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## Entity Framework – introduction

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# Agenda

1. EF What it is?
2. Basic Workflow
3. How EF Works?
4. Architecture
5. Working With EF

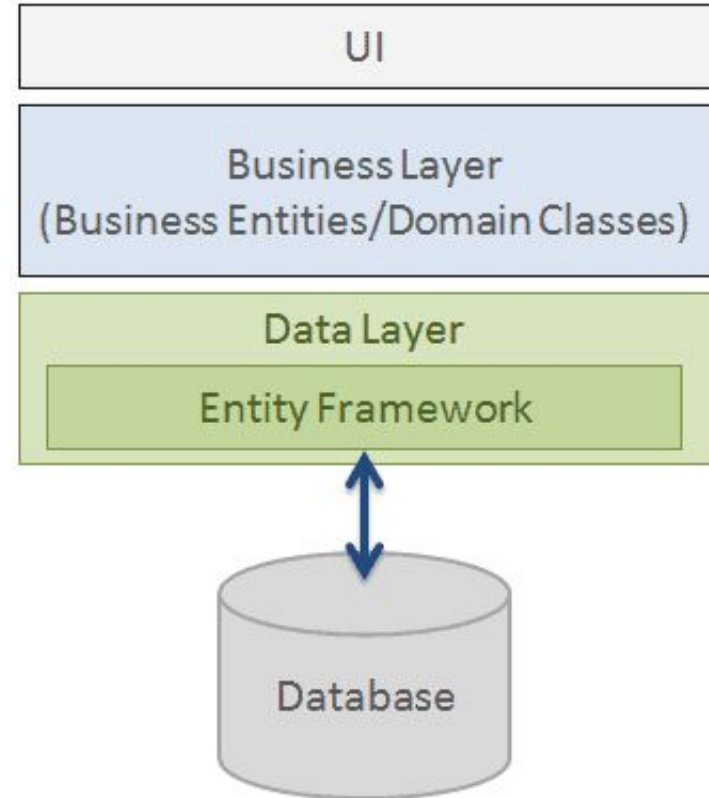
# Entity Framework What it is?

# Object Relational Mapping Framework

- Provides object relational mapping between two systems
- Allow to work with data on object level
- No need to concentrate on stored data in relational format
- Provide abstraction on storage level
- Reduce amount of code

## EF in app architecture

- Its located between Business Layer and Database
- Its part of Data Layer
- Store domain classes in data store (after mapping)
- Retrieve data from storage and map to domain classes
- Mapping is automatically



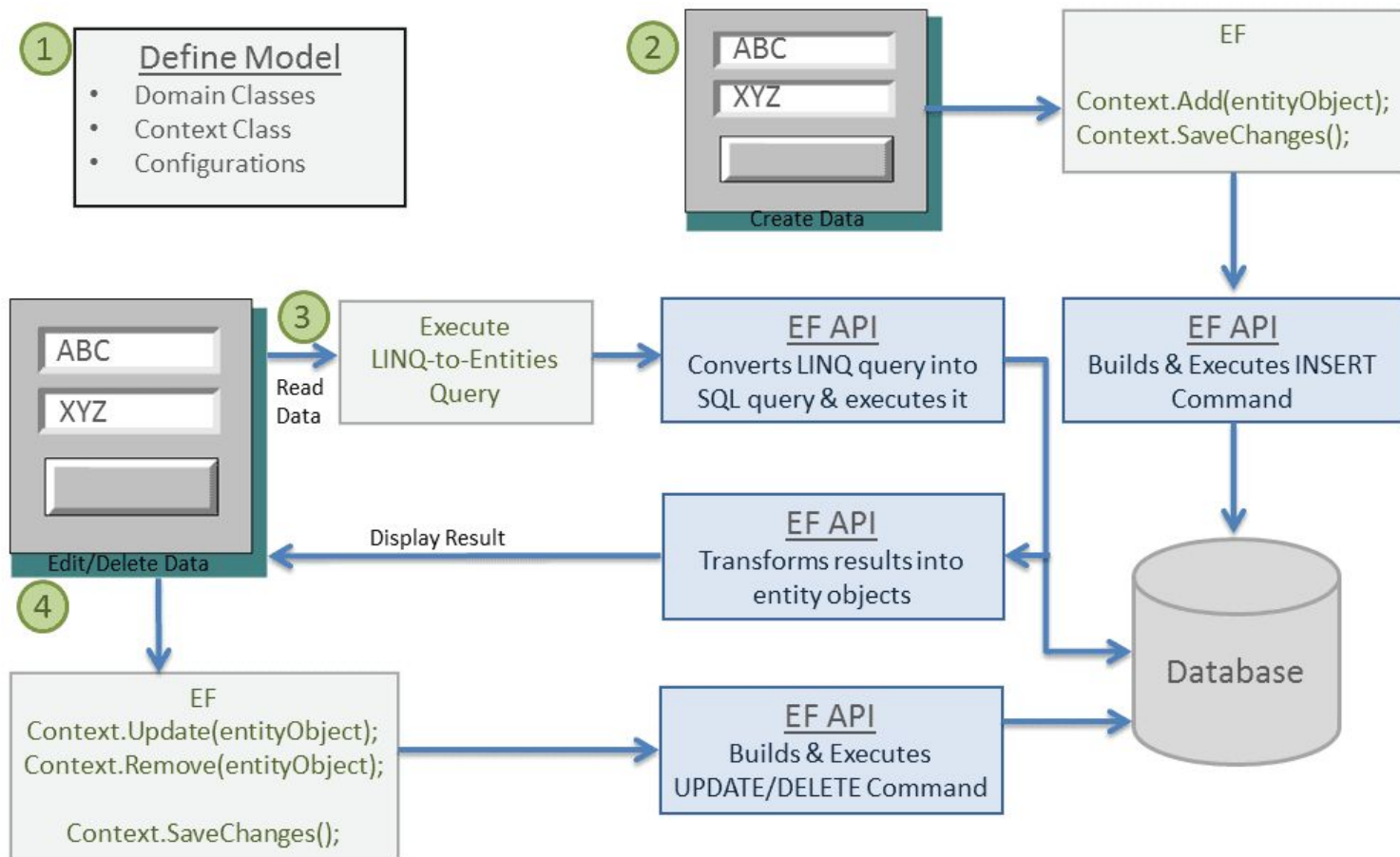
## EF features

- Cross-platform (EF core)
- Modeling (EDM model)
- Querying (LINQ queries)
- Change Tracking
- Saving
- Concurrency
- Transactions
- Caching
- Build-in Conventions
- Configurations
- Migrations



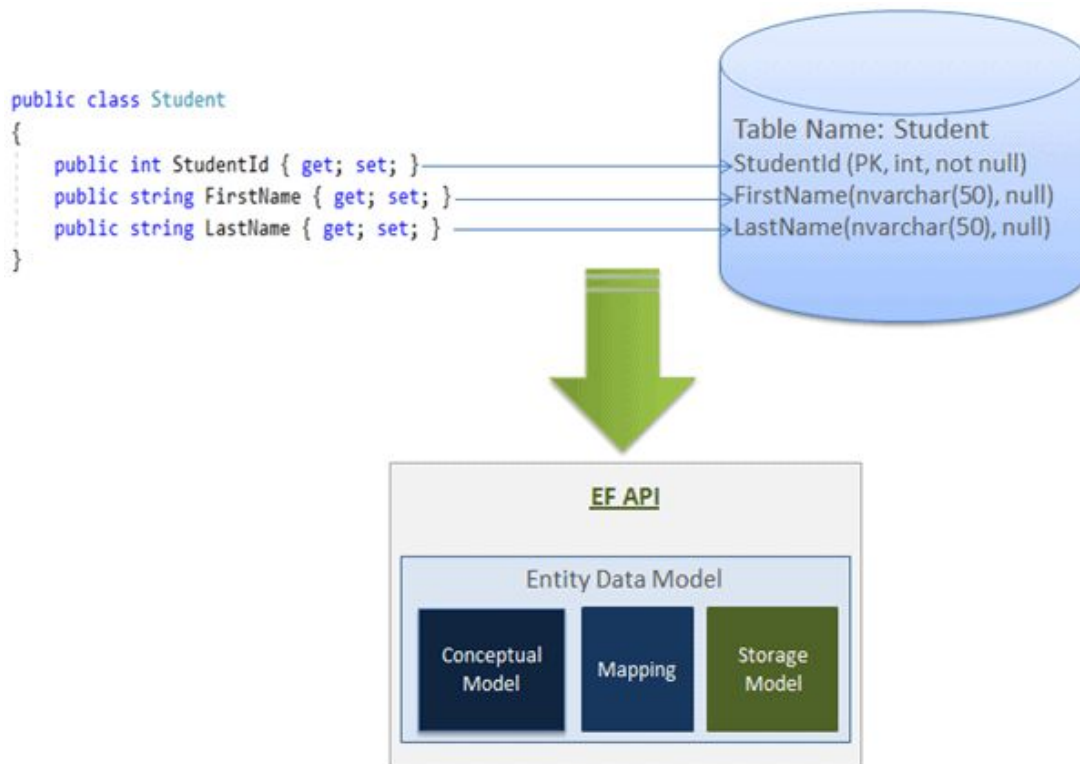
# Basic Workflow



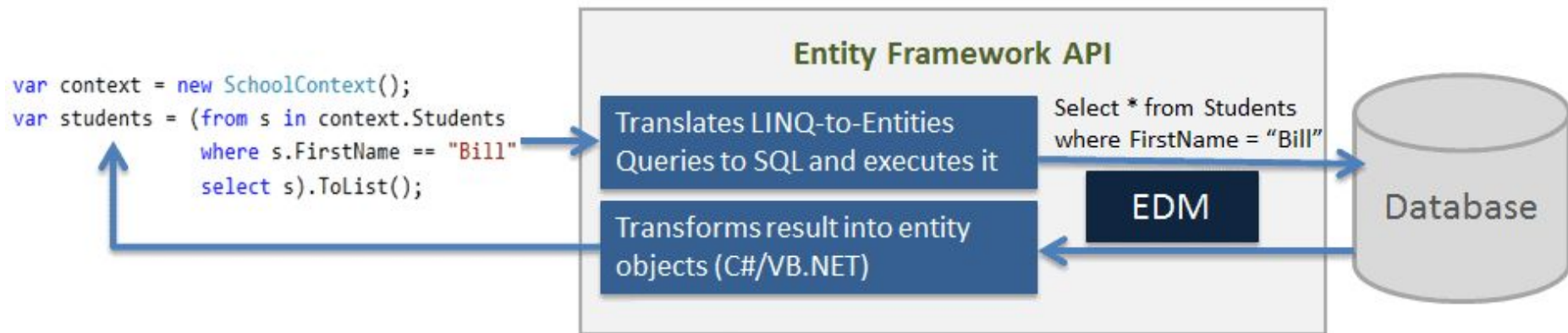


# How EF Works?

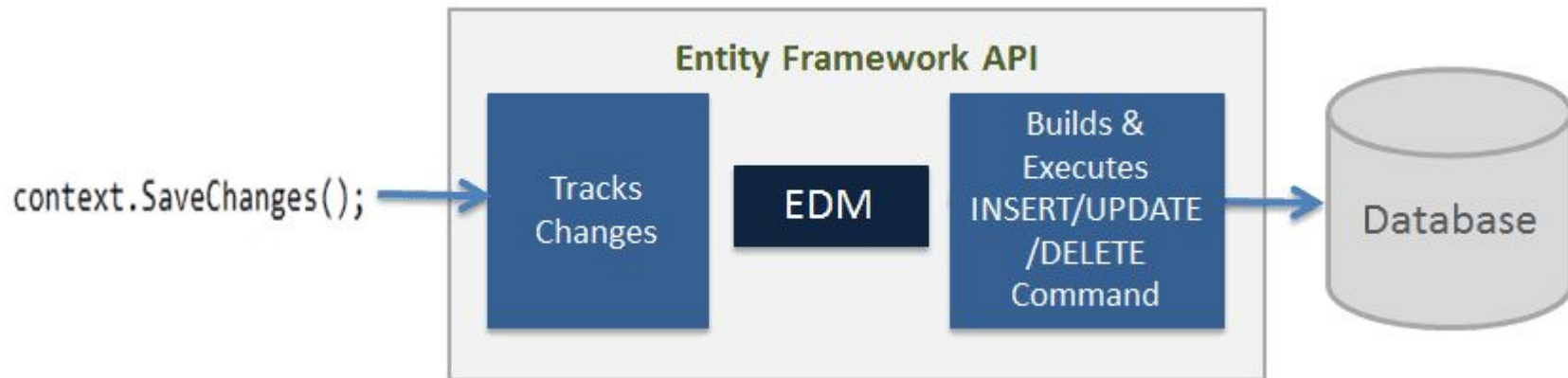
# EDM



# Quering

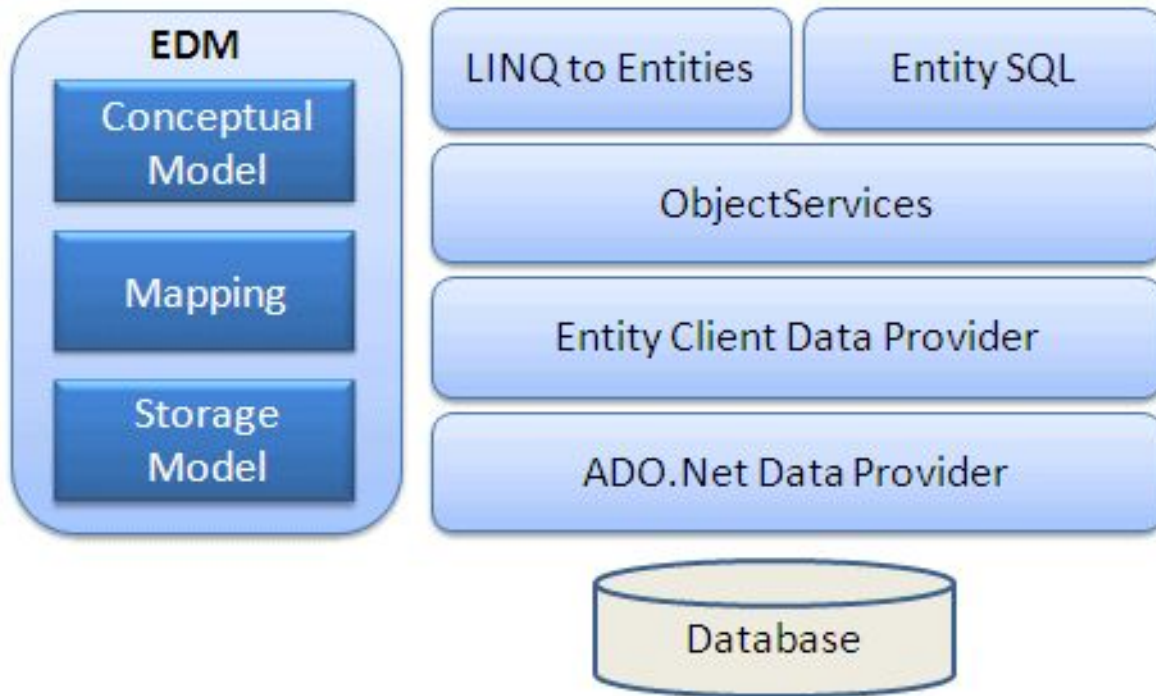


# Saving



# Architecture

# Architecture

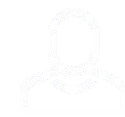




# Working with EF

# DBContext

- Manage Db connection
- Configure model & relations
- Querying db
- Saving data to db
- Configure chase tracking
- Caching
- Transaction management



# DbContext

```
0 references
public class StudentContext : DbContext
{
    0 references
    public DbSet<Student> Students { get; set; }
    0 references
    public DbSet<Grade> Grades { get; set; }

    0 references
    protected override void OnConfiguring(DbContextOptionsBuilder optionsBuilder)
    {
        base.OnConfiguring(optionsBuilder);
    }

    0 references
    protected override void OnModelCreating(ModelBuilder modelBuilder)
    {
        base.OnModelCreating(modelBuilder);
    }
}
```

# Entities

```
2 references
public class Student
{
    0 references
    public int Id { get; set; }
    0 references
    public string StudentName { get; set; }
    0 references
    public DateTime? DateOfBirth { get; set; }
    0 references
    public byte[] Photo { get; set; }
    0 references
    public decimal Height { get; set; }
    0 references
    public float Weight { get; set; }
    0 references
    public Grade Grade { get; set; }
}
```

# Entities

2 references

```
public class Student
```

```
{
```

0 references

```
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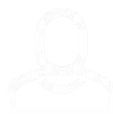
```
public float Weight { get; set; }
```

```
|
```

0 references

```
public Grade Grade { get; set; }
```

```
}
```



## Entities - Reference navigation property

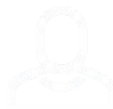
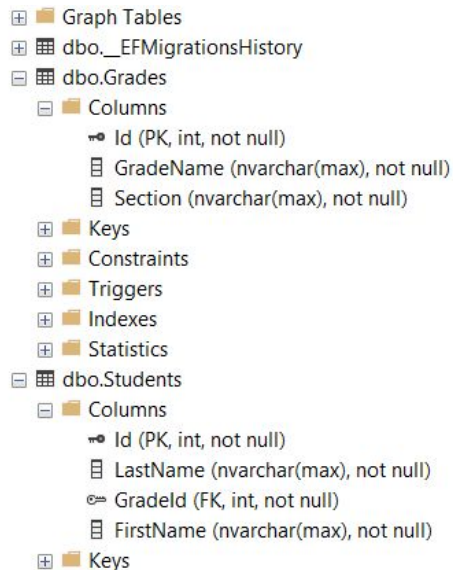
```
2 references
public class Grade
{
    0 references
    public int Id { get; set; }

    0 references
    public string GradeName { get; set; }

    0 references
    public string Section { get; set; }

    0 references
    public ICollection<Student> Students { get; set; }
}
```

# Entities - Reference navigation property







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