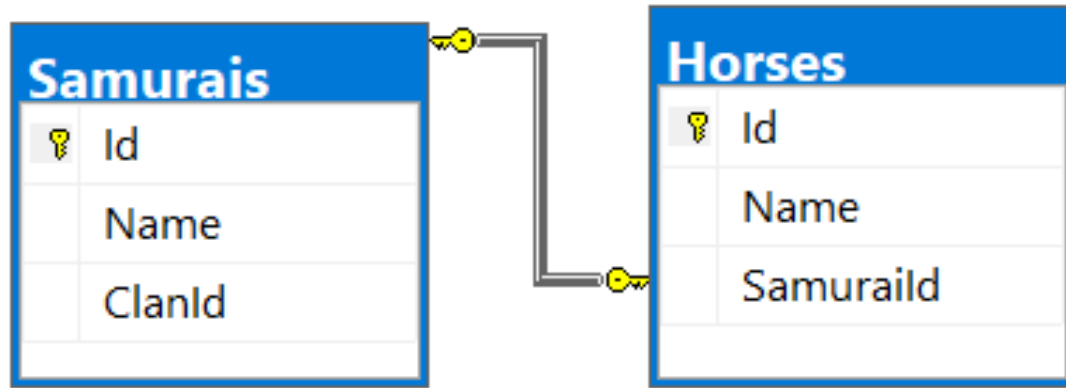


Samurai can be without a horse

Visualizing How EF Core Sees Your Model

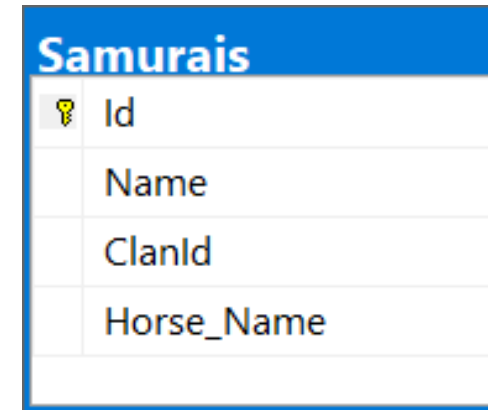


Mapping One-to-One Relationships



Default

Dependent gets its own table



Advanced

Dependent data in principal table



Controlling Table Names with Mappings



Running Migrations for the Model Changes



Review

Learned how EF Core sees many-to-many relationships

Implemented many-to-many and mapped its composite key

Implemented a one-to-one learning about defaults e.g., optional dependents and separate tables

Visualized model EF Core Power Tools

Learned how to control EF Core infers table names

Migrated database to apply model changes

Resources

Entity Framework Core on GitHub github.com/aspnet/entityframework

EF Core Documentation docs.microsoft.com/ef

EF Core Power Tools on GitHub github.com/ErikEJ/EFCorePowerTools/wiki

Data Points - DDD-Friendlier EF Core 2.0 (has insights into one-to-one)
msdn.microsoft.com/magazine/mt842503

Arthur Vickers (of the EF Core team) blog series on many-to-many:
blog.oneunicorn.com/2017/09/25/many-to-many-relationships-in-ef-core-2-0-part-1-the-basics/



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