**WEEK3-6362596(Superset id)**

**LAB-1(Retail Inventory):**

using System;

using System.Threading.Tasks;

using Microsoft.EntityFrameworkCore;

class Program

{

static async Task Main(string[] args)

{

using var context = new AppDbContext();

Console.WriteLine("🔹 All Products:");

var products = await context.Products.Include(p => p.Category).ToListAsync();

foreach (var p in products)

Console.WriteLine($"{p.Name} - ₹{p.Price} - Category: {p.Category?.Name}");

Console.WriteLine("\n🔹 Find Product by ID (1):");

var product = await context.Products.FindAsync(1);

Console.WriteLine($"Found: {product?.Name ?? "Not found"}");

Console.WriteLine("\n🔹 First Product > ₹50000:");

var expensive = await context.Products.FirstOrDefaultAsync(p => p.Price > 50000);

Console.WriteLine($"Expensive: {expensive?.Name ?? "None"}");

}

}

**.csproj**

<Project Sdk="Microsoft.NET.Sdk">

<PropertyGroup>

<OutputType>Exe</OutputType>

<TargetFramework>net9.0</TargetFramework>

<ImplicitUsings>enable</ImplicitUsings>

<Nullable>enable</Nullable>

</PropertyGroup>

<ItemGroup>

<PackageReference Include="Microsoft.EntityFrameworkCore.Design" Version="9.0.6">

<IncludeAssets>runtime; build; native; contentfiles; analyzers; buildtransitive</IncludeAssets>

<PrivateAssets>all</PrivateAssets>

</PackageReference>

<PackageReference Include="Microsoft.EntityFrameworkCore.SqlServer" Version="9.0.6" />

</ItemGroup>

</Project>

**.sln**

VisualStudioVersion = 17.5.2.0

MinimumVisualStudioVersion = 10.0.40219.1

Project("{FAE04EC0-301F-11D3-BF4B-00C04F79EFBC}") = "RetailInventory", "RetailInventory.csproj", "{BB1284F6-CC2B-B546-5500-F90E6EC03FDB}"

EndProject

Global

GlobalSection(SolutionConfigurationPlatforms) = preSolution

Debug|Any CPU = Debug|Any CPU

Release|Any CPU = Release|Any CPU

EndGlobalSection

GlobalSection(ProjectConfigurationPlatforms) = postSolution

{BB1284F6-CC2B-B546-5500-F90E6EC03FDB}.Debug|Any CPU.ActiveCfg = Debug|Any CPU

{BB1284F6-CC2B-B546-5500-F90E6EC03FDB}.Debug|Any CPU.Build.0 = Debug|Any CPU

{BB1284F6-CC2B-B546-5500-F90E6EC03FDB}.Release|Any CPU.ActiveCfg = Release|Any CPU

{BB1284F6-CC2B-B546-5500-F90E6EC03FDB}.Release|Any CPU.Build.0 = Release|Any CPU

EndGlobalSection

GlobalSection(SolutionProperties) = preSolution

HideSolutionNode = FALSE

EndGlobalSection

GlobalSection(ExtensibilityGlobals) = postSolution

SolutionGuid = {E6B3B788-9495-4501-A4AC-A54F4AF04A6C}

EndGlobalSection

EndGlobal

**LAB-2(Appdb):**

using Microsoft.EntityFrameworkCore;

public class AppDbContext : DbContext

{

public DbSet<Product> Products { get; set; }

public DbSet<Category> Categories { get; set; }

protected override void OnConfiguring(DbContextOptionsBuilder optionsBuilder)

{

optionsBuilder.UseSqlServer(@"Server=(localdb)\v11.0;Database=RetailStoreDB;Trusted\_Connection=True;");

}

}

using System.Collections.Generic;

public class Category

{

public int Id { get; set; }

public string Name { get; set; }

// Navigation property: One category has many products

public List<Product> Products { get; set; }

}

public class Product

{

public int Id { get; set; }

public string Name { get; set; }

public decimal Price { get; set; }

// Foreign key relationship

public int CategoryId { get; set; }

public Category Category { get; set; }

}

using System;

using System.Threading.Tasks;

using Microsoft.EntityFrameworkCore;

class Program

{

static async Task Main(string[] args)

{

using var context = new AppDbContext();

Console.WriteLine("🔹 All Products:");

var products = await context.Products.Include(p => p.Category).ToListAsync();

foreach (var p in products)

Console.WriteLine($"{p.Name} - ₹{p.Price} - Category: {p.Category?.Name}");

Console.WriteLine("\n🔹 Find Product by ID (1):");

var product = await context.Products.FindAsync(1);

Console.WriteLine($"Found: {product?.Name ?? "Not found"}");

Console.WriteLine("\n🔹 First Product > ₹50000:");

var expensive = await context.Products.FirstOrDefaultAsync(p => p.Price > 50000);

Console.WriteLine($"Expensive: {expensive?.Name ?? "None"}");

}

}

**LAB-3(Migrations):**

using Microsoft.EntityFrameworkCore;

using Microsoft.EntityFrameworkCore.Infrastructure;

using Microsoft.EntityFrameworkCore.Metadata;

using Microsoft.EntityFrameworkCore.Migrations;

using Microsoft.EntityFrameworkCore.Storage.ValueConversion;

#nullable disable

namespace RetailInventory.Migrations

{

[DbContext(typeof(AppDbContext))]

[Migration("20250706191032\_InitialCreate")]

partial class InitialCreate

{

/// <inheritdoc />

protected override void BuildTargetModel(ModelBuilder modelBuilder)

{

#pragma warning disable 612, 618

modelBuilder

.HasAnnotation("ProductVersion", "9.0.6")

.HasAnnotation("Relational:MaxIdentifierLength", 128);

SqlServerModelBuilderExtensions.UseIdentityColumns(modelBuilder);

modelBuilder.Entity("Category", b =>

{

b.Property<int>("Id")

.ValueGeneratedOnAdd()

.HasColumnType("int");

SqlServerPropertyBuilderExtensions.UseIdentityColumn(b.Property<int>("Id"));

b.Property<string>("Name")

.IsRequired()

.HasColumnType("nvarchar(max)");

b.HasKey("Id");

b.ToTable("Categories");

});

modelBuilder.Entity("Product", b =>

{

b.Property<int>("Id")

.ValueGeneratedOnAdd()

.HasColumnType("int");

SqlServerPropertyBuilderExtensions.UseIdentityColumn(b.Property<int>("Id"));

b.Property<int>("CategoryId")

.HasColumnType("int");

b.Property<string>("Name")

.IsRequired()

.HasColumnType("nvarchar(max)");

b.Property<decimal>("Price")

.HasColumnType("decimal(18,2)");

b.HasKey("Id");

b.HasIndex("CategoryId");

b.ToTable("Products");

});

modelBuilder.Entity("Product", b =>

{

b.HasOne("Category", "Category")

.WithMany("Products")

.HasForeignKey("CategoryId")

.OnDelete(DeleteBehavior.Cascade)

.IsRequired();

b.Navigation("Category");

});

modelBuilder.Entity("Category", b =>

{

b.Navigation("Products");

});

#pragma warning restore 612, 618

}

}

}

using Microsoft.EntityFrameworkCore.Migrations;

#nullable disable

namespace RetailInventory.Migrations

{

/// <inheritdoc />

public partial class InitialCreate : Migration

{

/// <inheritdoc />

protected override void Up(MigrationBuilder migrationBuilder)

{

migrationBuilder.CreateTable(

name: "Categories",

columns: table => new

{

Id = table.Column<int>(type: "int", nullable: false)

.Annotation("SqlServer:Identity", "1, 1"),

Name = table.Column<string>(type: "nvarchar(max)", nullable: false)

},

constraints: table =>

{

table.PrimaryKey("PK\_Categories", x => x.Id);

});

migrationBuilder.CreateTable(

name: "Products",

columns: table => new

{

Id = table.Column<int>(type: "int", nullable: false)

.Annotation("SqlServer:Identity", "1, 1"),

Name = table.Column<string>(type: "nvarchar(max)", nullable: false),

Price = table.Column<decimal>(type: "decimal(18,2)", nullable: false),

CategoryId = table.Column<int>(type: "int", nullable: false)

},

constraints: table =>

{

table.PrimaryKey("PK\_Products", x => x.Id);

table.ForeignKey(

name: "FK\_Products\_Categories\_CategoryId",

column: x => x.CategoryId,

principalTable: "Categories",

principalColumn: "Id",

onDelete: ReferentialAction.Cascade);

});

migrationBuilder.CreateIndex(

name: "IX\_Products\_CategoryId",

table: "Products",

column: "CategoryId");

}

/// <inheritdoc />

protected override void Down(MigrationBuilder migrationBuilder)

{

migrationBuilder.DropTable(

name: "Products");

migrationBuilder.DropTable(

name: "Categories");

}

}

}

using Microsoft.EntityFrameworkCore;

using Microsoft.EntityFrameworkCore.Infrastructure;

using Microsoft.EntityFrameworkCore.Metadata;

using Microsoft.EntityFrameworkCore.Storage.ValueConversion;

#nullable disable

namespace RetailInventory.Migrations

{

[DbContext(typeof(AppDbContext))]

partial class AppDbContextModelSnapshot : ModelSnapshot

{

protected override void BuildModel(ModelBuilder modelBuilder)

{

#pragma warning disable 612, 618

modelBuilder

.HasAnnotation("ProductVersion", "9.0.6")

.HasAnnotation("Relational:MaxIdentifierLength", 128);

SqlServerModelBuilderExtensions.UseIdentityColumns(modelBuilder);

modelBuilder.Entity("Category", b =>

{

b.Property<int>("Id")

.ValueGeneratedOnAdd()

.HasColumnType("int");

SqlServerPropertyBuilderExtensions.UseIdentityColumn(b.Property<int>("Id"));

b.Property<string>("Name")

.IsRequired()

.HasColumnType("nvarchar(max)");

b.HasKey("Id");

b.ToTable("Categories");

});

modelBuilder.Entity("Product", b =>

{

b.Property<int>("Id")

.ValueGeneratedOnAdd()

.HasColumnType("int");

SqlServerPropertyBuilderExtensions.UseIdentityColumn(b.Property<int>("Id"));

b.Property<int>("CategoryId")

.HasColumnType("int");

b.Property<string>("Name")

.IsRequired()

.HasColumnType("nvarchar(max)");

b.Property<decimal>("Price")

.HasColumnType("decimal(18,2)");

b.HasKey("Id");

b.HasIndex("CategoryId");

b.ToTable("Products");

});

modelBuilder.Entity("Product", b =>

{

b.HasOne("Category", "Category")

.WithMany("Products")

.HasForeignKey("CategoryId")

.OnDelete(DeleteBehavior.Cascade)

.IsRequired();

b.Navigation("Category");

});

modelBuilder.Entity("Category", b =>

{

b.Navigation("Products");

});

#pragma warning restore 612, 618

}

}

}

**LAB-4(Initial data into database):**



