



ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ

UNIVERSITY OF PIRAEUS

ΒΑΣΕΙΣ ΔΕΔΟΜΕΝΩΝ

ΕΡΓΑΣΙΑ ΕΞΑΜΗΝΟΥ 2019-20

ΟΜΑΔΑ :

Ε17155 ΤΣΟΥΦΗΣ ΘΕΟΔΩΡΟΣ

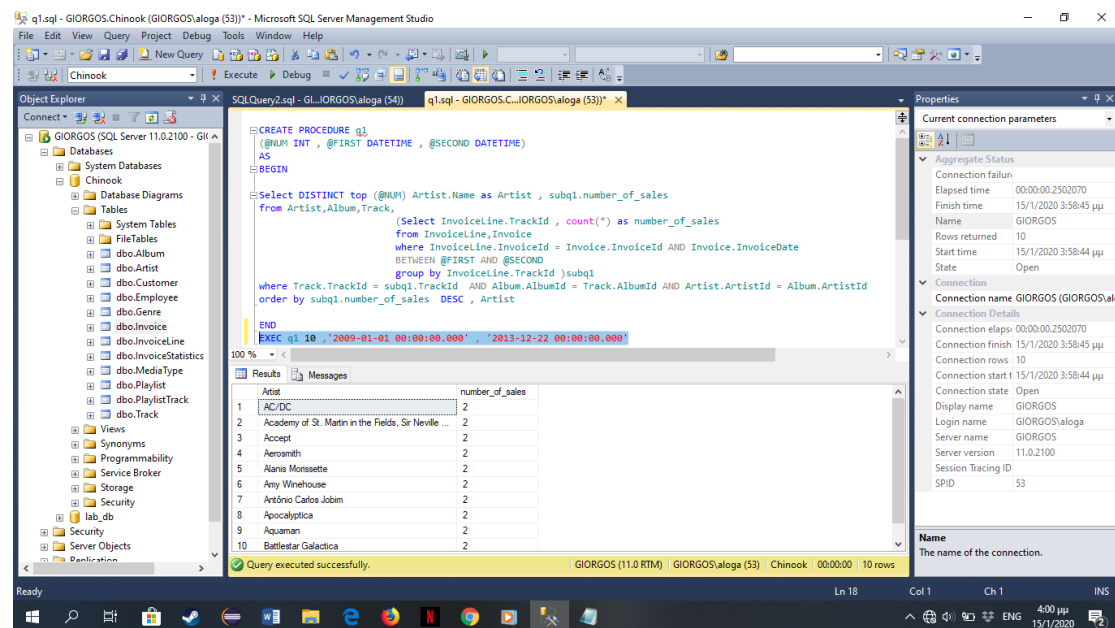
Ε14006 ΑΛΟΓΑΡΗΣ ΓΕΩΡΓΙΟΣ

Η Εργασία αποτελείται από 3 στάδια :

1. Δημιουργία εντολών SQL για την υλοποίηση των ζητούμενων αναφορών.
2. Δημιουργία μιας stored procedure που υλοποιεί συγκεκριμένες ζητούμενες λειτουργίες.
3. Ανάπτυξη της διαδικτυακής εφαρμογή σε Visual C# (ASP.NET Web Application), όπως αυτή ζητείται.

ΣΤΑΔΙΟ 1

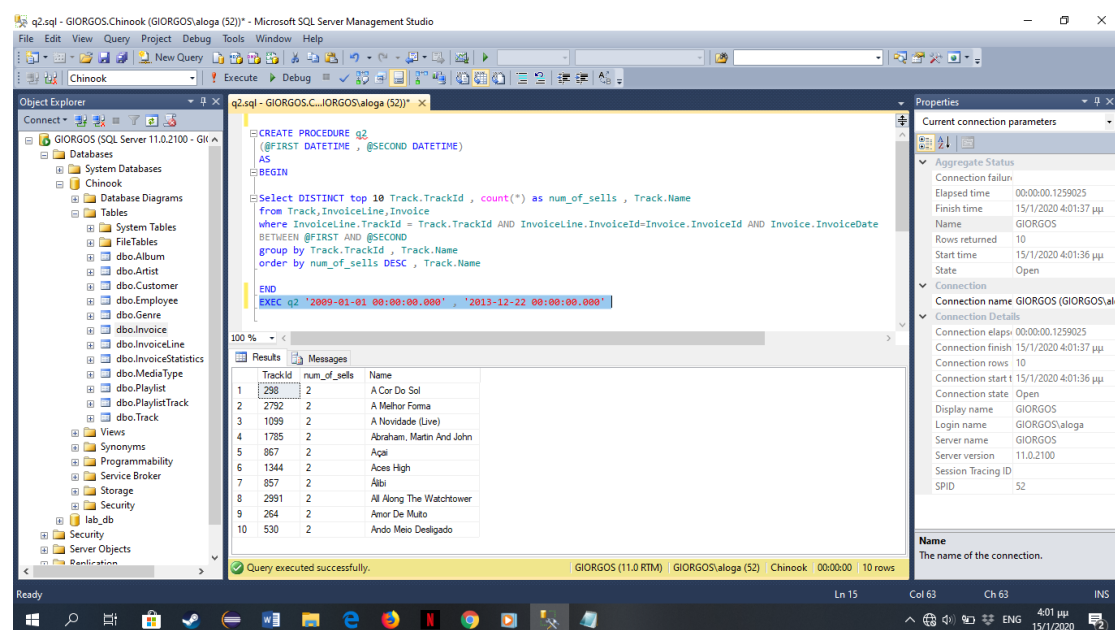
Αναφορά 1



The screenshot shows the Microsoft SQL Server Management Studio interface. The central pane displays the SQL code for a stored procedure named `q1`. The procedure takes three parameters: `@NUM INT`, `@FIRST DATETIME`, and `@SECOND DATETIME`. It performs a query to select the top 10 artists based on the number of sales, filtered by the date range from `2009-01-01 00:00:00.000` to `2013-12-22 00:00:00.000`. The results are displayed in a table with columns `Artist` and `number_of_sales`.

Artist	number_of_sales
AC/DC	2
Academy of St. Martin in the Fields, Sir Neville ...	2
Accept	2
Aeromath	2
Ariane Morissette	2
Amy Winehouse	2
Antonio Carlos Jobim	2
Apocalyptica	2
Aquaman	2
Battlestar Galactica	2

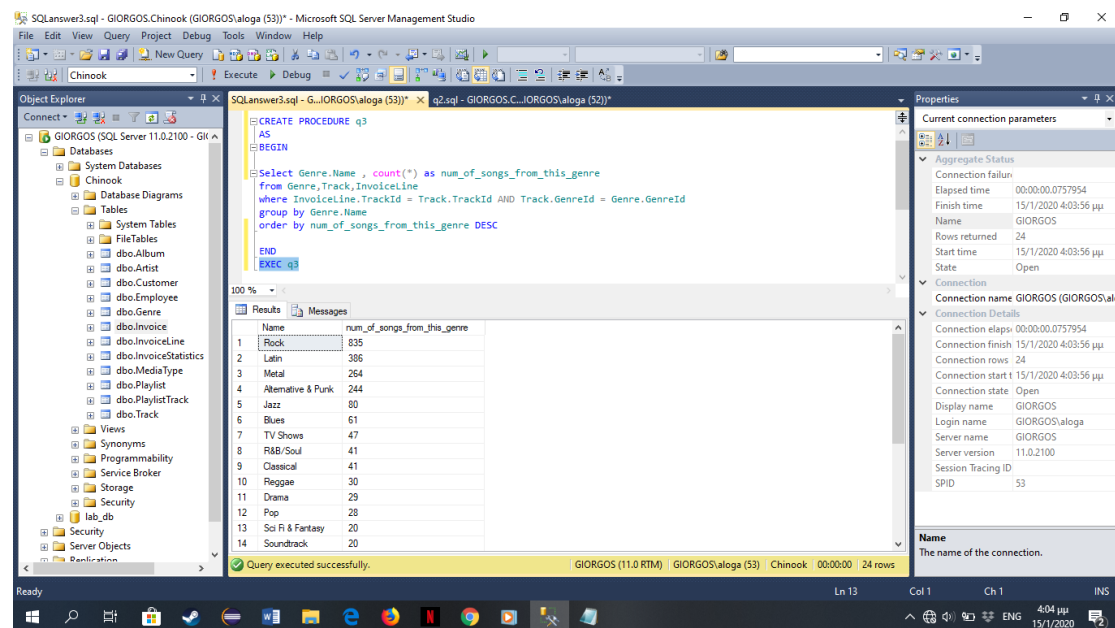
Αναφορά 2



The screenshot shows the Microsoft SQL Server Management Studio interface. The central pane displays the SQL code for a stored procedure named `q2`. The procedure takes two parameters: `@FIRST DATETIME` and `@SECOND DATETIME`. It performs a query to select the top 10 tracks based on the number of sales, filtered by the date range from `2009-01-01 00:00:00.000` to `2013-12-22 00:00:00.000`. The results are displayed in a table with columns `TrackId`, `num_of_sells`, and `Name`.

TrackId	num_of_sells	Name
2980	2	A Cor Do Sol
2792	2	A Melhor Foma
1099	2	A Noivada (Live)
1705	2	Abraham, Martin And John
867	2	Aapi
1344	2	Aces High
857	2	Albi
2991	2	All Along The Watchtower
264	2	Amor De Mito
530	2	Ando Meio Desligado

Αναφορά 3



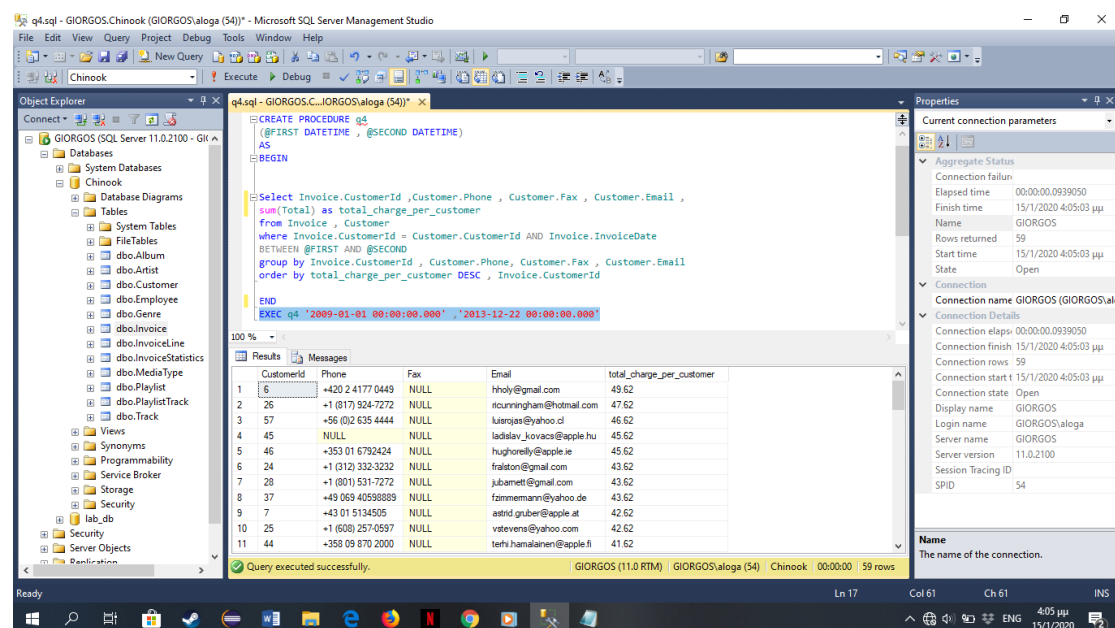
SQL Server Management Studio (SSMS) interface showing a query execution for 'q2.sql' in the 'GIORGOS' database. The query creates a procedure 'q3' and then selects genre names and song counts.

```
CREATE PROCEDURE q3
AS
BEGIN
    Select Genre.Name , count(*) as num_of_songs_from_this_genre
    from Genre,Track,InvoiceLine
    where InvoiceLine.TrackId = Track.TrackId AND Track.GenreId = Genre.GenreId
    group by Genre.Name
    order by num_of_songs_from_this_genre DESC
END
EXEC q3
```

The results show 14 rows of data:

Name	num_of_songs_from_this_genre
Rock	835
Latin	396
Metal	264
Alternative & Punk	244
Jazz	80
Blues	61
TV Shows	47
R&B/Soul	41
Classical	41
Fleggae	30
Drama	29
Pop	28
Sci Fi & Fantasy	20
Soundtrack	20

Αναφορά 4



SQL Server Management Studio (SSMS) interface showing a query execution for 'q4.sql' in the 'GIORGOS' database. The query creates a procedure 'q4' and then selects invoice details for a specific date range.

```
CREATE PROCEDURE q4
    (@FIRST DATETIME , @SECOND DATETIME)
AS
BEGIN
    Select Invoice.CustomerId ,Customer.Phone , Customer.Fax , Customer.Email ,
    sum(Total) as total_charge_per_customer
    from Invoice , Customer
    where Invoice.CustomerId = Customer.CustomerId AND Invoice.InvoiceDate
    BETWEEN @FIRST AND @SECOND
    group by Invoice.CustomerId , Customer.Phone , Customer.Fax , Customer.Email
    order by total_charge_per_customer DESC , Invoice.CustomerId
END
EXEC q4 '2009-01-01 00:00:00.000' , '2013-12-22 00:00:00.000'
```

The results show 11 rows of data:

CustomerId	Phone	Fax	Email	total_charge_per_customer
6	+420 2 4177 0449	NULL	hholy@gmail.com	49.62
26	+1 (817) 524-7272	NULL	rcunningham@hotmail.com	47.62
57	+55 (012) 635 4444	NULL	luarqas@yahoo.d	46.62
45	NULL	NULL	ledisley_kovacs@apple.hu	45.62
46	+353 01 6792424	NULL	hughonelly@apple.ie	45.62
24	+1 (012) 532-3332	NULL	fralston@gmail.com	43.62
7	+1 (801) 531-7272	NULL	jubamett@gmail.com	43.62
37	+49 069 40598899	NULL	faimmaman@yahoo.de	43.62
9	+43 01 5134505	NULL	astrid.gruber@apple.at	42.62
25	+1 (608) 257-0597	NULL	vsteveens@yahoo.com	42.62
44	+358 09 870 2000	NULL	terhi.hamalainen@apple.fi	41.62

Αναφορά 5

Την αναφορά αυτή την σπάσαμε σε 3 κομμάτια . Το πρώτο δέχεται ως input από το χρήστη ημερομηνία από-έως. Το δεύτερο ονοματεπώνυμο υπαλλήλου και το τρίτο ονοματεπώνυμο πελάτη.

The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The query editor displays the following T-SQL code:

```
CREATE PROCEDURE q5_1
    (@FIRST DATETIME , @SECOND DATETIME)
AS
BEGIN
    Select Invoice.InvoiceId , Customer.FirstName as Cfn , Customer.LastName as Cln , Employee.FirstName as Efn ,
    Employee.LastName Eln
    from Invoice, Customer, Employee
    where Invoice.CustomerId=Customer.CustomerId AND Customer.SupportRepId = Employee.EmployeeId
    AND Invoice.InvoiceDate BETWEEN @FIRST AND @SECOND
    order by Invoice.InvoiceId
END

EXEC q5_1 '2009-01-01 00:00:00.000' , '2013-12-22 00:00:00.000'
```

The Results pane shows the following data:

InvoiceId	Cfn	Cln	Efn	Eln
1	Leonie	Köhler	Steve	Johnson
2	Ejøn	Hansen	Margaret	Park
3	Daan	Peeters	Margaret	Park
4	Mark	Philips	Steve	Johnson
5	John	Gordon	Margaret	Park
6	Fynn	Zimmermann	Jane	Peacock
7	Niklas	Schröder	Jane	Peacock
8	Dominique	Lefebvre	Margaret	Park
9	Wyatt	Grard	Jane	Peacock
10	Hugh	O'Reilly	Jane	Peacock
11	Emma	Jones	Jane	Peacock

The Properties pane on the right shows connection details for 'GIORGOS\aloga (52)'.

The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The query editor displays the following T-SQL code:

```
CREATE PROCEDURE q5_2
    (@En NVARCHAR(30), @Es NVARCHAR(30) )
AS
BEGIN
    Select Invoice.InvoiceId , Customer.FirstName as Cfn , Customer.LastName as Cln , Employee.FirstName as Efn ,
    Employee.LastName Eln
    from Invoice, Customer, Employee
    where Invoice.CustomerId=Customer.CustomerId AND Customer.SupportRepId = Employee.EmployeeId
    AND Employee.FirstName = @En AND Employee.LastName = @Es
    order by Invoice.InvoiceId
END

EXEC q5_2 'Steve', 'Johnson'
```

The Results pane shows the following data:

InvoiceId	Cfn	Cln	Efn	Eln
1	Leonie	Köhler	Steve	Johnson
4	Mark	Philips	Steve	Johnson
12	Leonie	Köhler	Steve	Johnson
14	Jack	Smith	Steve	Johnson
16	Kathy	Chase	Steve	Johnson
17	Victor	Stevens	Steve	Johnson
18	Martha	Silk	Steve	Johnson
20	Steve	Murray	Steve	Johnson
22	Luis	Rojas	Steve	Johnson
29	Hannah	Schneider	Steve	Johnson
32	Johannes	Van der Berg	Steve	Johnson

The Properties pane on the right shows connection details for 'GIORGOS\aloga (52)'.

q5.sql - GIORGOS.Chinook (GIORGOS.aloga (52)) - Microsoft SQL Server Management Studio

```

CREATE PROCEDURE q5_3
(
    @Cn NVARCHAR(30), @Cs NVARCHAR(30)
)
AS
BEGIN
    Select Invoice.InvoiceId, Customer.FirstName as Cfn, Customer.LastName as Cln, Employee.FirstName as Efn,
    Employee.LastName as Eln
    from Invoice, Customer, Employee
    where Invoice.CustomerId = Customer.CustomerId AND Customer.SupportRepId = Employee.EmployeeId
    AND Customer.FirstName = @Cn AND Customer.LastName = @Cs
    order by Invoice.InvoiceId
END

EXEC q5_3 'Jack', 'Smith'

```

InvoiceId	Cfn	Cln	Efn	Eln
14	Jack	Smith	Steve	Johnson
37	Jack	Smith	Steve	Johnson
59	Jack	Smith	Steve	Johnson
111	Jack	Smith	Steve	Johnson
232	Jack	Smith	Steve	Johnson
243	Jack	Smith	Steve	Johnson
298	Jack	Smith	Steve	Johnson

Query executed successfully. GIORGOS (11.0 RTM) GIORGOS.aloga (52) Chinook 00:00:00 7 rows

Αναφορά 6

Στην αναφορά αυτή εκμεταλλευτήκαμε το γεγονός πως κάθε κομμάτι έχει πωληθεί μόνο μια φορά μέσα σε ένα ημερολογιακό έτος και αυτό το συμπεράναμε μελετώντας τους πίνακες Invoice και InvoiceLine.

q6.sql - GIORGOS.Chinook (GIORGOS.aloga (53)) - Microsoft SQL Server Management Studio

```

CREATE PROCEDURE q6
(
    @YEAR INT
)
AS
BEGIN
    Select Track.Name as TrackName, Artist.Name as ArtistName, DATEPART(yy, (Invoice.InvoiceDate)) as 'Year',
    CASE WHEN DATEPART(quarter, (Invoice.InvoiceDate)) = 1 THEN InvoiceLine.UnitPrice END AS Q1,
    CASE WHEN DATEPART(quarter, (Invoice.InvoiceDate)) = 2 THEN InvoiceLine.UnitPrice END AS Q2,
    CASE WHEN DATEPART(quarter, (Invoice.InvoiceDate)) = 3 THEN InvoiceLine.UnitPrice END AS Q3,
    CASE WHEN DATEPART(quarter, (Invoice.InvoiceDate)) = 4 THEN InvoiceLine.UnitPrice END AS Q4
    from InvoiceLine, Invoice, Track, Artist, Album
    where InvoiceLine.InvoiceId = Invoice.InvoiceId AND DATEPART(yy, (Invoice.InvoiceDate)) = @YEAR
    AND InvoiceLine.TrackId = Track.TrackId AND Track.AlbumId = Album.AlbumId AND Album.ArtistId = Artist.ArtistId
    order by TrackName, ArtistName
END

EXEC q6 2018

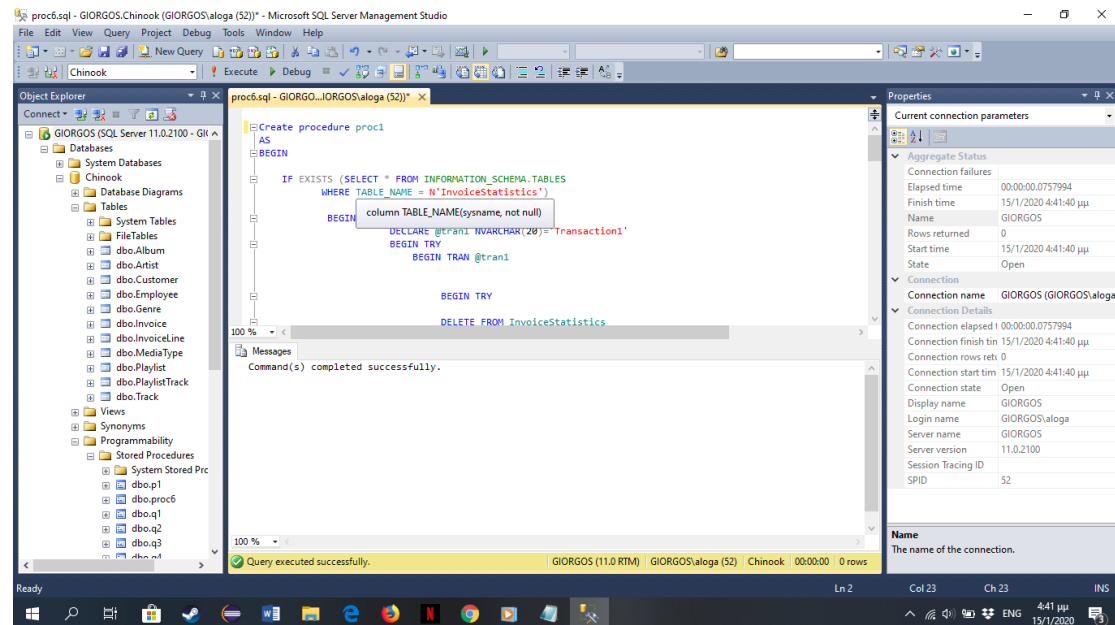
```

TrackName	ArtistName	Year	Q1	Q2	Q3	Q4
#9 Dream	U2	2010	0.99	NULL	NULL	NULL
(Anesthesia) Pulling Teeth	Metallica	2010	NULL	NULL	NULL	0.99
(Wish I Could) Hideaway	Creedence Clearwater Revival	2010	NULL	NULL	0.99	NULL
05 - Phantom of the Opera	Iron Maiden	2010	NULL	NULL	0.99	NULL
2 Minutes To Midnight	Iron Maiden	2010	NULL	NULL	0.99	NULL
32 Dentes	Tiëss	2010	0.99	NULL	NULL	NULL
A Melhor Forma	Tiëss	2010	0.99	NULL	NULL	NULL
A Noite Do Meu Bem	Milton Nascimento	2010	NULL	0.99	NULL	0.99
A.N.D.R.O.I.D.A.Z.	Black Label Society	2010	NULL	0.99	NULL	NULL
Academus	Davran	2010	NULL	NULL	0.99	NULL
Aces High	Iron Maiden	2010	NULL	NULL	0.99	NULL

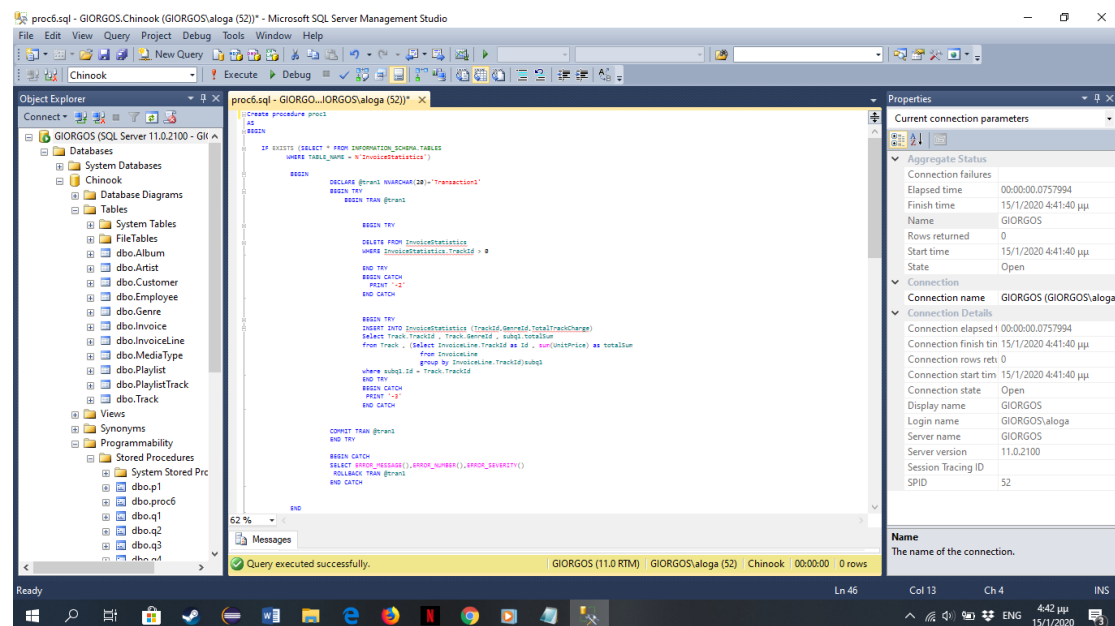
Query executed successfully. GIORGOS (11.0 RTM) GIORGOS.aloga (53) Chinook 00:00:00 455 rows

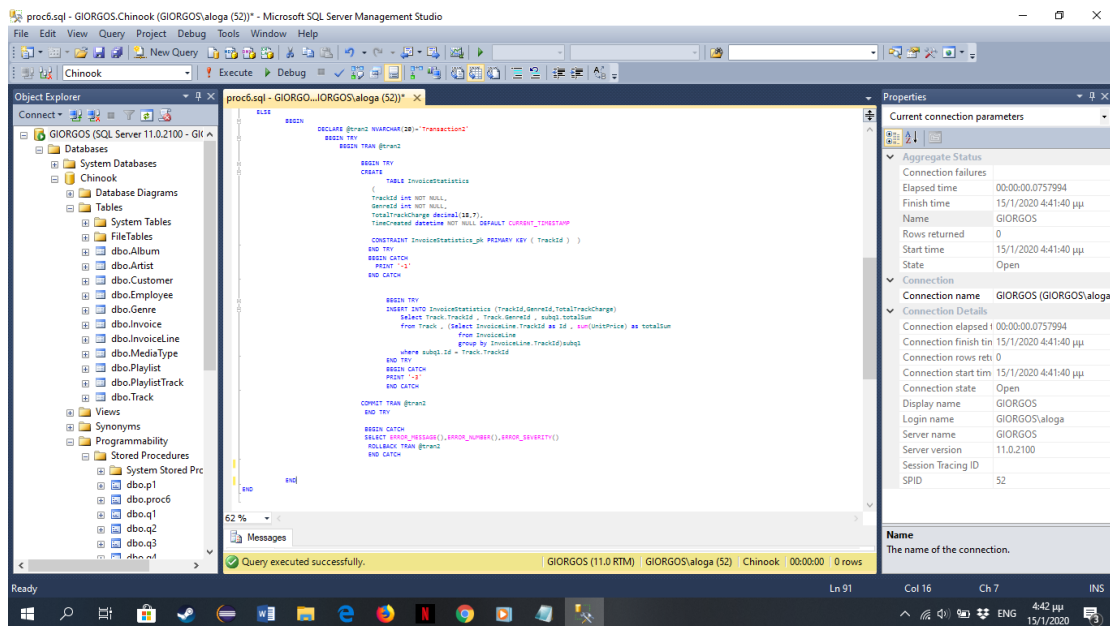
ΣΤΑΔΙΟ 2

Η procedure ολοκληρώνεται σωστά και χωρίς errors

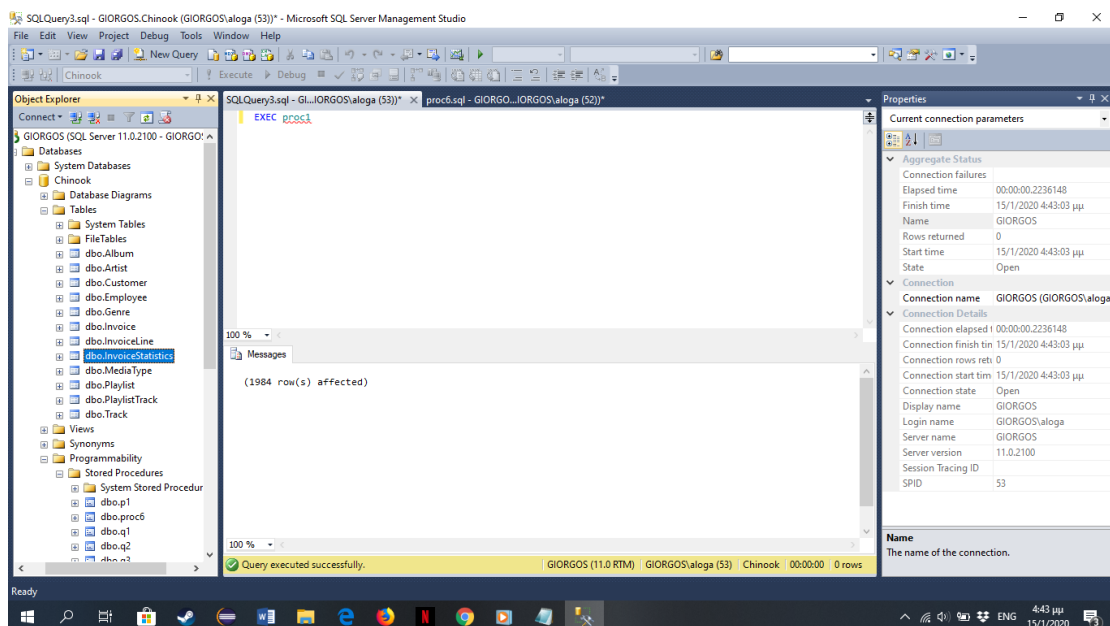


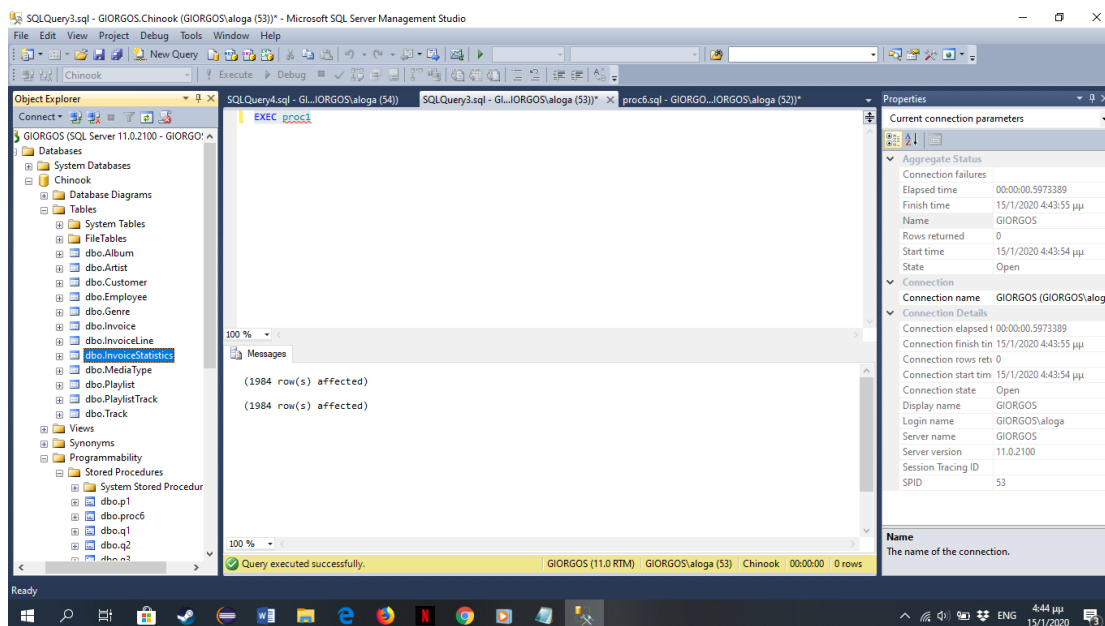
Παρακάτω φαίνεται η υλοποίηση ολόκληρης της procedure



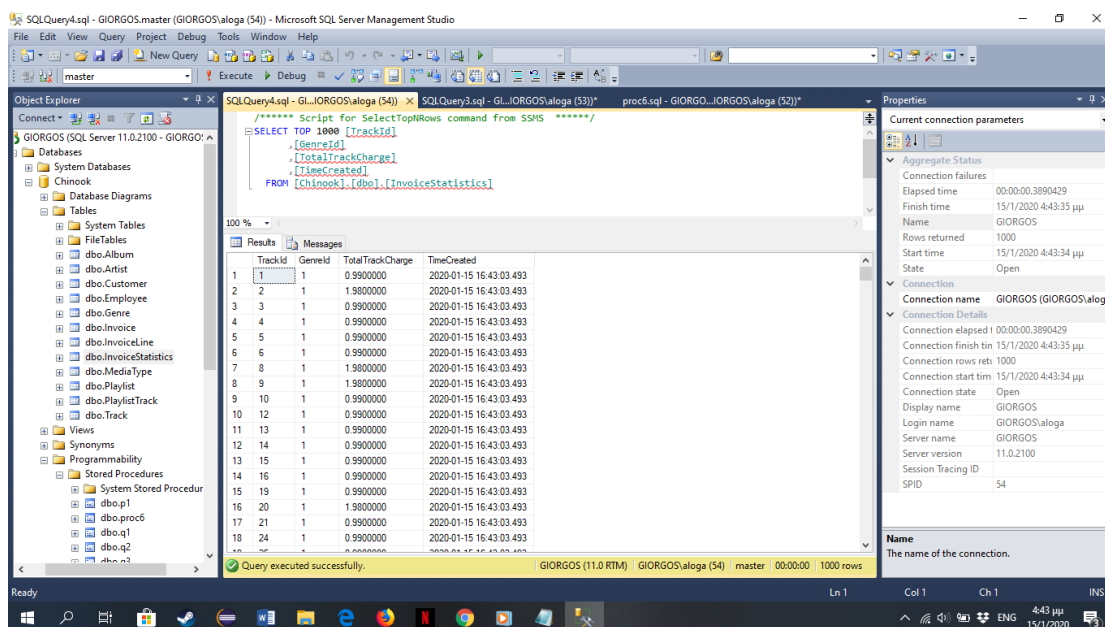


Η procedure και για τις δύο περιπτώσεις (ο πίνακας InvoiceStatistics
προυπάρχει ή όχι) γίνεται σωστά exec, όπως φαίνεται παρακάτω





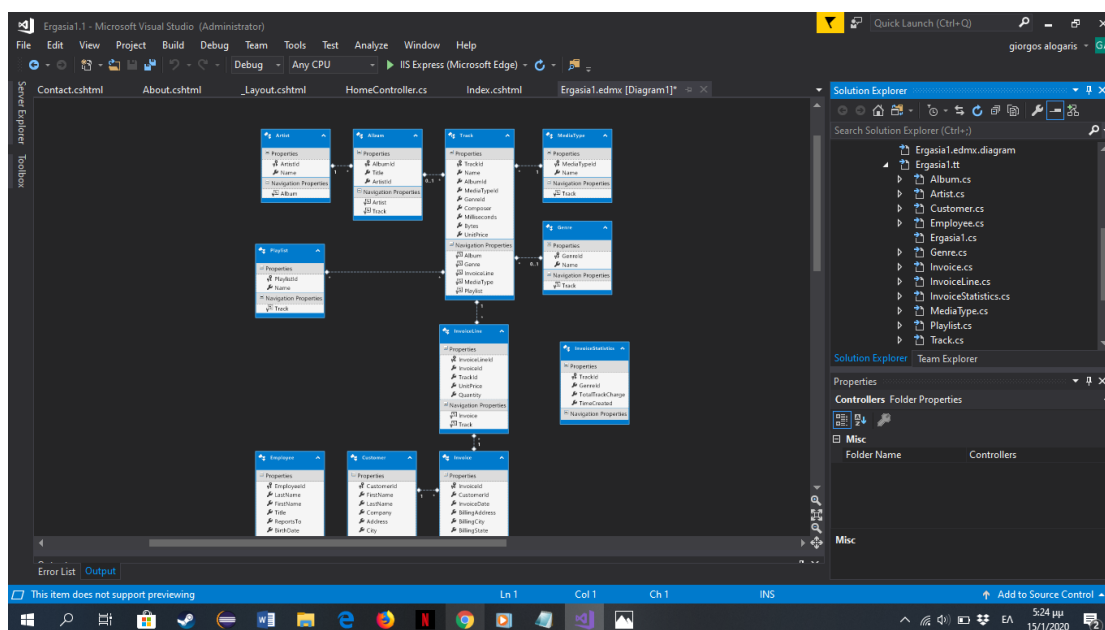
Ο πίνακας που δημιουργείται και στις δύο περιπτώσεις είναι ο :



ΣΤΑΔΙΟ 3

Βάση του tutorial που αναρτήθηκε στον εύδοξο και μας παράπεμπε σε αυτό το [λινκ](#),στήσαμε την διαδικτυακή εφαρμογή σε Visual C# (ASP.NET Web Application) χρησιμοποιώντας την αρχιτεκτονική σχεδίασης Model View Controller στο περιβάλλον ανάπτυξης Visual Studio.

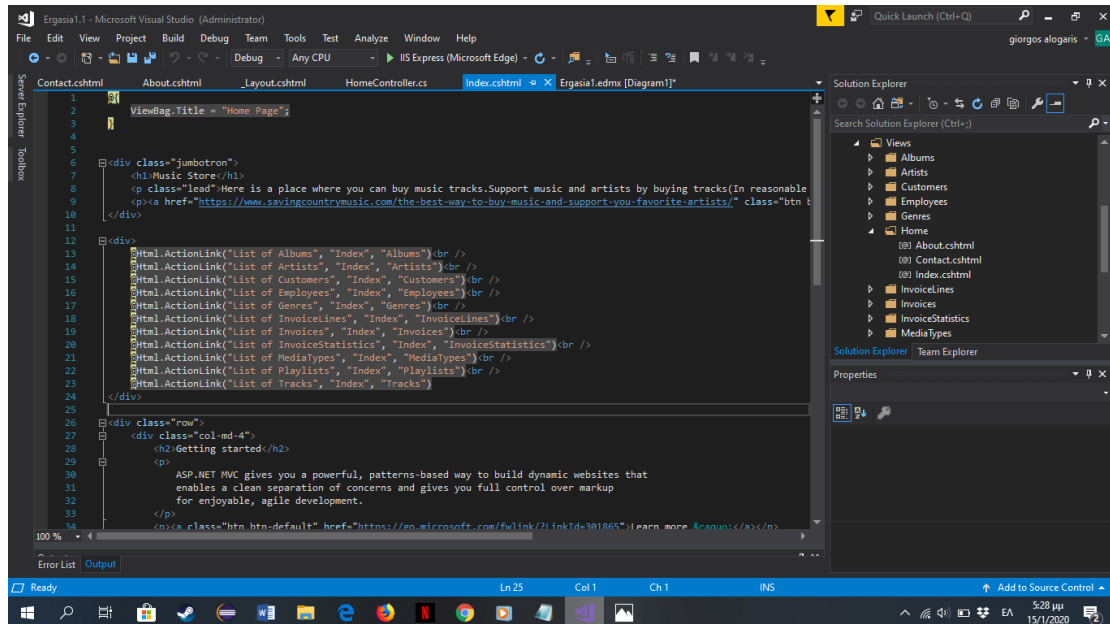
Με βάση τις υποδείξεις του tutorial και τη βάση δεδομένων μας,κατασκευάσαμε το ακόλουθο διάγραμμα μοντέλων με τις συσχετίσεις τους.



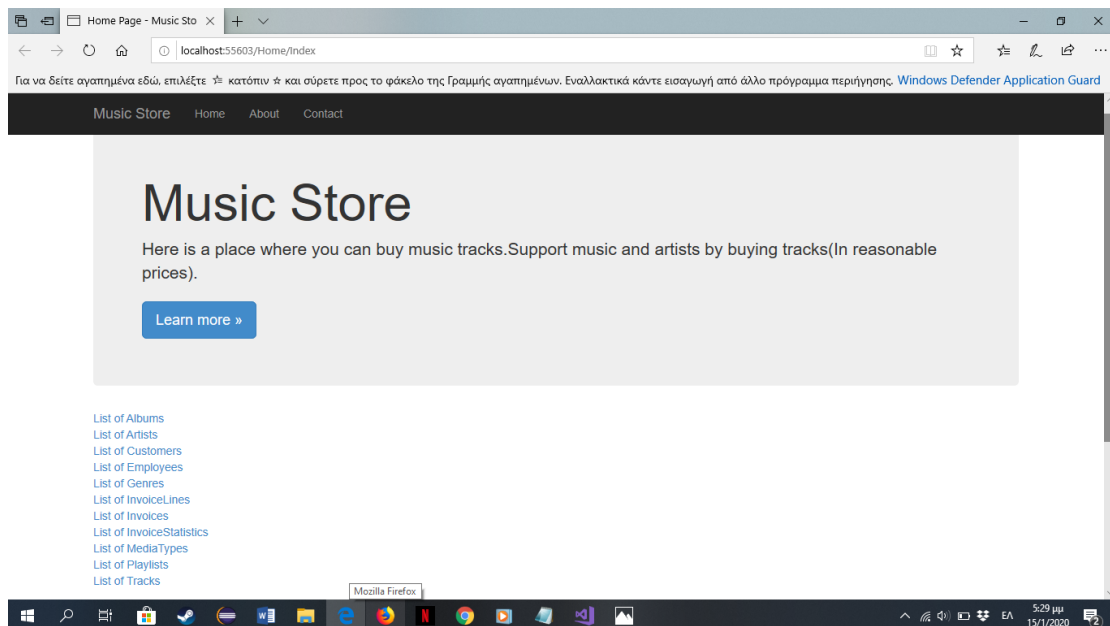
Στη συνέχεια φτιάξαμε τα controllers :

```
1 using System;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Web;
5 using System.Web.Mvc;
6
7 namespace Ergasia1_1.Controllers
8 {
9     public class HomeController : Controller
10     {
11         References | O requests | O exceptions
12         public ActionResult Index()
13         {
14             return View();
15         }
16
17         References | O requests | O exceptions
18         public ActionResult About()
19         {
20             ViewBag.Message = "Your application description page.";
21             return View();
22         }
23
24         References | O requests | O exceptions
25         public ActionResult Contact()
26         {
27             ViewBag.Message = "Your contact page.";
28             return View();
29         }
30     }
31 }
```

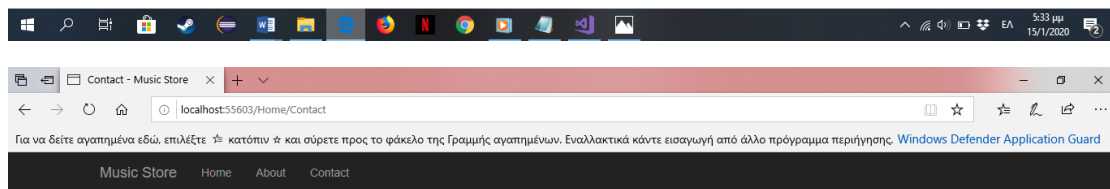
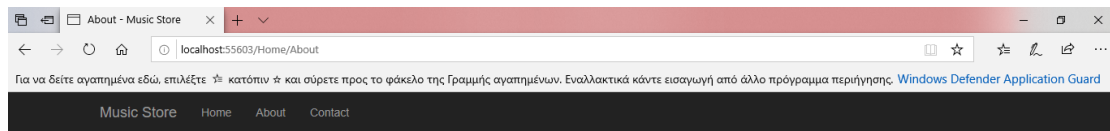
Και δημιουργήσαμε τα κατάλληλα links έτσι ώστε να εμφανίζονται οι πίνακές μας στη διαδικτυακή εφαρμογή.



Έτσι δημιουργήσαμε την ακόλουθη σελίδα :



Επίσης κάναμε μερικές αλλαγές στις καρτέλες και στο Home Index της σελίδας ώστε να ανταποκρίνονται στις ανάγκες της εργασίας(αλλαγή σε ονομασίες και περιγραφές)



Τελικά μέσω της εφαρμογής αυτής, οι διαχειριστές της μπορούν να διαχειρίζονται τις αγορές των μουσικών κομματιών. Επίσης να προσθέτουν πληροφορίες στους πίνακες της βάσης τους (όπως για παράδειγμα προσθήκη, διαγραφή ή επεξεργασία πελατών και κομματιών).

Ως παράδειγμα από κάτω φαίνεται ο πίνακας των μουσικών κομματιών και οι λειτουργίες που μπορούν να εφαρμοστούν σε αυτόν(Διαγραφή,Επεξεργασία ή Δημιουργία νέας καταχώρησης).

Index - Music Store

localhost:55603/Tracks

Για να δείτε αγαπημένα εδώ, επιλέξτε κατόπιν και σύρετε προς το φάκελο της Γραμμής αγαπημένων. Εναλλακτικά κάντε εισαγωγή από άλλο πρόγραμμα περιήγησης. [Windows Defender Application Guard](#)

Music StoreHomeAboutContact

Index

[Create New](#)

Name	Composer	Milliseconds	Bytes	UnitPrice	Title	Name	Name	
For Those About To Rock (We Salute You)	Angus Young, Malcolm Young, Brian Johnson	343719	11170334	0,99	For Those About To Rock We Salute You	Rock	MPEG audio file	Edit Details Delete
Balls to the Wall		342562	5510424	0,99	Balls to the Wall	Rock	Protected AAC audio file	Edit Details Delete
Fast As a Shark	F. Baltes, S. Kaufman, U. Dirksneider & W. Hoffman	230619	3990994	0,99	Restless and Wild	Rock	Protected AAC audio file	Edit Details Delete
Restless and Wild	F. Baltes, R.A. Smith-Diesel, S. Kaufman, U. Dirksneider & W. Hoffman	252051	4331779	0,99	Restless and Wild	Rock	Protected AAC audio file	Edit Details Delete
Princess of the Dawn	Deaffy & R.A. Smith-Diesel	375418	6290521	0,99	Restless and Wild	Rock	Protected AAC audio	Edit Details

5:38 μμ 15/1/2020