

# Working with Views, Stored Procedures and Raw SQL

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# Module Overview



Using migrations to add views & stored procedures to a database

Mapping scalar and table view functions

Understanding and mapping keyless entities

Mapping and querying with database views

Dual mapping views and tables

Querying with raw SQL commands and stored procedures

Executing SQL commands on the database



# Adding Views and Other Database Objects Using Migrations

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# EF Core 5 Allows You To Work Directly With

**Stored Procedures**

**Views**

**Scalar Functions**

**Table View  
Functions**

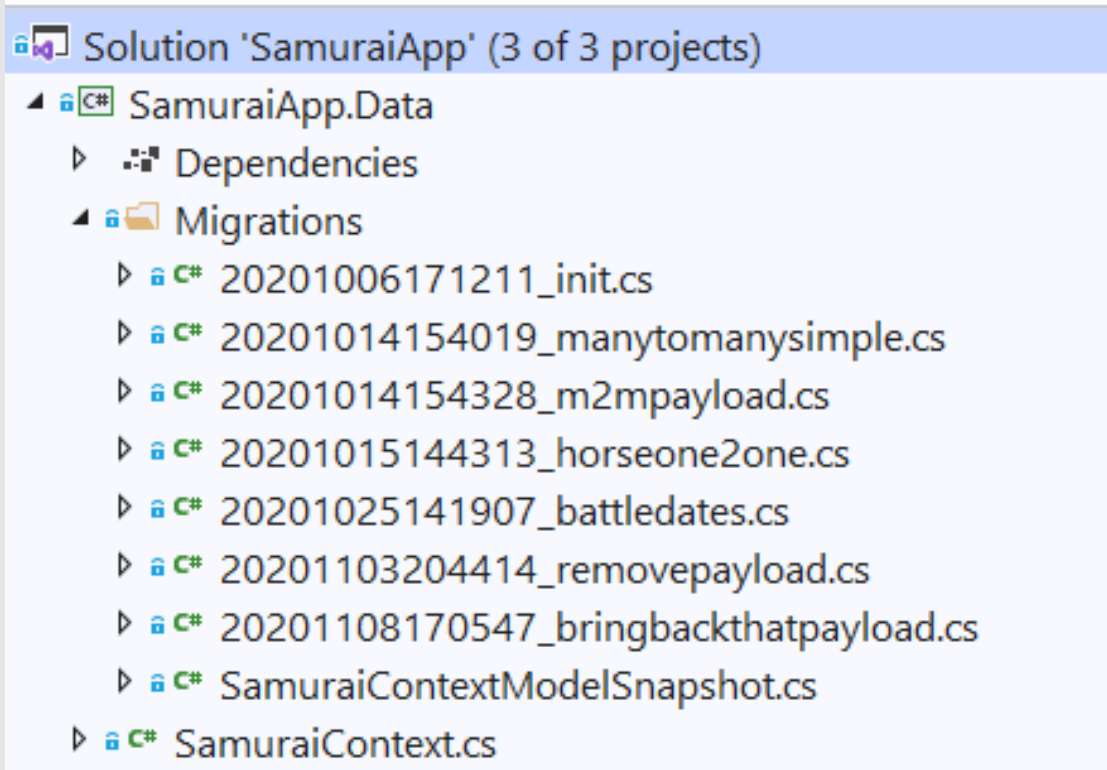
**Map to Queries in  
DbContext**



Consistent workflows are important whether you are solo or working on a team

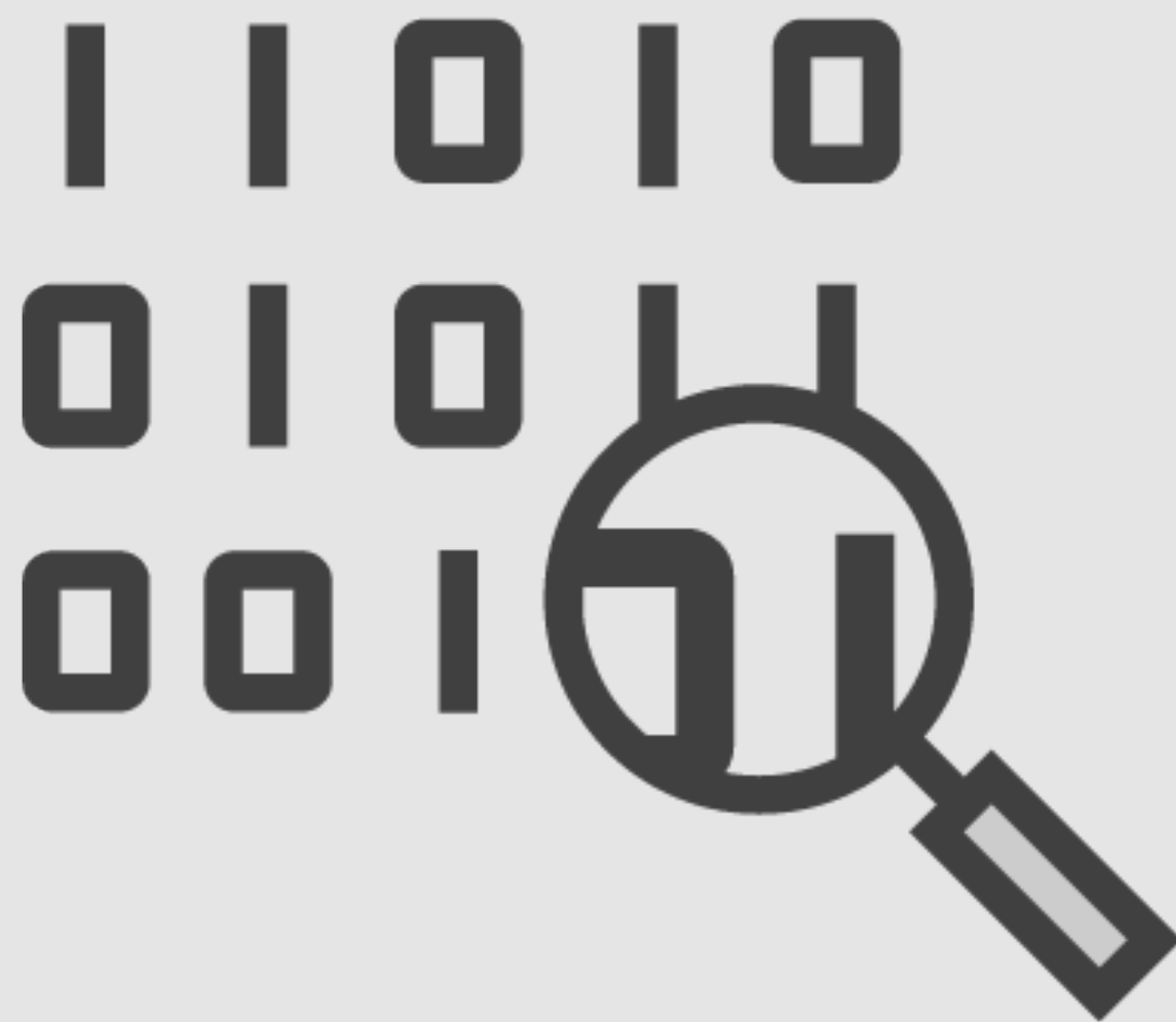


# Already Using Migrations for Schema Changes?



Include schema changes, e.g., adding views or creating indexes in custom migration files






# Using Keyless Entities to Map to Views

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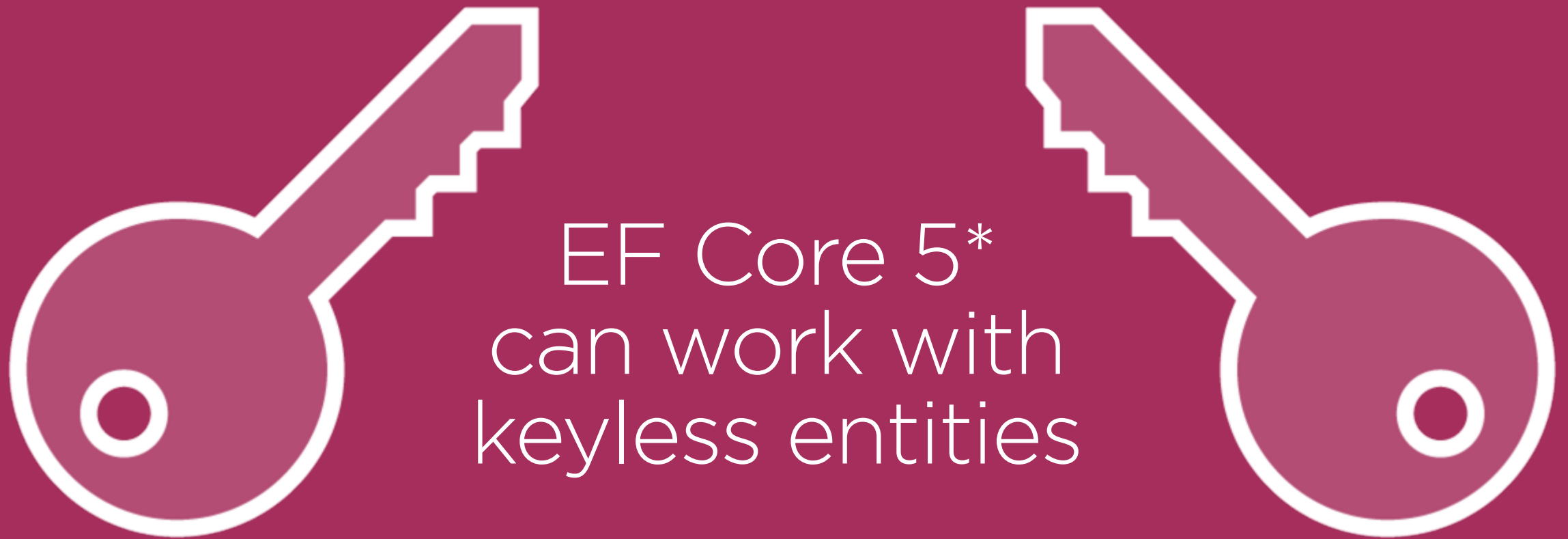






Historically,  
EF & EF Core only  
understood  
entities with keys





EF Core 5\*  
can work with  
keyless entities

\* This feature arrived in EF Core 3



EF Core 2.1/2.2 Query Types  
**are now**  
**Keyless Entities**



# Keyless Entities != Non-Tracking Queries

Entity has a key property

No-tracking is optional

Maps to tables with PK

**Non-Tracking Query**

Entity has a key property

Maps to view and to table

Query from view, update to table

**New to EF Core 5.0!**

(see link in resources)

No key property in entity

Will never be tracked

Maps to tables or views with no primary key

**Keyless Entities**



# Querying the Database Views

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# Querying with Raw SQL

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```
_context.Samurais.FromSQLRaw("some sql string").ToList();  
_context.Samurais.FromSQLRawAsync("some sql string").ToList();  
_context.Samurais.FromSQLInterpolated($"some sql string {var}").ToList();  
_context.Samurais.FromSQLInterpolatedAsyn($"some sql {var}").ToList();
```

## DbSet Methods to Run Raw SQL

Synchronous and asynchronous options

Special method for interpolated strings

Creates an IQueryable, so you still need an execution method

Use parameters to avoid SQL injection!!

# Raw SQL Results Rules (Limitations)



**Must return data for all properties of the entity type**



**Column names in results match mapped column names**



**Query can't contain related data**



**Only query entities and keyless entities known by DbContext**







# Coming from EF Core 2?

Method names changed  
in EF Core 3 from  
earlier versions of EF Core!



# Interpolated Strings

```
var character="Farmer Manzô";
```

```
var someString=$"Happy Birthday to you, {character}";
```



# Running Stored Procedure Queries with Raw SQL

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# Formatted Strings

```
var character="Farmer Manzô";
```

```
var age=78;
```

```
var s= String.Format("Happy Birthday to you, {0}",  
                      character);
```

```
var s= String.Format("Happy {0} Birthday to you, {1}",  
                      age, character);
```



# Executing Non-Query Raw SQL Commands

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```
_context.Database.ExecuteSQLRaw("some SQL string");  
_context.Database.ExecuteSQLRawAsync("some SQL string");  
_context.Database.ExecuteSQLInterpolated($"some SQL string {variable}");  
_context.Database.ExecuteSQLInterpolatedAsync($"some SQL string {var}");
```

## Run Raw SQL for Non-Query Commands

**Only result is number of rows affected**

**On-the-fly SQL or Stored Procedures**



# Review

Used customized migrations to add views, stored procedures and more to DB

Learned about keyless entities and mapped them to a database view

Used DbSet to query that database view

More querying using raw SQL and stored procedures including interpolated strings

Execute non-query commands from the DbContext.Database property

...and a handy way to delete entities!

# Resources

Entity Framework Core on GitHub [github.com/dotnet/efcore](https://github.com/dotnet/efcore)

EF Core Documentation [docs.microsoft.com/ef](https://docs.microsoft.com/ef)

EF Core Query Types Consolidated with Entity Types  
[docs.microsoft.com/en-us/ef/core/what-is-new/ef-core-3.0/breaking-changes#qt](https://docs.microsoft.com/en-us/ef/core/what-is-new/ef-core-3.0/breaking-changes#qt)

Composing Raw SQL Queries with LINQ  
[docs.microsoft.com/en-us/ef/core/querying/raw-sql#composing-with-linq](https://docs.microsoft.com/en-us/ef/core/querying/raw-sql#composing-with-linq)

Entity Framework Core 5: Building on the Foundation [codemag.com/Article/2010042](https://codemag.com/Article/2010042)

“Mapping Database Scalar Functions” in EF Core 2: Mappings Course [bit.ly/2LppcMj](https://bit.ly/2LppcMj)

Flexible query/update mapping in EF Core 5: [bit.ly/3kvgCNc](https://bit.ly/3kvgCNc)

Table value functions in EF Core 5 [bit.ly/36qJRf6](https://bit.ly/36qJRf6)





# Up Next!

EF Core in an  
ASP.NET Core app



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