

Using AutoMapper in an ASP.NET Core MVC Application

1. Install AutoMapper Packages

Run these commands in the Package Manager Console:

```
Install-Package AutoMapper
```

```
Install-Package AutoMapper.Extensions.Microsoft.DependencyInjection
```

2. Create a Mapping Profile

Create a class inheriting from Profile:

```
public class MappingProfile : Profile
{
    public MappingProfile()
    {
        CreateMap<Student, StudentDTO>()
            .ForMember(dest => dest.FullName, opt => opt.MapFrom(src => $"{src.FirstName} {src.LastName}"))
            .ForMember(dest => dest.Age, opt => opt.MapFrom(src => CalculateAge(src.DOB)))
            .ReverseMap();
    }

    private int CalculateAge(DateTime dob)
    {
        var today = DateTime.Today;
        int age = today.Year - dob.Year;
        if (dob > today.AddYears(-age)) age--;
        return age;
    }
}
```

3. Register AutoMapper

In Startup.cs (for .NET Core 3.1 / .NET 5):

```
services.AddAutoMapper(typeof(MappingProfile));
```

In Program.cs (for .NET 6+):

```
builder.Services.AddAutoMapper(typeof(MappingProfile));
```

4. Use AutoMapper in Controller

Inject IMapper and use it:

```
public class StudentsController : Controller
{
    private readonly IMapper _mapper;
```

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```
public StudentsController(IMapper mapper)
{
    _mapper = mapper;
}

public IActionResult Index()
{
    Student student = new Student
    {
        Id = 1,
        FirstName = "Alice",
        LastName = "Smith",
        DOB = new DateTime(2005, 4, 10),
        Class = "12th"
    };

    StudentDTO dto = _mapper.Map<StudentDTO>(student);

    return View(dto);
}
```

5. Model Classes

```
public class Student
{
    public int Id { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public DateTime DOB { get; set; }
    public string Class { get; set; }
}

public class StudentDTO
{
    public int Id { get; set; }
    public string FullName { get; set; }
    public int Age { get; set; }
    public string Class { get; set; }
}
```