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EF Core Series

MASTERING

# Entity Framework Code First Approach

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01

# Introduction

## What is Code First?

- An approach where you define your model classes first and then generate the database schema from these classes.
- Provides greater control over the database schema through C# code.

## Advantages:


- Aligns with Domain-Driven Design (DDD).
- Simplifies database version control.
- Eases the migration and update process.



02

# Creating and Configuring Models

## Basic Model Class:



```
1 public class Product
2 {
3     public int ProductId { get; set; }
4     public string Name { get; set; }
5     public decimal Price { get; set; }
6 }
```

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## Data Annotations:

```
1 public class Product
2 {
3     [Key]
4     public int ProductId { get; set; }
5
6     [Required]
7     [MaxLength(100)]
8     public string Name { get; set; }
9
10    [Range(0, 1000)]
11    public decimal Price { get; set; }
12 }
```

## Fluent API:

```
1 protected override void OnModelCreating(ModelBuilder modelBuilder)
2 {
3     modelBuilder.Entity<Product>()
4         .Property(p => p.Name)
5         .IsRequired()
6         .HasMaxLength(100);
7 }
```



04

# Migrations and Database Updates

**Adding a Migration:**



```
1 // Adding a Migration:
2 // Use the Package Manager Console
3 Add-Migration InitialCreate
4
5 // Or use the .NET CLI
6 dotnet ef migrations add InitialCreate
7
```

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## 05

## Applying Migrations:



```
1 // Use the Package Manager Console
2 Update-Database
3
4 // Or use the .NET CLI
5 dotnet ef database update
6
```

## Updating the Model:

- **Modify your model classes.**



```
1 // Add a new migration:
2 Add-Migration AddNewColumn
3
4 // update the database
5 Update-Database
```



# Code First in Action

## DbContext Class

```
1 public class ApplicationContext : DbContext
2 {
3     public DbSet<Product> Products { get; set; }
4
5     protected override void OnConfiguring
6         (DbContextOptionsBuilder optionsBuilder)
7     {
8         optionsBuilder
9             .UseSqlServer(@"Server=.;Database=CodeFirstDB;Trusted_Connection=True;");
10    }
11
12    protected override void OnModelCreating(ModelBuilder modelBuilder)
13    {
14        modelBuilder.Entity<Product>()
15            .Property(p => p.Name)
16            .IsRequired()
17            .HasMaxLength(100);
18    }
19 }
```



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## Usage:

```
1  using (var context = new ApplicationDbContext())
2  {
3      var product = new Product
4      {
5          Name = "Laptop",
6          Price = 999.99M
7      };
8      context.Products.Add(product);
9      context.SaveChanges();
10 }
```

