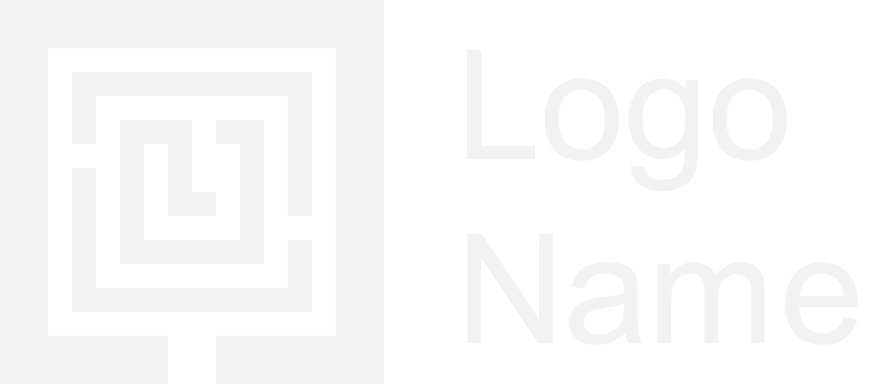
|  |
| --- |
| Entity Framework on Asp.net  In this presentation, we will learn about the concept of Entity Framework in Asp.net and examine its key components and usage. |
| Amirshayan Jalili 09101943345  [Shayan138190@gmail.com](mailto:Shayan138190@gmail.com) |



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Description automatically generated

**History**

provided RDO , ADO and ADO.NET technologies before introducing Entity Framework . [With the expansion of object orientation and the need of programmers to convert data into objects, Microsoft developed ADO.NET technology and the possibilities Linq and then presented the Entity Framework for better interaction with object-oriented](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [1](http://www.program98.com/codenevis/%D8%AA%D8%A7%D8%B1%DB%8C%D8%AE%DA%86%D9%87-%D9%88-%D8%AA%DA%A9%D8%A7%D9%85%D9%84-%D9%85%D8%A7%DB%8C%DA%A9%D8%B1%D9%88%D8%B3%D8%A7%D9%81%D8%AA-entity-framework/) .

[Entity Framework is a very powerful and popular framework that provides you with many features](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [2](https://codeyad.com/course/learn-ef-core) . [The new version of this that is widely used by developers today is Entity Framework Core](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [2](https://codeyad.com/course/learn-ef-core) .

[The initial version of Entity Framework was released in .NET 3.5 Service Pack 1 and Visual Studio 2008 SP1 , which was in August 2008](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . This release [provided initial support for O/RM using the Database First workflow](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) .

[With the release of EF4.1 , this framework is available as the EntityFramework NuGet package It was released that is currently one of the most popular packages on NuGet.org 3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [Between versions 4.1 and 5.0, the EntityFramework NuGet package It extended the EF libraries released as part of the .NET Framework 3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) .

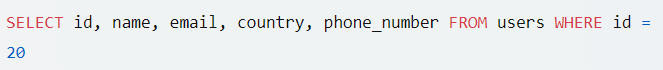
[Starting with version 6, EF became an open source project and was also completely separated from the .NET Framework 3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [This means that when you package NuGet EntityFramework When you add version 6 to an application, you get a complete version of the EF library that does not depend on the EF components that are released as part of the .NET Framework](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [This slightly increased the speed of development and delivery of new features](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) .

[In June 2016, EF Core 1.0 was released](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [EF Core is based on a new code base and is designed as a lighter and extensible version of EF](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [EF Core is currently the main development focus for the Entity Framework team at Microsoft](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [This means that no new features are planned for EF6](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) . [However, EF6 is still maintained as an open source project and a product supported by Microsoft](http://www.program98.com/codenevis/%d8%aa%d8%a7%d8%b1%db%8c%d8%ae%da%86%d9%87-%d9%88-%d8%aa%da%a9%d8%a7%d9%85%d9%84-%d9%85%d8%a7%db%8c%da%a9%d8%b1%d9%88%d8%b3%d8%a7%d9%81%d8%aa-entity-framework/) [3](https://learn.microsoft.com/en-us/ef/ef6/what-is-new/past-releases) .

ORM or Object Relational Mapping

[Object-Relational Mapping or ORM is a programming technique in computer science that is used to transform data between a relational database and an object-oriented programming](https://bing.com/search?q=ORM+Object+Relational+Mapping+%d8%aa%d9%88%d8%b6%db%8c%d8%ad) language [.](https://bing.com/search?q=ORM+Object+Relational+Mapping+%D8%AA%D9%88%D8%B6%DB%8C%D8%AD) [This action, in effect, creates a virtual object database that can be used within the programming language](https://bing.com/search?q=ORM+Object+Relational+Mapping+%d8%aa%d9%88%d8%b6%db%8c%d8%ad) [1](https://bing.com/search?q=ORM+Object+Relational+Mapping+%D8%AA%D9%88%D8%B6%DB%8C%D8%AD) .

[ORM is a tool](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) that [helps object-oriented programmers to communicate with relational databases . So, instead of building your own ORM software from scratch, you can use these tools 2](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . For example, the following SQL code retrieves information about a specific user from a database :



[returns the information of a user - name, email, country and phone number - from a table called users 2](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . [Using the WHERE clause , we specified that the information should be from a user with id 20](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . [On the other hand, an ORM tool can perform the same query above with simpler methods 2](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . that's mean :



[does the same thing as SQL query 2](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . [Note that every ORM tool is built differently so the methods are not always the same, but the overall goal is the same 2](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . [ORM tools can generate methods like the last example 2](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) . [Most object-oriented programming languages have a diverse set of ORM tools that you](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/) can [choose from .](https://www.freecodecamp.org/news/what-is-an-orm-the-meaning-of-object-relational-mapping-database-tools/)

**Concept of Entity Framework**

**Simple and efficient**

[Entity Framework (EF) is an object-relational mapper that allows .NET developers to work with relational data using domain-specific objects](https://www.bing.com/aclk?ld=e8X-1qSKM6MZWozw64oQby1DVUCUyY70TdjecUH80Db5EMdI6onQ_pVSQGbYVMGCWif3SzMp12M2Q7KigXmRUV2YEAWK4DPrPvTo_RR38PtarPyg0CbIsGxivSt5xkrwGaKFyC-VOn9UTJY6SB5l1aUAY1yknzksAZ9BHQHnyztR9SHhNB&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=73ce9daae8be15b7f78df8385b65a541) [1](https://learn.microsoft.com/en-us/aspnet/entity-framework) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://www.bing.com/aclk?ld=e8X-1qSKM6MZWozw64oQby1DVUCUyY70TdjecUH80Db5EMdI6onQ_pVSQGbYVMGCWif3SzMp12M2Q7KigXmRUV2YEAWK4DPrPvTo_RR38PtarPyg0CbIsGxivSt5xkrwGaKFyC-VOn9UTJY6SB5l1aUAY1yknzksAZ9BHQHnyztR9SHhNB&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=73ce9daae8be15b7f78df8385b65a541) [1](https://learn.microsoft.com/en-us/aspnet/entity-framework) .

[Entity Framework Core is a lightweight, extensible and cross-platform version 2](http://www.atriya.com/Package/Details/%D8%A2%D9%85%D9%88%D8%B2%D8%B4-entity-framework-core) . [This framework simplifies data access and allows developers to create the conceptual model needed for their business 2](http://www.atriya.com/Package/Details/%D8%A2%D9%85%D9%88%D8%B2%D8%B4-entity-framework-core) .

[Entity Framework is a modern object-relational mapper that allows you to build a clean, portable, high-level data access layer with .NET (C#) across a variety of databases, including SQL Database ( in-place and Azure) , build SQLite , MySQL , PostgreSQL , and Azure Cosmos DB 3](https://learn.microsoft.com/en-us/ef/) . This framework supports [LINQ queries , change tracking, updates and schema migrations 3](https://learn.microsoft.com/en-us/ef/) .

**Database interaction**

[Entity Framework (EF) is an object-relational mapper that allows .NET developers to work with relational data using domain-specific objects](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) .

[Entity Model in Entity Framework is a conceptual model that represents various objects in the application domain and the relationships between them](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) . [This entity model allows developers to work with relational data in an object-oriented](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) manner [.](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [In other words, instead of working with database tables and relationships, developers work with objects and the relationships between](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) them [.](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9)

[Entity Framework transforms relational data into domain-specific objects using the entity model](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) . [This allows developers to work with data in an object-oriented manner, which makes application code simpler, more readable, and more](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [maintainable1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) .

For example, suppose we have a users table in the database . [Using the Entity Framework , we can have a User class in our application code, each instance of which displays a row in the Users table](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) [1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) . [Then we can use this User class to work with user data object-oriented](https://www.bing.com/aclk?ld=e8oSJ9vSLr0XF3EXIShVp17zVUCUxOiRmWZkQTZsv_xVTZfmfhiv7_N1OJFVW6Kv1XjvOHqrdKGB4uDQ397AKbS1-82D4e5SiUoxIEbnxUHbyTmH3bmZri00b6BD8yH2vhEAjOdEulhrE3RSWzZKqdeoASVRgWY5c8YiFwAKqQtFX75-f9&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=7ebd923e15351d61d04ef7aca16d39fa) [1](https://fa.wikipedia.org/wiki/%D8%A7%D9%86%D8%AA%DB%8C%D8%AA%DB%8C_%D9%81%D8%B1%DB%8C%D9%85_%D9%88%D8%B1%DA%A9) .

**CRUD operations**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) .

[Entity Framework supports CRUD (Create, Read, Update, Delete) operations](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) . These operations are as follows :

* [**Create** : Add or create new entities](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [2](https://en.wikipedia.org/wiki/Create,_read,_update_and_delete) .
* [**Read** : Reading, searching, or viewing existing entities](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [2](https://en.wikipedia.org/wiki/Create,_read,_update_and_delete) .
* [**Update** : Update or edit existing entities](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [2](https://en.wikipedia.org/wiki/Create,_read,_update_and_delete) .
* [**Delete** : delete, disable, or remove existing entities](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [2](https://en.wikipedia.org/wiki/Create,_read,_update_and_delete) .

[Using Entity Framework , you can perform CRUD operations using simple and readable C# codes](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [3](https://www.geeksforgeeks.org/basic-crud-create-read-update-delete-in-asp-net-mvc-using-c-sharp-and-entity-framework/) . For example, you can create a new record using the following code :

var student = new Student { StudentID = 1 , StudentName = "John" };

context.Students.Add (student);

context. SaveChanges ();

In the above code, a new object of the Student class is created and added to the students collection . [Then the changes are saved in the database](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [3](https://www.geeksforgeeks.org/basic-crud-create-read-update-delete-in-asp-net-mvc-using-c-sharp-and-entity-framework/) .

[Similarly, you can perform read, update, and delete operations using the Entity Framework 3](https://www.geeksforgeeks.org/basic-crud-create-read-update-delete-in-asp-net-mvc-using-c-sharp-and-entity-framework/) . [These features make coding with Entity Framework simpler, more readable, and more efficient](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) [1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/crud?view=aspnetcore-8.0) .

**Advantages**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) [1](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) [1](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) .

The advantages of using Entity Framework in ASP.NET are :

1. [**Communication with all database environments** : Entity Framework is independent of the database environment and can communicate with all databases](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) [1](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) .
2. [**Ease of use**](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) : [Using Entity Framework , developers can perform CRUD (Create, Read, Update, Delete) operations using simple and readable C# codes](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) [.](https://sabio.ir/2018/12/29/what-is-entity-framework-1/)
3. [**Reduced programming time** : Entity Framework reduces programming time by eliminating the need for most data access codes](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) [1](https://sabio.ir/2018/12/29/what-is-entity-framework-1/) .
4. [**Simplifying complex queries with the Navigation Property property** : Entity Framework provides the possibility of complex queries using the Navigation Property property 2](https://darsman.com/blog/csharp/entity-framework-in-csharp/) .
5. [**Separation and classification of different parts of the software** : Entity Framework, with the possibility of separation and classification of different parts of the software, helps developers to create programs with a better structure and more maintainability 2](https://darsman.com/blog/csharp/entity-framework-in-csharp/) .
6. [**The ability to connect powerfully with LINQ to perform CRUD** : Entity Framework provides the possibility of performing CRUD operations in a powerful and simple way using LINQ 2](https://darsman.com/blog/csharp/entity-framework-in-csharp/) .
7. [**Preventing the programmer from getting involved with the database** : Using Entity Framework , developers can focus on the logic of the application and do not need to get involved with the details of the database 3](https://faradars.org/courses/fvcs94082-entity-framework-in-c-sharp) .

**Disadvantages**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) . However, like any other framework, EF has its drawbacks. Some of these disadvantages are :

1. [**Reducing the speed of the program** : Entity Framework may slow down the program](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [2](https://darsman.com/blog/csharp/entity-framework-in-csharp/) . [This issue is usually more evident in large and complex programs](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [2](https://darsman.com/blog/csharp/entity-framework-in-csharp/) .
2. [**The need for accurate coding for communication with the database** : In the Code First model , all communication with the database needs to be fully and accurately coded](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [3](https://www.hoshmandan.com/Home/DetailsPost/100/CodeFirst-or-DBFirst-) .
3. [**Problems in using Stored Procedure** : In the Code First method , Stored Procedures are not written independently and you have to use Fluent API functions and bring them into the code](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [3](https://www.hoshmandan.com/Home/DetailsPost/100/CodeFirst-or-DBFirst-) .
4. [**Problems in database changes** : In the Code First model , to make changes in the database, classes must be programmed and the update-database command must be executed in the package manager console](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [3](https://www.hoshmandan.com/Home/DetailsPost/100/CodeFirst-or-DBFirst-) .
5. [**Limitations of ORM** : Despite the addition of many features to version 4 of this framework, this tool still has some shortcomings compared](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [to](https://fakhravari.ir/coursetopic/entity-framework) [popular ORMs](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) .

[However, it should be noted that some of these disadvantages may have been fixed in newer versions of EF , such as EF Core](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) [1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) . Also, some of these disadvantages may [be reduced by using different programming methods and techniques, such as using different EF models ( such as Database First , Model First , and Code First) 1](https://learn.microsoft.com/en-us/aspnet/core/data/ef-mvc/intro?view=aspnetcore-8.0) .

**What is Asp.net ?**

[ASP.NET is a web](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) development [framework provided by Microsoft in 2002](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [.](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [This framework is part of the .NET (.NET) platform and provides additional libraries and tools for developing websites and online applications](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [1](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) .

[ASP.NET supports using languages like VB.Net , C# , Jscript.Net , etc.](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [1](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) . [Using this framework, you can create dynamic websites, online applications and various web services](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [1](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) .

[ASP.NET Core is a newer version of ASP.NET that was released in 2016](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [2](https://toplearn.com/c/Rg5K) . [ASP.NET Core is an Open Source (free) and Cross Platform (multi-platform) framework](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [2](https://toplearn.com/c/Rg5K) . [This framework can run on Windows, Linux and Mac](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [2](https://toplearn.com/c/Rg5K) . [ASP.NET Core includes the MVC framework , which now connects MVC and Web API features to the Web programming framework](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [2](https://toplearn.com/c/Rg5K) .

[ASP.NET has key and unique features](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [3](https://www.hamyarit.com/blog/asp-net-learning/) . Some of these features are :

* [**Code Behind Mode** : This concept refers to the separation of design and code](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [3](https://www.hamyarit.com/blog/asp-net-learning/) . [By doing this separation, the maintenance and development of ASP.NET applications is done better and easier](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [3](https://www.hamyarit.com/blog/asp-net-learning/) .
* [**State Management** : In ASP.NET, it is possible to control the state management](https://blog.faradars.org/asp-net-%DA%86%DB%8C%D8%B3%D8%AA) [3](https://www.hamyarit.com/blog/asp-net-learning/) .

**Structural coding and Use From Entity Framework**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) .

[In general, we can use Entity Framework in three ways : Model First , Database First and Code First](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [2](https://blog.iranserver.com/howto-use-entity-framework/) .

* [**Model First** : In this method, we first design the model of the entities and the relationships between them in a graphic environment and then use it to create a database](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [2](https://blog.iranserver.com/howto-use-entity-framework/) .
* **Database First** : In this method, the database and its tables are created first . [Then, using EF , the models related to the database tables are created](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [2](https://blog.iranserver.com/howto-use-entity-framework/) .
* [**Code First** : In this method, we first write the classes related to the models and then using EF , the database and its tables are created based on these classes](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [2](https://blog.iranserver.com/howto-use-entity-framework/) .

[To use the Entity Framework in ASP.NET , you must first add a reference to the Entity Framework library to your project](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) . [Then, a class DbContext Create the bridge between the database and your code](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) . In this class , [you can define sets of entities, each of which corresponds to a table in the database](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [.](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework)

[To perform CRUD (create, read, update, delete) operations, you can use methods like Add(), Remove(), Find(), and SaveChanges () provided by EF , use](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) . [Also, you can use LINQ to perform complex queries on data](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) .

For example, to create a new record in the database, you can write the following code :

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In the above code, a new object of the Student class is created and added to the students collection . [Then the changes are saved in the database](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) .

[Similarly, you can perform read, update, and delete operations using Entity Framework](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) . [These features make coding with Entity Framework simpler, more readable, and more efficient](https://bing.com/search?q=%d8%b3%d8%a7%d8%ae%d8%aa%d8%a7%d8%b1+%da%a9%d8%af%d9%86%d9%88%db%8c%d8%b3%db%8c+%d9%88+%d8%a7%d8%b3%d8%aa%d9%81%d8%a7%d8%af%d9%87+%d8%a7%d8%b2+Entity+Framework) [1](https://bing.com/search?q=%D8%B3%D8%A7%D8%AE%D8%AA%D8%A7%D8%B1+%DA%A9%D8%AF%D9%86%D9%88%DB%8C%D8%B3%DB%8C+%D9%88+%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87+%D8%A7%D8%B2+Entity+Framework) .

**Detailed examination of Entity Framework on Asp.net**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) .

[To use the Entity Framework in ASP.NET , you must first add a reference to the Entity Framework library to your project](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) . [Then, a class DbContext Create the bridge between the database and your code](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) . In this class , [you can define sets of entities, each of which corresponds to a table in the database](https://mizfa.com/blog/tag/entity-framework-core/) [.](https://mizfa.com/blog/tag/entity-framework-core/)

[To perform CRUD (create, read, update, delete) operations, you can use methods like Add(), Remove(), Find(), and SaveChanges () provided by EF , use](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) . [Also, you can use LINQ to perform complex queries on data](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) .

For example, to create a new record in the database, you can write the following code :

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Description automatically generatedIn the above code, a new object of the Student class is created and added to the students collection . [Then the changes are saved in the database](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) .

[Similarly, you can perform read, update, and delete operations using Entity Framework](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) . [These features make coding with Entity Framework simpler, more readable, and more efficient](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) .

To learn more about Entity Framework Core , you can refer to [this tutorial](https://mizfa.com/blog/tag/entity-framework-core/) See . [This training includes various topics such as using EF Core in ASP.NET Core 2 , Code First and Database First methods in Entity Framework Core , etc.](https://mizfa.com/blog/tag/entity-framework-core/) [1](https://mizfa.com/blog/tag/entity-framework-core/) .

**Ask and atmosphere**

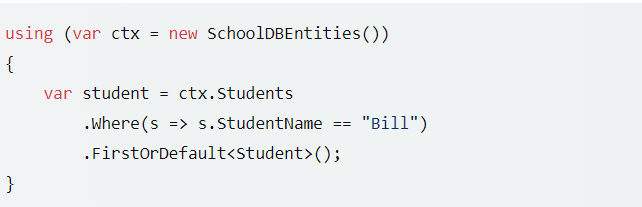
**LINQ on Entity Framework**

[LINQ to Entity Framework provides Language-Integrated Query (LINQ) support, which allows developers to write queries against the Entity Framework conceptual model using Visual Basic or Visual C#](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [1](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) . [Queries against the Entity Framework are represented by command tree queries that are executed against the application context](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [1](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) .

[LINQ query to Entities , you must follow the following steps](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) :

1. [Create an instance of the class ObjectQuery <T> from ObjectContext](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .
2. [LINQ query to Entities in C# or Visual Basic using the example ObjectQuery <T>](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .
3. [LINQ query operators and expressions to command trees 2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .
4. [Executing the query, in the command tree view, against the data source](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .
5. [Any exception thrown at the data source during execution is passed directly to the client](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .
6. [Returning query results to the customer](https://learn.microsoft.com/en-us/dotnet/framework/data/adonet/ef/language-reference/linq-to-entities) [2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .

[For example, if you want to find a specific student named "Bill" from the database, you can use the First method or FirstOrDefault Use 2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) :

u In the above code, [a LINQ query to Entities is created that retrieves a student named "Bill" from the database 2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) . [EF 6 executes the following SQL query on the database for the above LINQ query 2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) :

A screenshot of a computer program

Description automatically generated

[In general, LINQ to Entities allows you to write complex queries in a simple and readable way 2](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .

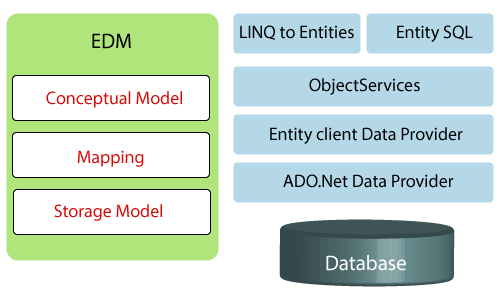
**Key components**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) [1](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) [1](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) .

[Entity Framework actually consists of three main parts : Entity Data Model , Object Services and LINQ to Entities](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) [2](https://dotnettutorials.net/lesson/entity-framework-architecture/) .

* [**Entity Data Model** : This is a conceptual model that represents various objects in the application domain and the relationships between them](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) [1](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) . [This entity model allows developers to work with relational data in an object-oriented](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) manner [.](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html)
* [**Object Services** : This layer of EF provides the ability to create, read, update and delete (CRUD) objects](https://www.bing.com/aclk?ld=e8_mNCSqWJh5ebYnlHiXQvxjVUCUwuUW3BAmMSujj5d3ZnUF-EWs4XPaLCtiF84kkK1PGhoD8nPyWV2xiNzPtbdQQsyc1-x4qYxvnyYp5j8HUxMnqWiaHjZnhn8dmqArFtgA1gzyaHB78U-z-UdZNlIIjsxczRMK1ghBQsTWxdUA6Gbc2Z&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=3eda0e88cb061e8bb7656b1a72b2da13) [1](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) . Also, this layer [provides support for querying data using Entity SQL and LINQ](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) [1](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) .
* [**LINQ to Entities** : LINQ to Entities provides Language-Integrated Query (LINQ) support that allows developers to write queries against the Entity Framework conceptual model using Visual Basic or Visual C# 3](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) . [Queries against the Entity Framework are represented by command tree queries that are executed against the application context 3](https://www.entityframeworktutorial.net/entityframework6/linq-to-entities-queries-in-entity-framework.aspx) .

To learn more about Entity Framework , you can refer to [this tutorial](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) See . [This training includes various topics such as using EF in ASP.NET , Code First and Database First methods in Entity Framework , etc.](https://www.bing.com/aclk?ld=e8_mNCSqWJh5ebYnlHiXQvxjVUCUwuUW3BAmMSujj5d3ZnUF-EWs4XPaLCtiF84kkK1PGhoD8nPyWV2xiNzPtbdQQsyc1-x4qYxvnyYp5j8HUxMnqWiaHjZnhn8dmqArFtgA1gzyaHB78U-z-UdZNlIIjsxczRMK1ghBQsTWxdUA6Gbc2Z&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=3eda0e88cb061e8bb7656b1a72b2da13) [1](https://www.infoworld.com/article/2911364/programming-the-object-services-layer-in-entity-framework.html) .



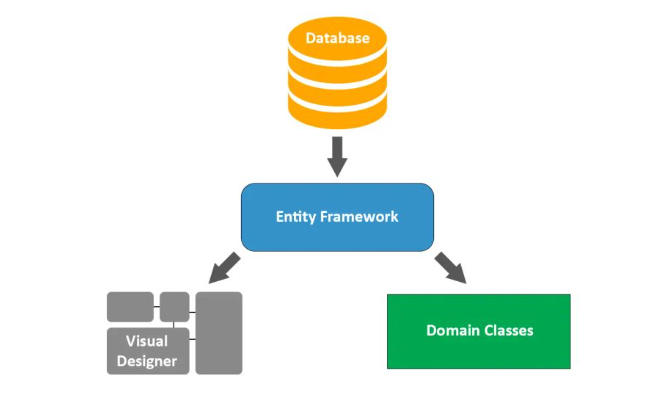
**Entity Framework architecture**

[Entity Framework (EF) is an object-relational mapping framework that allows .NET developers to work with relational data using domain-specific objects](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) [1](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) . [This framework eliminates the need for most of the data access code that developers would normally have to write](https://www.bing.com/aclk?ld=e8OYLjYUA4xBsblZViYLjNUzVUCUxBV7PjM2Lxcgj8ITNRKkLBQV3Pz40KxJZG1zUlk69w6LXO7sDAiVU2hNvy0tEB-XI_5VN8NB3SoeADg2LFGk6t30_lVLuk67oUI_aACD3BybOFp3RLZMX5a-rPGwKUCvCuDj5klM5OJV07Tw-Ysttb&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=887e76a1e3e01932324713335909e89b) [1](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) .

[Entity Framework actually consists of three main parts : Entity Data Model , Object Services and LINQ to Entities 2](https://www.aparat.com/v/TS1Ft/%D8%AF%D8%A7%D9%86%D9%84%D9%88%D8%AF_%D8%A2%D9%85%D9%88%D8%B2%D8%B4_%D8%AC%D8%A7%D9%85%D8%B9_%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C_Entity_Framework...) .

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* [**Object Services** : This layer of EF provides the ability to create, read, update and delete (CRUD) objects](https://www.bing.com/aclk?ld=e8OYLjYUA4xBsblZViYLjNUzVUCUxBV7PjM2Lxcgj8ITNRKkLBQV3Pz40KxJZG1zUlk69w6LXO7sDAiVU2hNvy0tEB-XI_5VN8NB3SoeADg2LFGk6t30_lVLuk67oUI_aACD3BybOFp3RLZMX5a-rPGwKUCvCuDj5klM5OJV07Tw-Ysttb&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=887e76a1e3e01932324713335909e89b) [1](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) . Also, this layer [provides support for querying data using Entity SQL and LINQ](https://www.bing.com/aclk?ld=e8OYLjYUA4xBsblZViYLjNUzVUCUxBV7PjM2Lxcgj8ITNRKkLBQV3Pz40KxJZG1zUlk69w6LXO7sDAiVU2hNvy0tEB-XI_5VN8NB3SoeADg2LFGk6t30_lVLuk67oUI_aACD3BybOFp3RLZMX5a-rPGwKUCvCuDj5klM5OJV07Tw-Ysttb&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=887e76a1e3e01932324713335909e89b) [1](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) .
* [**LINQ to Entities** : LINQ to Entities provides Language-Integrated Query (LINQ) support that allows developers to write queries against the Entity Framework conceptual model using Visual Basic or Visual C#](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) [3](https://bing.com/search?q=%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C+Entity+Framework) . [Queries against the Entity Framework are represented by command tree queries that are executed against the application context](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) [3](https://bing.com/search?q=%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C+Entity+Framework) .

To learn more about Entity Framework , you can refer to [this tutorial](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) See . [This training includes various topics such as using EF in ASP.NET , Code First and Database First methods in Entity Framework , etc.](https://www.bing.com/aclk?ld=e8OYLjYUA4xBsblZViYLjNUzVUCUxBV7PjM2Lxcgj8ITNRKkLBQV3Pz40KxJZG1zUlk69w6LXO7sDAiVU2hNvy0tEB-XI_5VN8NB3SoeADg2LFGk6t30_lVLuk67oUI_aACD3BybOFp3RLZMX5a-rPGwKUCvCuDj5klM5OJV07Tw-Ysttb&u=aHR0cHMlM2ElMmYlMmZlbnRpdHlmcmFtZXdvcmstZXh0ZW5zaW9ucy5uZXQlMmZidWxrLW1lcmdlJTNmdXRtX3NvdXJjZSUzZGJpbmclMjZ1dG1fbWVkaXVtJTNkY3BjJTI2dXRtX2NhbXBhaWduJTNkRUZFJTI1MjAtJTI1MjBUMSUyNnV0bV90ZXJtJTNkJTI1MkJlbnRpdHklMjUyMCUyNTJCZnJhbWV3b3JrJTI1MjAlMjUyQmJ1bGslMjUyMCUyNTJCbWVyZ2UlMjZ1dG1fY29udGVudCUzZEJ1bGtNZXJnZQ&rlid=887e76a1e3e01932324713335909e89b) [1](https://barnamenevis.org/showthread.php?341260-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%A7%D8%B3%D8%AA%D9%81%D8%A7%D8%AF%D9%87-%D8%A7%D8%B2-Entity-Framework-%D8%AF%D8%B1-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-3-%D9%84%D8%A7%DB%8C%D9%87-%D9%87%D9%85%D8%B1%D8%A7%D9%87-%D8%A8%D8%A7-%D9%85%D8%AB%D8%A7%D9%84-%D8%B9%D9%85%D9%84%DB%8C) .



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