**LINQ BASICS**

**Getting Data from the DB**

Getting data from our databases whether local or remote requires the use of a C# class named “ApplicationDbContext”. Usually we can see this object being used as a private member variable named **db** in a Controller after we have scaffolded one of our models;

private ApplicationDbContext **db** = new ApplicationDbContext();

Another area in our project that we can see an ApplicationDbContext object in use is in the **Seed** method of our Configuration class. The Seed method takes an argument of type ApplicationDbContext but instead of calling it db the parameter is called **context**

protected override void Seed(ApplicationDbContext **context**)

The name of the variable (**db** or **context**) is not important, what is important is how we can use the instance variable to help us get data from tables within our Db. To achieve this, we will be using Language Integrated Queries (**LINQ**) in conjunction with our instance variable to query tables which will be turned into SQL select statements behind the scenes before being interpreted by SQL Server. While LINQ is admittedly a large topic we can get away with using a small subset of syntax to accomplish most of our data needs. Here are a few common LINQ queries that you are likely to need.

**Examples**

* **Get all records from** a Db table named **Tickets**

IEnumerable<Ticket> tickets =db**.Tickets**;

List<Ticket> tickets =db.Tickets**.ToList()**;

* **Get all records from** a Db table named Tickets where *Title* = “Test”

IQueryable<Ticket> tickets = db.Tickets**.Where(t => t.Title ==** “Test”);

List<Ticket> tickets = db.Tickets**.Where(t => t.Title ==** “Test”).**ToList();**

* **Get all records from** a Db table named Ticketswhere “Test Ticket” appears in the *Title*

var tickets = db.Tickets.**Where**(t => t.**Title**.**Contains**("Test Ticket"));

* **Get a single record from** the Tickets table when I have the record’s Primary Key (**PK**)

Ticket ticket = db.Tickets**.Find(PK)**;

* **Get a single record from** the Tickets table when I have some piece of data for the Ticket

Ticket ticket = db.Tickets**.**Where**(**t => t.**Title ==** “Test”**).FirstOrDefault()**;

Ticket ticket = db.Tickets**.**Where**(**t => t.**Title ==** “Test”).**Take(1)**;

Ticket ticket = db.Tickets**.FirstOrDefault**(t => t.**Title == “Test”)**;

Ticket ticket = db.Tickets**.**Where**(**t => t.**ProjectId ==** 4**).FirstOrDefault()**;

Ticket ticket = db.Tickets**.**Where**(**t => t.**ProjectId ==** 4).**Take(1)**;

Ticket ticket = db.Tickets**.FirstOrDefault**(t => t.**ProjectId ==** 4**)**;