C# Web – MVC

PRO/PRW - C# Web 1

**DE HOGESCHOOL
MET HET NETWERK**

Doel

- ASP.Net Core toepassing
  - MVC Web Application
    - Entity framework – Sql server
      - Table reference keys
    - Configuration
      - Appsettings.json
    - Entity framework Tools
      - Migrations

ASP.NET CORE

MVC Web Application
Configuration
Appsettings.json

Program.cs

```csharp
var builder = WebApplication.CreateBuilder(args);
var connString =
        builder.Configuration.GetConnectionString("ApplicationDbContext");
```

Appsettings.json

```json
,"ConnectionStrings": {
    "ApplicationDbContext": "Server=(localdb)\\mssqllocaldb;
        Database=fifa2024; Trusted_Connection=True;
        MultipleActiveResultSets=true"
  }
```

```json
,
  "AllowedHosts": "*",
  "ConnectionStrings": {
      "ApplicationDbContext": "Server=(localdb)\\mssqllocaldb;
          Database=fifa2024;MultipleActiveResultSets=true"
  }
}
```

ASP.NET CORE

MVC Web Application
Foreign key reference

```csharp
public class TeamPlayer
{
        public int Id { get; set; }
        [Required]
        public int TeamId { get; set; }
        [Required]
        public int PlayerId { get; set; }
        [Required]
        public DateTime StartDate { get; set; }
        [Required]
        public DateTime EndDate { get; set; }

        public Team? Team { get; set; }

        public Player? Player { get; set; }
}
```

```csharp
public class Player
{
        public int PlayerId { get; set; }
        [Required]
        public string FirstName { get; set; }
        [Required]
        public string LastName { get; set; }
        public string ImageLink { get; set; }

        public ICollection<TeamPlayer>? TeamPlayers { get; set; }
}
```

```csharp
public class Team
{
    public int TeamId { get; set; }
    [Required]
    public string TeamName { get; set; }

    public ICollection<TeamPlayer>? TeamPlayers { get; set; }
}
```
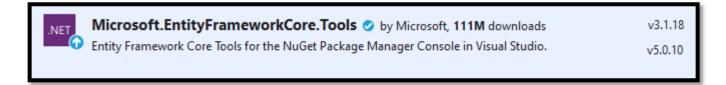
ASP.NET CORE

MVC Web Application
EntityFramework - Tools
Migrations

Microsoft.EntityFrameworkCore.Tools (.Net 6)
- Nuget Package Manager

Microsoft.EntityFrameworkCore.Tools ✓ by Microsoft, **111M** downloads   v3.1.18
Entity Framework Core Tools for the NuGet Package Manager Console in Visual Studio.   v5.0.10

Description

Entity Framework Core Tools for the NuGet Package Manager Console in Visual Studio.

Enables these commonly used commands:
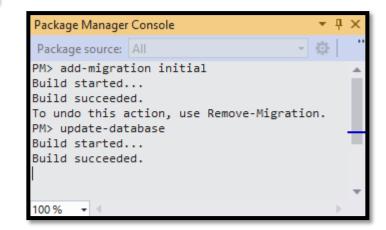Add-Migration
Drop-Database
Get-DbContext
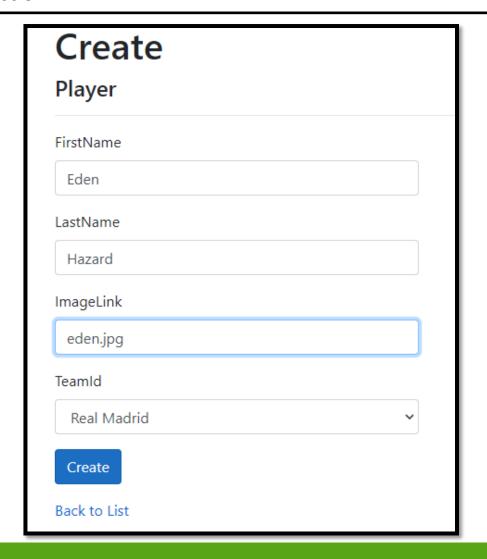Scaffold-DbContext
Script-Migrations
Update-Database

Version: 3.1.19

- Delete database fifaDb
  - Remove Database.EnsureCreated()
    (TeamController & PlayerController)
- Nuget Package Manager console
  - Add-migration initial
  - Update-database

```
Package Manager Console            ▼ � ×
Package source: All                ▼ ⚙ │
PM> add-migration initial
Build started...
Build succeeded.
To undo this action, use Remove-Migration.
PM> update-database
Build started...
Build succeeded.
|
100 %  ▼ ◄
```
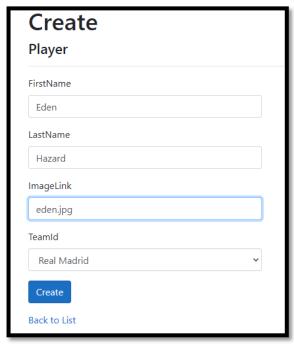
```
migrationBuilder.CreateTable(
    name: "TeamPlayers",
    columns: table => new
    {
        Id = table.Column<int>(nullable: false)
            .Annotation("SqlServer:Identity", "1, 1"),
        TeamId = table.Column<int>(nullable: false),
        PlayerId = table.Column<int>(nullable: false),
        StartDate = table.Column<DateTime>(nullable: false),
        EndDate = table.Column<DateTime>(nullable: false)
    },
    constraints: table =>
    {
        table.PrimaryKey("PK_TeamPlayers", x => x.Id);
        table.ForeignKey(
            name: "FK_TeamPlayers_Players_PlayerId",
            column: x => x.PlayerId,
            principalTable: "Players",
            principalColumn: "PlayerId",
            onDelete: ReferentialAction.Cascade);
        table.ForeignKey(
            name: "FK_TeamPlayers_Teams_TeamId",
            column: x => x.TeamId,
            principalTable: "Teams",
            principalColumn: "TeamId",
            onDelete: ReferentialAction.Cascade);
    });
```

- Player creation
  - Add form (Views/Player/Create2)
    - Add Combobox Teams
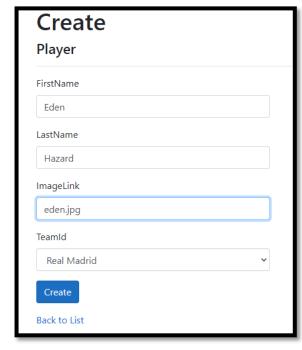   - Create Model
    - Add Create2 Action

- Player creation
  - Add form (Views/Player/Create2)
    - Add Combobox Teams
    - Create Model (ViewModels/NewPlayer)
    - Add Create2 Action in Controller (Get & Post)

- New ViewModel (Project/ViewModels folder)
  - NewPlayer.cs

```csharp
public class NewPlayer : Player
{
    public int TeamId { get; set; }
}
```
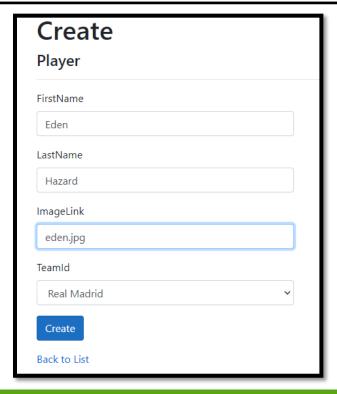
Create

Player

FirstName

Eden

LastName

Hazard

ImageLink

eden.jpg

TeamId

Real Madrid

Create

Back to List

- PlayerController

```csharp
[HttpGet]
public IActionResult Create2()
{
    var player = new NewPlayer();
    ViewData["TeamId"] = new SelectList(_context.Teams,
"TeamId", "TeamName");
    return View(player);
}
[HttpPost]
public IActionResult Create2(NewPlayer player)
{
    if (ModelState.IsValid)
    {
        AddNewPlayer(player);
        return RedirectToAction("Index");
    }
    return View(player);
}
```
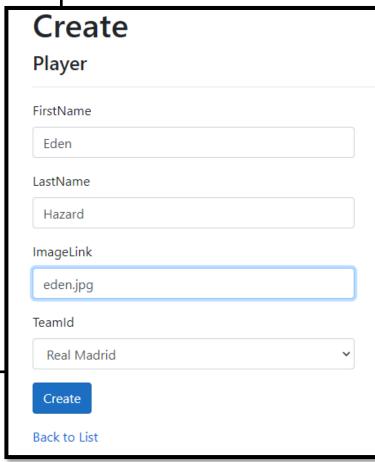
Create

Player

FirstName

Eden

LastName

Hazard

ImageLink

eden.jpg

TeamId

Real Madrid

Create

Back to List

- Views/Player/Create2.cshtml

```
@model MVCFifa.ViewModels.NewPlayer
...
<div class="row">
  <div class="col-md-4">
    <form asp-action="Create2">
      ...
      <div class="form-group">
        <label asp-for="TeamId" class="control-label"></label>
        <select asp-for="TeamId" class="form-control" asp-items="ViewBag.TeamId"></select>
      </div>
```


Create

Player

FirstName

Eden

LastName

Hazard

ImageLink

eden.jpg

TeamId

Real Madrid

Create

Back to List

- PlayerController

```csharp
private void AddNewPlayer(NewPlayer player)
{
    Player p = new Player();
    p.FirstName = player.FirstName;
    p.LastName = player.LastName;
    p.ImageLink = player.ImageLink;
    _context.Players.Add(p);
    _context.SaveChanges();

    var tp = new TeamPlayer();
    tp.PlayerId = p.PlayerId;
    tp.TeamId = player.TeamId;
    tp.StartDate = DateTime.Now;
    tp.EndDate = DateTime.Now.AddMonths(3);
    _context.TeamPlayers.Add(tp);
    _context.SaveChanges();
}
```

Create

Player

FirstName

| Eden |

LastName

| Hazard |

ImageLink

| eden.jpg |

TeamId

| Real Madrid ⌄ |

[Create]

Back to List

- TeamController
    - List Template – add hyperlink to PlayerOverview
    - New Action – PlayerOverview
    - New View – PlayerOverview
        - Show all players from 1/1/year(now)
            - TeamName – FirstName - LastName

Players
Teams
TeamPlayers

Index

Create New

TeamId	TeamName	
1	PSG	PlayerOverview
2	LA Galaxy	PlayerOverview

ASP.NET CORE

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EntityFramework - Tools
Migrations