


MODULE 2 DATABASE PROGRAMMING

Introduction to Databases and SELECT





**Remember those
awesome
programs from
Module 1?**



Typing fun?

```
Dictionary<string, string> animals = new Dictionary<string, string>()  
{  
    {"rhino", "Crash" },  
    {"giraffe", "Tower" },  
    {"elephant", "Herd" },  
    {"lion", "Pride" },  
    {"crow", "Murder" },  
    {"pigeon", "Kit" },  
    {"flamingo", "Pat" },  
    {"deer", "Herd" },  
    {"dog", "Pack" },  
    {"crocodile", "Float" },  
};
```



Let's use files!

DATABASES!



ELEVATE  YOURSELF



Official nerdy definition

A **database** is an organized collection of data that can be accessed, managed, and updated

Sample Entity

Attribute

Record

ANSI SQL Datatypes

char
varchar
nvarchar
int
decimal
bigint
boolean/bit
datetime

Code	Name	Continent	Region
CYM	Cayman Islands	North America	Caribbean
CHL	Chile	South America	South America
COK	Cook Islands	Oceania	Polynesia
CRI	Costa Rica	North America	Central America
DJI	Djibouti	Africa	Eastern Africa
DMA	Dominica	North America	Caribbean
DOM	Dominican Republic	North America	Caribbean
ECU	Ecuador	South America	South America
EGY	Egypt	Africa	Northern Africa
SLV	El Salvador	North America	Central America
ERI	Eritrea	Africa	Eastern Africa
ESP	Spain	Europe	Southern Europe
ZAF	South Africa	Africa	Southern Africa
ETH	Ethiopia	Africa	Eastern Africa
FLK	Falkland Islands	South America	South America
FJI	Fiji Islands	Oceania	Melanesia
PHL	Philippines	Asia	Southeast Asia
FRO	Faroe Islands	Europe	Nordic Countries
GAB	Gabon	Africa	Central Africa



THE LANGUAGE OF DATABASES

SQL (Structured Query Language)

- SQL consists of:
 - data definition language to define the data structures
 - data manipulation language to query and modify the data in a database
 - data control language to define access to a particular database

SQL is a declarative programming language



THE LANGUAGE OF DATABASES

SELECT is used to return data

SELECT [column], [column-n] **FROM** [table];



THE LANGUAGE OF DATABASES

WHERE clause is used to filter the result set using one or more criteria rules

- Conditional clauses in the WHERE clause can include:
 - =, <>, !=, >, >=, <, <=
 - IN(values), NOT IN(values)
 - BETWEEN value AND value
 - IS NULL, IS NOT NULL
 - LIKE (with wildcard characters)
- Multiple conditions use AND and OR



THE LANGUAGE OF DATABASES

DISTINCT to remove duplicates

SELECT **DISTINCT** [column], [column-n] FROM [table];

AS is an alias

SELECT name **as title** from city

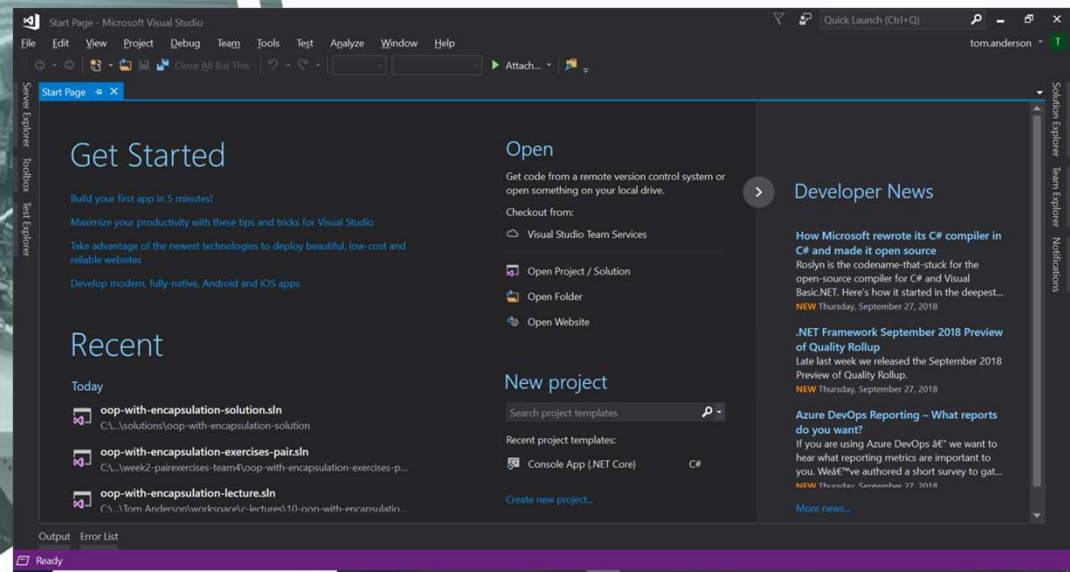


LET'S CODE!

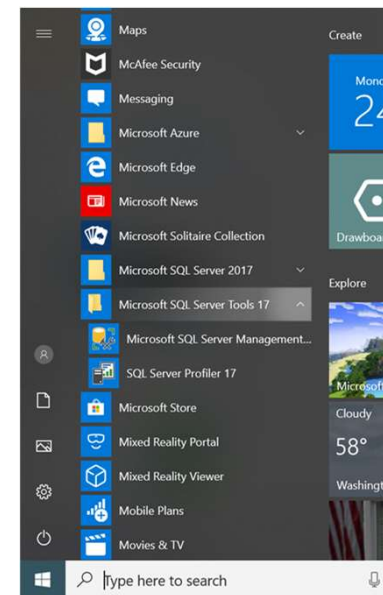
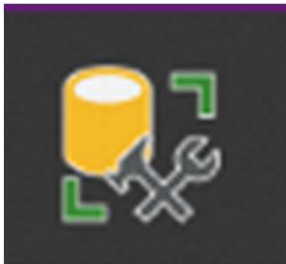


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WRITE CODE?



LAUNCH SSMS



Don't we need some data?





LAUNCH SSMS

**WHAT QUESTIONS DO
YOU HAVE?**

