

## MSE 564: Knowledge Discovery from Databases and Data Visualization for Engineering Managers

Professor: Silvia Carpitella

Final Exam – Practical Part

Submission by: Jean Paul Collazo Arguedas

May 15<sup>th</sup>, 2024

Northridge, California

Final Exam  
Final Exam

May 14 by 10:30pm

May 14 at  
10:26pm

5 / 5



### Score Details

Close

Mean: 4.05  
Median: 4

High: 5  
Upper Quartile: 4.6

Low: 2.3  
Lower Quartile: 3.7



Jean Paul Collazo Arguedas

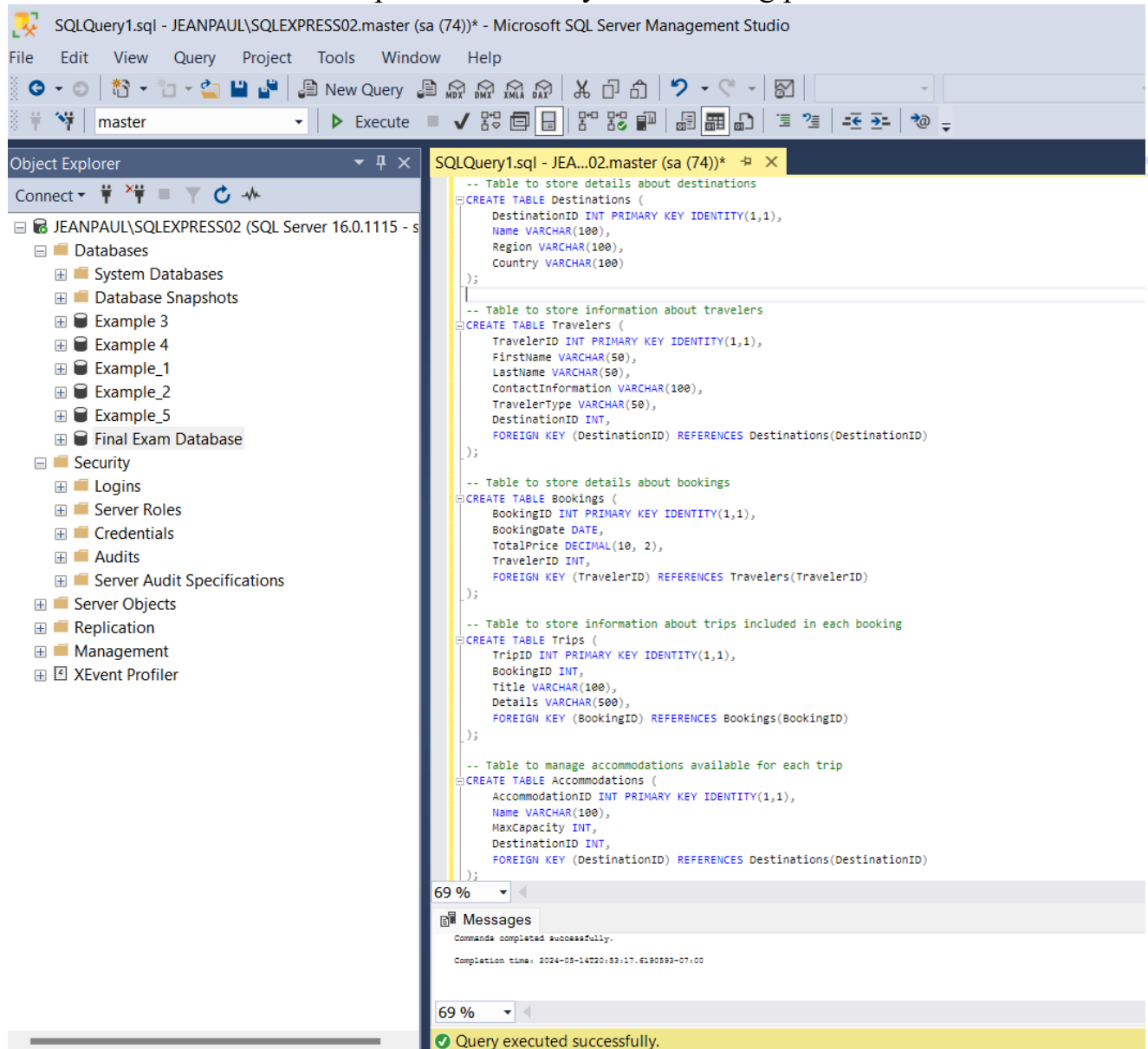
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Spring Semester 2024 | Graduate | CSU Northridge

### Class Grades - Spring Semester 2024

Official Grades					
Class	Description	Units	Grading	Grade	Grade Points
MSE 564	KNOWLDG FRM DB & VIS	3.00	Graded	A	12.000
MSE 618	SIX SIGMA QUAL ENGR	3.00	Graded	A	12.000
MSE 697MGT	ENGR MGMT COMPS	3.00	Credit / No Credit + U	CR	

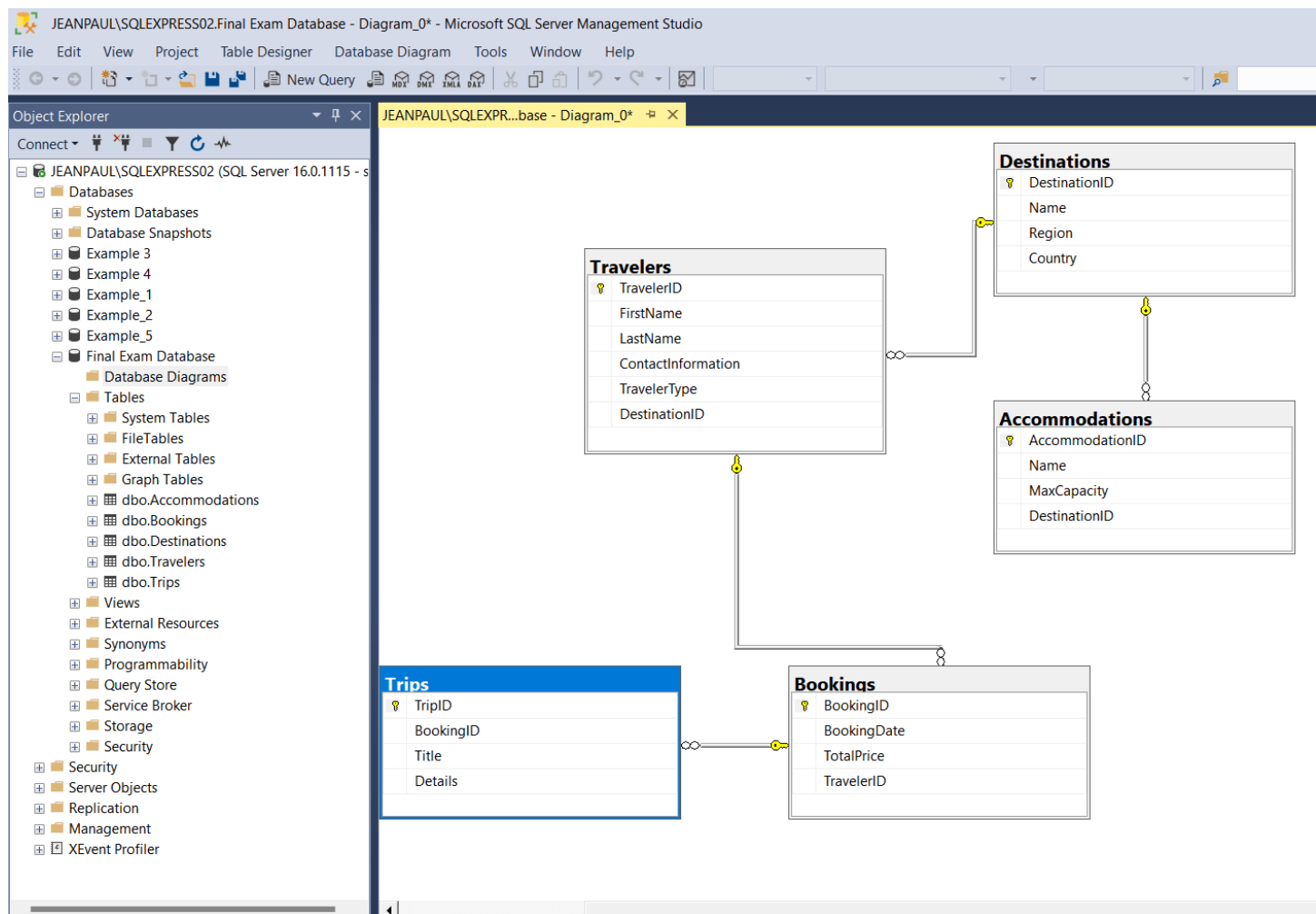
# 1. Create tables and relationships and describe your reasoning process.



## Explanation of Tables:

- f. Destinations Table: Stores details about different destinations including their names, region, and country.
- g. Travelers Table: Stores information about travelers including their names, contact information, and traveler type. Each traveler is assigned to a specific destination using a foreign key reference to the Destinations table.
- h. Bookings Table: Stores details about bookings, including the booking date and total price. Each booking is linked to a traveler using a foreign key reference to the Travelers table.
- i. Trips Table: Stores information about trips included in each booking, with a title and details limited to 500 characters. Each trip is associated with a specific booking using a foreign key reference to the Bookings table.

j. Accommodations Table: Manages accommodation available for each trip, including their name and maximum capacity. It Specifies in which destination each accommodation is located using a foreign key reference to the Destinations table.



### Explanation of Diagram:

**Destinations Table:** Contains information about different travel destinations.

Each destination has an ID, a name, a region, and a country.

**Travelers Table:** Contains information about travelers.

Each traveler has an ID, a first name, a last name, contact information, and a traveler type (like solo, family, business). Each traveler is linked to a destination by the DestinationID.

**Bookings Table:** Contains information about bookings.

Each booking has an ID, a booking date, and a total price.

Each booking is linked to a traveler by the TravelerID.

Trips Table: Contains information about trips included in each booking.

Each trip has an ID, a title, and details about the trip (limited to 500 characters).

Each trip is linked to a booking by the BookingID.

Accommodations Table:

Contains information about accommodation available for each trip. Each accommodation has an ID, a name, and maximum capacity. Each accommodation is linked to a destination by the DestinationID.

Relationships:

- Each destination can have multiple travelers.
- Each traveler can have multiple bookings.
- Each booking can include multiple trips.
- Each destination can have multiple accommodations.

Diagram Summary:

- ✓ Destinations table is at the center, connected to Travelers and Accommodations tables.
- ✓ Travelers table is connected to Bookings table.
- ✓ Bookings table is connected to Trips table.

2. Simulate a dataset containing at least 15 records each for the tables of destinations and bookings. Provide screenshots of all the excel tables.

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	A	B	C	D	E	F	G	H	I	J
1	DestinationID	Name	Region	Country						
2	1	Cancún	Quintana Roo	Mexico						
3	2	Rio de Janeiro	Rio de Janeiro	Brazil						
4	3	Buenos Aires	Buenos Aires	Argentina						
5	4	Santiago	Santiago	Chile						
6	5	Lima	Lima	Peru						
7	6	Cartagena	Bolívar	Colombia						
8	7	Quito	Pichincha	Ecuador						
9	8	Montevideo	Montevideo	Uruguay						
10	9	San José	San José	Costa Rica						
11	10	Havana	La Habana	Cuba						
12	11	La Paz	La Paz	Bolivia						
13	12	Asunción	Asunción	Paraguay						
14	13	Guatemala City	Guatemala	Guatemala						
15	14	San Salvador	San Salvador	El Salvador						
16	15	Panama City	Panamá	Panama						
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26										

< > Destinations Travelers Bookings Trips Accomodations +

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	A	B	C	D	E	F	G	H
1	TravelerID	FirstName	LastName	ContactInformation	TravelerType	DestinationID		
2	1	Juan	Pérez	juan.perez@mail.com	Solo	1		
3	2	Maria	Silva	maria.silva@mail.com	Family	2		
4	3	Carlos	Díaz	carlos.diaz@mail.com	Business	3		
5	4	Ana	Romero	ana.romero@mail.com	Solo	4		
6	5	Luis	Torres	luis.torres@mail.com	Family	5		
7	6	Elena	García	elena.garcia@mail.com	Business	6		
8	7	Jorge	Mendoza	jorge.mendoza@mail.com	Solo	7		
9	8	Sofia	López	sofia.lopez@mail.com	Family	8		
10	9	Diego	Ruiz	diego.ruiz@mail.com	Business	9		
11	10	Laura	Fernández	laura.fernandez@mail.com	Solo	10		
12	11	Ricardo	Ortiz	ricardo.ortiz@mail.com	Family	11		
13	12	Gabriela	Vargas	gabriela.vargas@mail.com	Business	12		
14	13	Andrés	Castro	andres.castro@mail.com	Solo	13		
15	14	Lucia	Moreno	lucia.moreno@mail.com	Family	14		
16	15	Pedro	Flores	pedro.flores@mail.com	Business	15		
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Destinations Travelers Bookings Trips Accomodations +

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H13

	A	B	C	D	E	F	G	H	I	J
1	BookingID	BookingDate	TotalPrice	TravelerID						
2	1	1/15/2022	1500	1						
3	2	2/20/2022	3000	2						
4	3	3/10/2023	2500	3						
5	4	4/5/2023	1200	4						
6	5	5/25/2024	2800	5						
7	6	6/14/2024	2200	6						
8	7	7/30/2024	1800	7						
9	8	8/19/2022	3500	8						
10	9	9/21/2023	2700	9						
11	10	10/15/2023	1400	10						
12	11	11/5/2024	2000	11						
13	12	12/10/2024	2300	12						
14	13	1/5/2022	2600	13						
15	14	2/14/2023	3200	14						
16	15	3/18/2023	2100	15						
17										
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Destinations Travelers Bookings Trips Accomodations +

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Clipboard Font Alignment Number

H5

	A	B	C	D	E
1	TripID	BookingID	Title	Details	
2	1	1	Cancún Beach Trip	Enjoy the beautiful beaches of Cancún with this 7-day trip.	
3	2	2	Rio Carnival Experience	Experience the vibrant Rio Carnival in this 10-day trip.	
4	3	3	Buenos Aires Tango Tour	Dive into the culture of Buenos Aires with tango shows.	
5	4	4	Santiago Adventure	Explore the Andes and Santiago's historical sites.	
6	5	5	Lima Culinary Journey	Discover Lima's rich culinary scene with guided tours.	
7	6	6	Cartagena History Walk	Walk through Cartagena's historical sites and beaches.	
8	7	7	Quito Cloud Forest Escape	Enjoy the natural beauty of Quito's cloud forests.	
9	8	8	Montevideo Wine Tour	Visit Montevideo's vineyards and wine tasting spots.	
10	9	9	Costa Rica Eco Tour	Discover the natural wonders of Costa Rica.	
11	10	10	Havana Cultural Exploration	Experience Havana's rich culture and history.	
12	11	11	La Paz Andean Expedition	Explore the high-altitude wonders of La Paz.	
13	12	12	Asunción Cultural Heritage	Learn about Asunción's cultural heritage.	
14	13	13	Guatemala City Historic Walk	Discover the historic sites of Guatemala City.	
15	14	14	San Salvador City Tour	Explore the vibrant streets of San Salvador.	
16	15	15	Panama Canal Adventure	Visit the Panama Canal and other landmarks.	
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

< > Destinations Travelers Bookings Trips Accommodations +



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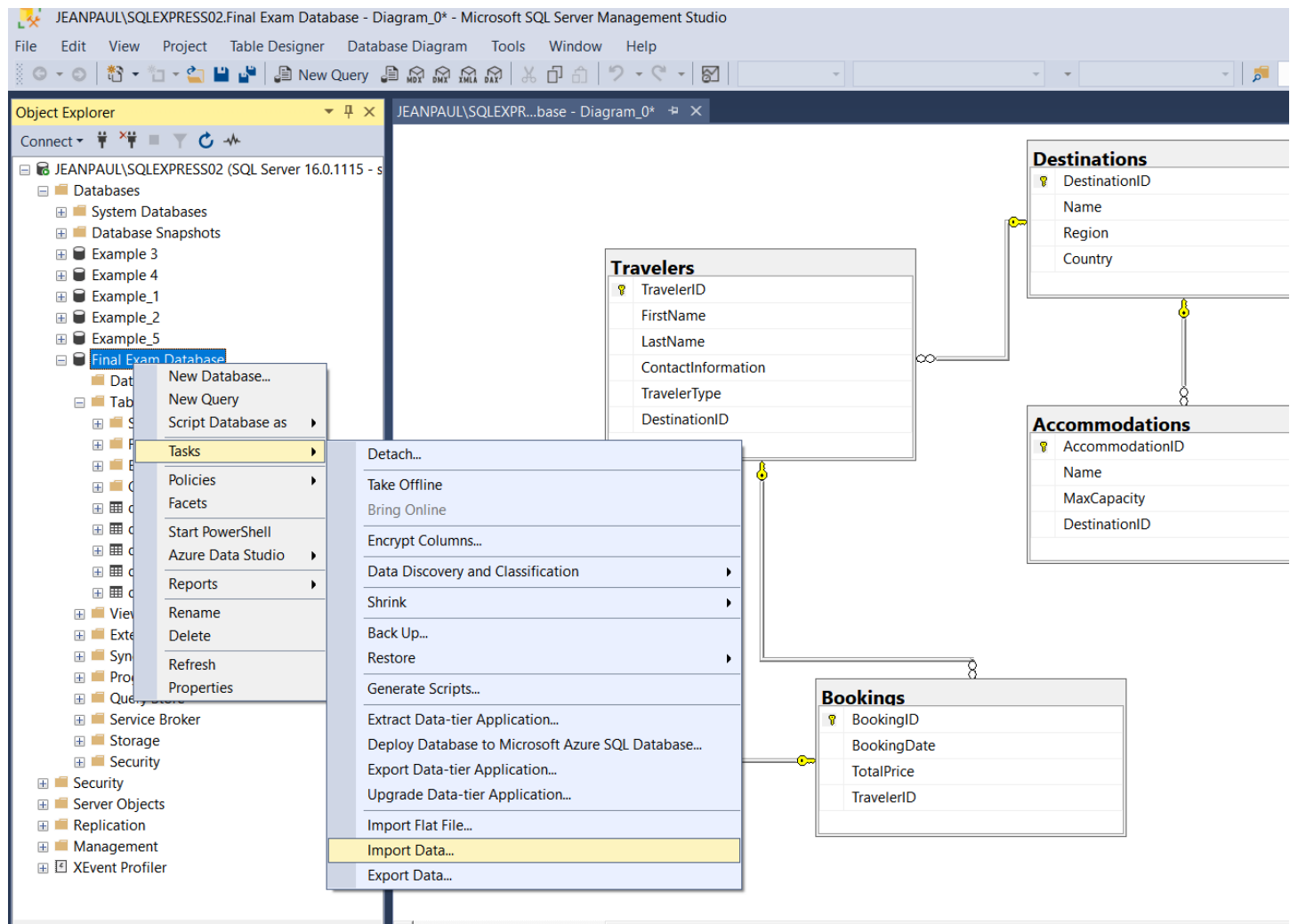
	A	B	C	D	E	F	G	H	I	J
1	AccommodationID	Name	MaxCapacity	DestinationID						
2	1	Beachside Hotel	100	1						
3	2	Carnival Inn	150	2						
4	3	Tango Residence	80	3						
5	4	Andes Lodge	50	4						
6	5	Culinary Suites	120	5						
7	6	Historical Hotel	90	6						
8	7	Cloud Forest Lodge	60	7						
9	8	Wine Yard Retreat	70	8						
10	9	Eco Lodge	110	9						
11	10	Cultural Hotel	100	10						
12	11	Andean Retreat	80	11						
13	12	Heritage Inn	70	12						
14	13	Historic Plaza Hotel	90	13						
15	14	City Central Hotel	85	14						
16	15	Canal View Hotel	95	15						
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Destinations Travelers Bookings Trips Accomodations +

Import all the data within the database and provide the screenshots of the step-by-step (at least when importing the last table ).

For this, considering the original requirements, my last data table is the Bookings Table. I will showcase all the screenshots for this table.

## First Step:



## Second Step

JEANPAUL\SQLEXPRESS02.Final Exam Database - Diagram\_0\* - Microsoft SQL Server Management Studio

SQL Server Import and Export Wizard

**Choose a Data Source**  
Select the source from which to copy data.

Data source: **Microsoft Excel**

Excel connection settings

Excel file path:  
C:\Users\colla\OneDrive\Desktop\Final Exam Folder\Final Exam MSE 564.xls **Browse...**

Excel version:  
Microsoft Excel 97-2003

☒ First row has column names

**Help** **< Back** **Next >** **Finish >>** **Cancel**

dbo.Travelers  
dbo.Trips  
Views  
External Resources  
Synonyms  
Programmability  
Query Store  
Service Broker  
Storage  
Security  
Security  
Server Objects  
Replication  
Management  
XEvent Profiler

**Trips**

TripID
BookingID
Title
Details

**Destinations**

DestinationID
Name
Region
Country

**Accommodations**

AccommodationID
Name
MaxCapacity
DestinationID

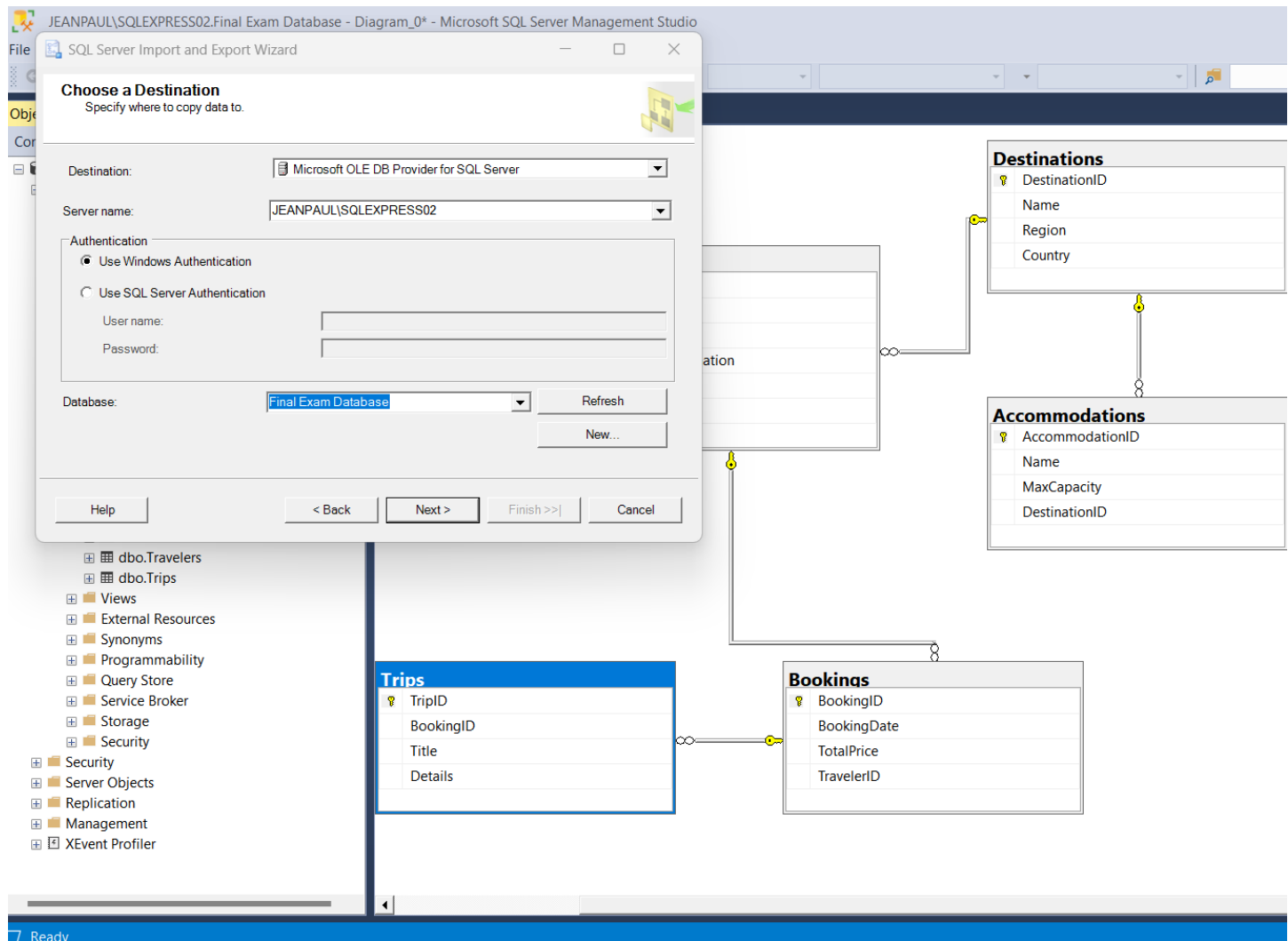
**Bookinas**

BookingID
BookingDate
TotalPrice
TravelerID

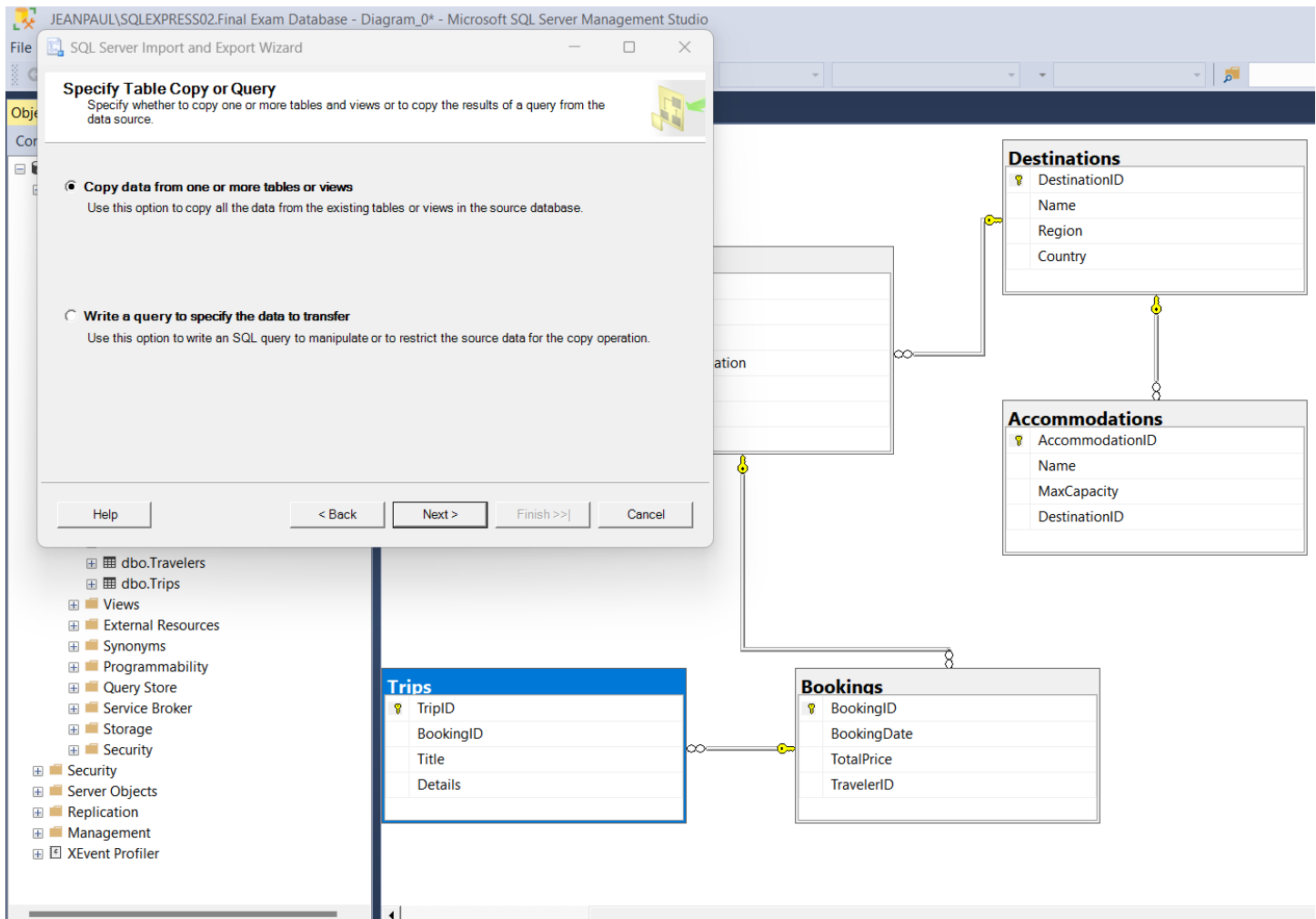
Ready

Project Completed

### Third Step



## Fourth Step



## Fifth Step

SQLQuery3.sql - JEANPAUL\SQLEXPRESS02.Final Exam Database (sa (65)) - Microsoft SQL Server Management Studio

File Edit View Project Tools Window Help

Object Explorer SQLQuery3.sql - JEA...Database (sa (65)) JEANPAUL\SQLEXP...base - Diagram\_0\*

Connect SQL Server Import and Export Wizard

**Select Source Tables and Views**  
Choose one or more tables and views to copy.

Tables and views:

Source: C:\Users\colla\OneDrive\Desktop\Fi...	Destination: JEANPAUL\SQLEXPRESS02
<input type="checkbox"/> 'Accomodations\$'	
<input checked="" type="checkbox"/> 'Bookings\$'	[dbo].[Bookings\$]
<input type="checkbox"/> 'Destinations\$'	[dbo].[Accommodations]
<input type="checkbox"/> 'Travelers\$'	[dbo].[Bookings]
<input type="checkbox"/> 'Trips\$'	[dbo].[Destinations]
	[dbo].[sysdiagrams]
	[dbo].[Travelers]
	[dbo].[Trips]

Edit Mappings... Preview...

Help < Back Next > Finish >>| Cancel

ID	DestinationID
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15

ID	DestinationID	First Name	Last Name	Email	Family
5	5	Luis	Torres	luis.torres@mail.com	Family
6	6	Elena	García	elena.garcia@mail.com	Business
7	7	Jorge	Mendoza	jorge.mendoza@mail.com	Solo
8	8	Sofia	López	sofia.lopez@mail.com	Family
9	9	Diego	Ruiz	diego.ruiz@mail.com	Business
10	10	Laura	Fernández	laura.fernandez@mail.com	Solo
11	11	Ricardo	Ortiz	ricardo.ortiz@mail.com	Family
12	12	Gabriela	Vargas	gabriela.vargas@mail.com	Business
13	13	Andrés	Castro	andres.castro@mail.com	Solo
14	14	Lucia	Moreno	lucia.moreno@mail.com	Family
15	15	Pedro	Flores	pedro.flores@mail.com	Business

Query executed successfully.

### Sixth Step

SQLQuery3.sql - JEANPAUL\SQLEXPRESS02.Final Exam Database (sa (65)) - Microsoft SQL Server Management Studio

File Edit View Project Tools Window Help

Final Exam Database Execute

Object Explorer

Connect

JEANPAUL\

Database

System

Database

Example

Example

Example

Example

Example

Example

Example

Final Exam Database

Database

Table

View

Extended Properties

System

Programmability

Query Store

Service Broker

Storage

Security

Security

Server Objects

Replication

Management

XEvent Profiler

Column Mappings

Source: 'Bookings\$'

Destination: [dbo].[Bookings]

Create destination table

Delete rows in destination table

Append rows to the destination table

Drop and re-create destination table

Enable identity insert

Mappings:

Source	Destination	Type	Nullable	Size	Precision	Scale
BookingID	BookingID	int	<input type="checkbox"/>			
BookingDate	BookingDate	date	<input checked="" type="checkbox"/>			
TotalPrice	TotalPrice	decimal	<input checked="" type="checkbox"/>		10	2
TravelerID	TravelerID	int	<input checked="" type="checkbox"/>			

Source column: BookingID Double (15)

OK Cancel

DestinationID
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

7	7	Jorge	Mendoza	jorge.mendoza@mail.com	Solo	7
8	8	Sofia	López	sofia.lopez@mail.com	Family	8
9	9	Diego	Ruiz	diego.ruiz@mail.com	Business	9
10	10	Laura	Fernández	laura.fernandez@mail.com	Solo	10
11	11	Ricardo	Ortiz	ricardo.ortiz@mail.com	Family	11
12	12	Gabriela	Vargas	gabriela.vargas@mail.com	Business	12
13	13	Andrés	Castro	andres.castro@mail.com	Solo	13
14	14	Lucia	Moreno	lucia.moreno@mail.com	Family	14
15	15	Pedro	Flores	pedro.flores@mail.com	Business	15

Query executed successfully.

## Seventh Step

SQLQuery3.sql - JEANPAUL\SQLEXPRESS02.Final Exam Database (sa (65)) - Microsoft SQL Server Management Studio

File Edit View Project Tools Window Help

Final Exam Database Execute

Object Explorer

SQL Server Import and Export Wizard

**Save and Run Package**  
Indicate whether to save the SSIS package.

☒ Run immediately  
☐ Save SSIS Package

☒ SQL Server  
☐ File system

Package protection level:  
Encrypt sensitive data with user key

Password:   
Retype password:

Help < Back Next > Finish >>| Cancel

ID	First Name	Last Name	Email	Phone Number	Address	City	State	Zip	Country	Region
5	Luis	Torres	luis.torres@mail.com				Family			
6	Elena	García	elena.garcia@mail.com				Business			
7	Jorge	Mendoza	jorge.mendoza@mail.com				Solo			
8	Sofia	López	sofia.lopez@mail.com				Family			
9	Diego	Ruiz	diego.ruiz@mail.com				Business			
10	Laura	Fernández	laura.fernandez@mail.com				Solo			
11	Ricardo	Ortiz	ricardo.ortiz@mail.com				Family			
12	Gabriela	Vargas	gabriela.vargas@mail.com				Business			
13	Andrés	Castro	andres.castro@mail.com				Solo			
14	Lucia	Moreno	lucia.moreno@mail.com				Family			
15	Pedro	Flores	pedro.flores@mail.com				Business			

Query executed successfully.



## Eight Step

SQLQuery3.sql - JEANPAUL\SQLEXPRESS02.Final Exam Database (sa (65)) - Microsoft SQL Server Management Studio

File Edit View Project Tools Window Help

Object Explorer

Connect SQL Server Import and Export Wizard

**Complete the Wizard**  
Verify the choices made in the wizard and click Finish.

**Click Finish to perform the following actions:**

Source Location : C:\Users\colla\OneDrive\Desktop\Final Exam Folder\Final Exam MSE 564.xls  
Source Provider : Microsoft.Jet.OLEDB.4.0  
Destination Location : JEANPAUL\SQLEXPRESS02  
Destination Provider : SQLOLEDB

- Copy rows from 'Bookings\$' to [dbo].[Bookings]  
The new rows will be appended to the existing table.
- The package will not be saved.
- The package will be run immediately.

Help < Back Next > Finish Cancel

ID	First Name	Last Name	Email	Type	DestinationID
5	Luis	Torres	luis.torres@mail.com	Family	5
6	Elena	Garcia	elena.garcia@mail.com	Business	6
7	Jorge	Mendoza	jorge.mendoza@mail.com	Solo	7
8	Sofia	López	sofia.lopez@mail.com	Family	8
9	Diego	Ruiz	diego.ruiz@mail.com	Business	9
10	Laura	Fernández	laura.fernandez@mail.com	Solo	10
11	Ricardo	Ortiz	ricardo.ortiz@mail.com	Family	11
12	Gabriela	Vargas	gabriela.vargas@mail.com	Business	12
13	Andrés	Castro	andres.castro@mail.com	Solo	13
14	Lucia	Moreno	lucia.moreno@mail.com	Family	14
15	Pedro	Flores	pedro.flores@mail.com	Business	15

Query executed successfully.

## Ninth Step

SQLQuery3.sql - JEANPAUL\SQLEXPRESS02.Final Exam Database (sa (65)) - Microsoft SQL Server Management Studio

File Edit View Project Tools Window Help

Object Explorer

SQL Server Import and Export Wizard

The execution was successful

Success

11 Total 0 Error  
11 Success 0 Warning

Details:

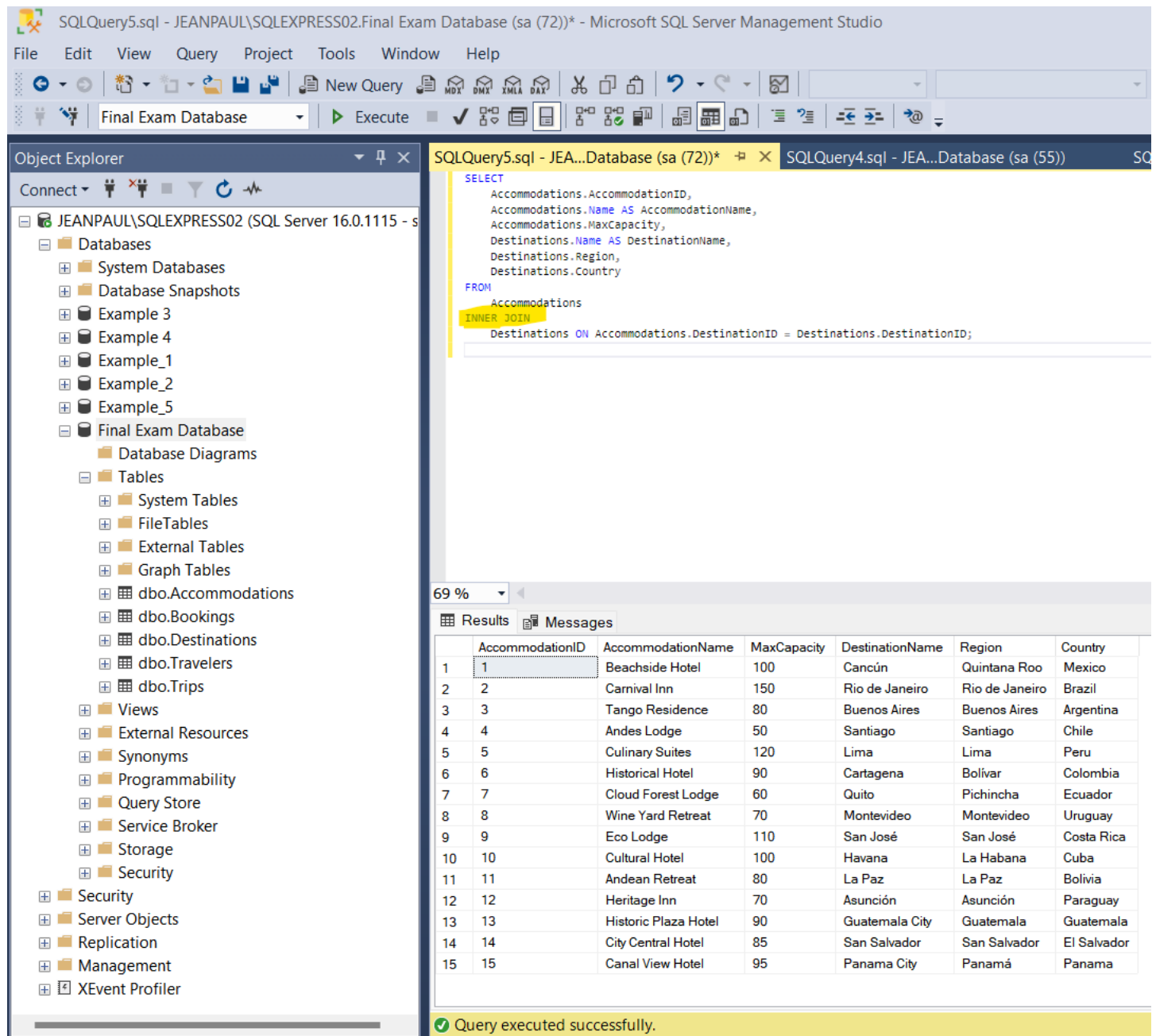
Action	Status	Message
Setting Source Connection	Success	
Setting Destination Connection	Success	
Validating	Success	
Prepare for Execute	Success	
Pre-execute	Success	
Executing	Success	
Copying to [dbo].[Bookings]	Success	15 rows transferred
Post-execute	Success	

Filter Stop Report Close

Query executed successfully.

ID	First Name	Last Name	Email	Phone Number	Address	City	State	Postal Code	Country
1	Luis	Torres	luis.torres@mail.com	917 555 1234	1234 Main St	New York	NY	10001	USA
2	Elena	Garcia	elena.garcia@mail.com	917 555 2345	5678 Main St	New York	NY	10002	USA
3	Jorge	Mendoza	jorge.mendoza@mail.com	917 555 3456	9012 Main St	New York	NY	10003	USA
4	Sofia	López	sofia.lopez@mail.com	917 555 4567	3456 Main St	New York	NY	10004	USA
5	Diego	Ruiz	diego.ruiz@mail.com	917 555 5678	7890 Main St	New York	NY	10005	USA
6	Laura	Fernández	laura.fernandez@mail.com	917 555 6789	2109 Main St	New York	NY	10006	USA
7	Ricardo	Ortiz	ricardo.ortiz@mail.com	917 555 7890	8765 Main St	New York	NY	10007	USA
8	Gabriela	Vargas	gabriela.vargas@mail.com	917 555 8901	4321 Main St	New York	NY	10008	USA
9	Andrés	Castro	andres.castro@mail.com	917 555 9012	6543 Main St	New York	NY	10009	USA
10	Lucia	Moreno	lucia.moreno@mail.com	917 555 0123	9876 Main St	New York	NY	10010	USA
11	Pedro	Flores	pedro.flores@mail.com	917 555 1234	5432 Main St	New York	NY	10011	USA
12									
13									
14									
15									

Now, let's organize a comprehensive visualization of the last table with another table of my choice via inner join. I will be explaining the results that I want to achieve further:



The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'JEANPAUL\SQLEXPRESS02 (SQL Server 16.0.1115 - s)'. The main window shows a SQL query in 'SQLQuery5.sql' that performs an inner join between the 'Accommodations' and 'Destinations' tables. The query selects columns from both tables: AccommodationID, AccommodationName, MaxCapacity from the Accommodations table, and DestinationName, Region, Country from the Destinations table. The results are displayed in a table with 7 columns and 15 rows.

	AccommodationID	AccommodationName	MaxCapacity	DestinationName	Region	Country
1	1	Beachside Hotel	100	Cancún	Quintana Roo	Mexico
2	2	Carnival Inn	150	Rio de Janeiro	Rio de Janeiro	Brazil
3	3	Tango Residence	80	Buenos Aires	Buenos Aires	Argentina
4	4	Andes Lodge	50	Santiago	Santiago	Chile
5	5	Culinary Suites	120	Lima	Lima	Peru
6	6	Historical Hotel	90	Cartagena	Bolívar	Colombia
7	7	Cloud Forest Lodge	60	Quito	Pichincha	Ecuador
8	8	Wine Yard Retreat	70	Montevideo	Montevideo	Uruguay
9	9	Eco Lodge	110	San José	San José	Costa Rica
10	10	Cultural Hotel	100	Havana	La Habana	Cuba
11	11	Andean Retreat	80	La Paz	La Paz	Bolivia
12	12	Heritage Inn	70	Asunción	Asunción	Paraguay
13	13	Historic Plaza Hotel	90	Guatemala City	Guatemala	Guatemala
14	14	City Central Hotel	85	San Salvador	San Salvador	El Salvador
15	15	Canal View Hotel	95	Panama City	Panamá	Panama

Query executed successfully.

For this scenario, I joined the Accommodations table with the Destinations table using an inner join to display a comprehensive view of accommodations along with their destination details.

This query selects the following columns:

- AccommodationID: The ID of the accommodation.
- AccommodationName: The name of the accommodation.
- MaxCapacity: The maximum capacity of the accommodation.
- DestinationName: The name of the destination where the accommodation is located.
- Region: The region of the destination.

- Country: The country of the destination.

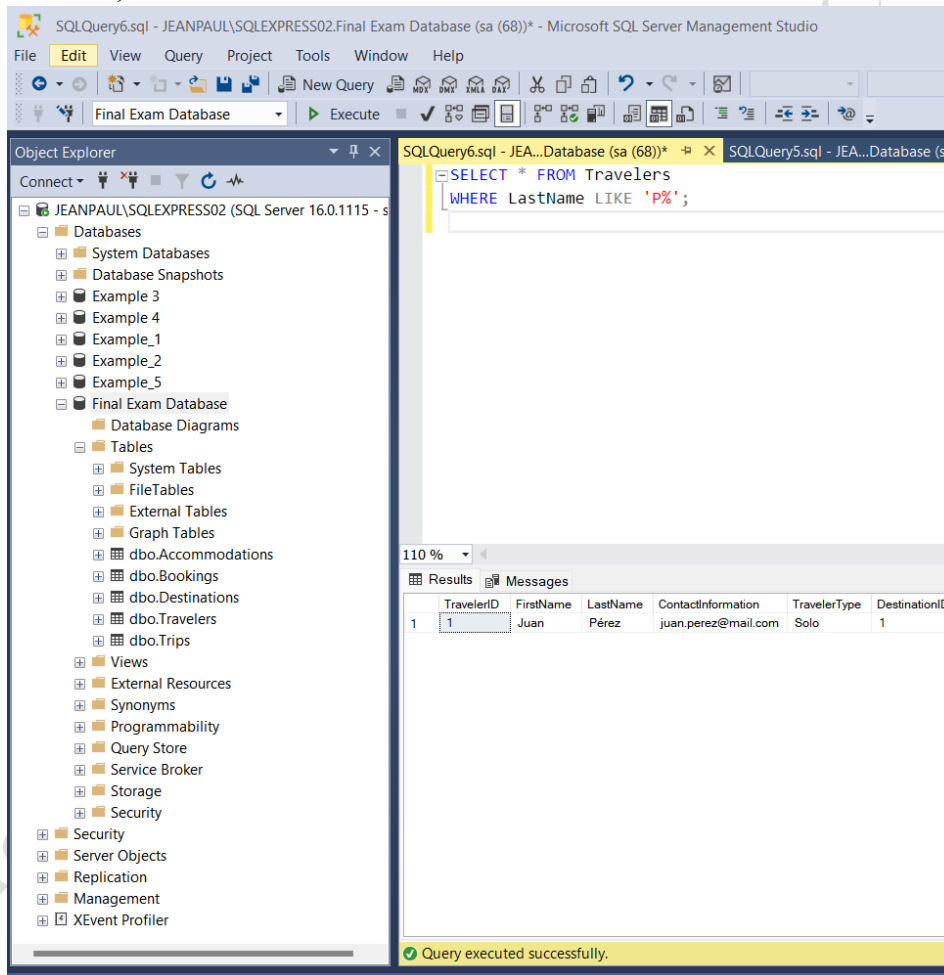
Executing this query will produce a table that combines the details from both Accommodations and Destinations, this is providing a comprehensive view of accommodations with their associated destination details.

*Note: Practical scenario, in case CompanyX has a reservation that involves multiple people, the company can easily identify the maximum number of guests each accommodation can host. This will allow them to propose a better scheme to the customers in a lesser time, which allows the enhancement of their operations.*

3. Report at least one practical example for each of the functions LIKE (with both % and \_ wildcards) and COUNT and explain your results.

#### Example of LIKE with % Wildcard

The % wildcard matches zero or more characters. We want to find all travelers with the last name starting with "P", for instance:



The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'JEANPAUL\SQLEXPRESS02'. The query window on the right contains the following SQL query:

```
SELECT * FROM Travelers
WHERE LastName LIKE 'P%';
```

The Results pane shows the output of the query, which is a single record from the Travelers table:

TravelerID	FirstName	LastName	ContactInformation	TravelerType	DestinationID
1	Juan	Pérez	juan.perez@mail.com	Solo	1

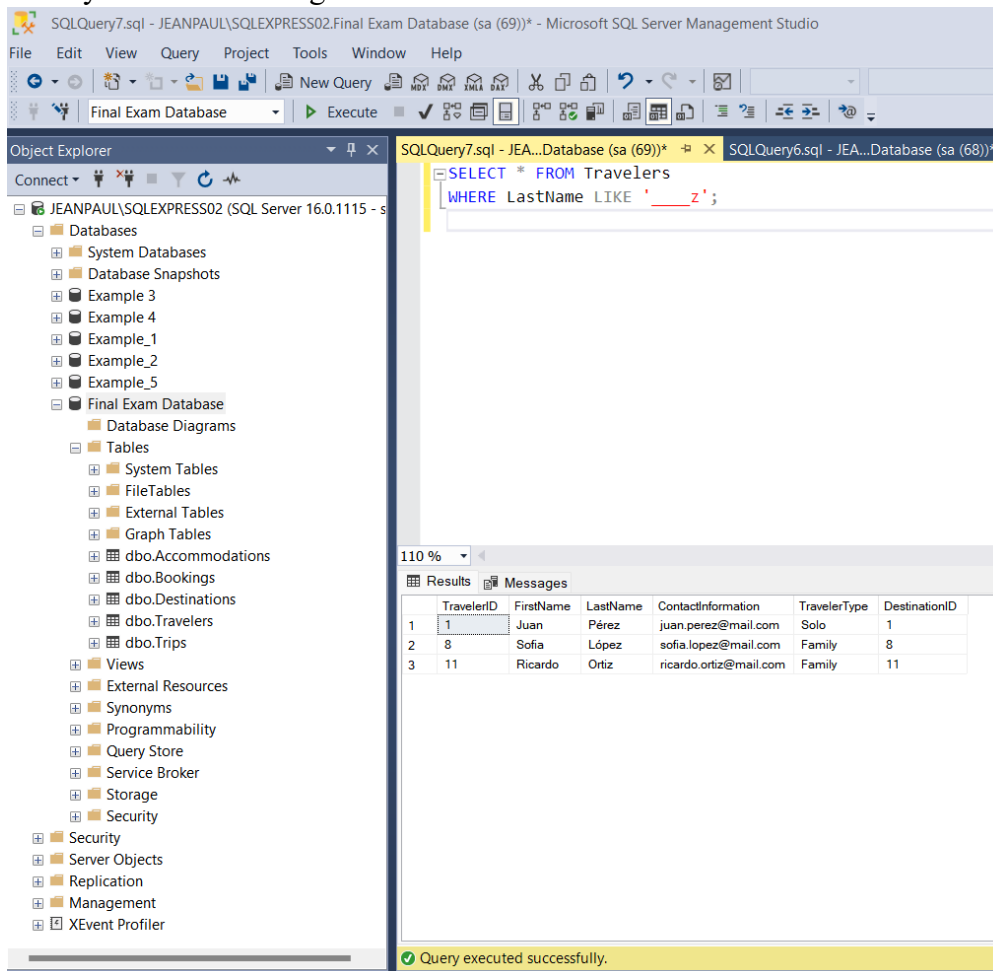
A status bar at the bottom indicates 'Query executed successfully.'

Explanation:

This query searches for all travelers whose last name starts with the letter "P". The % wildcard allows for any characters to follow "P". In this result, we only have one traveler, Juan Pérez, whose last name starts with "P".

### Example of LIKE with \_ Wildcard

The \_ wildcard matches exactly one character. Suppose we want to find all travelers whose last name is exactly 5 characters long and ends with "z".



The screenshot shows the Microsoft SQL Server Management Studio interface. The query editor displays the following SQL query:

```
SELECT * FROM Travelers
WHERE LastName LIKE '____z';
```

The Object Explorer on the left shows the database structure, including the 'Final Exam Database' and its tables. The Results pane shows the output of the query, which is a table with 6 columns: TravelerID, FirstName, LastName, ContactInformation, TravelerType, and DestinationID. The results are as follows:

	TravelerID	FirstName	LastName	ContactInformation	TravelerType	DestinationID
1	1	Juan	Pérez	juan.perez@mail.com	Solo	1
2	8	Sofia	López	sofia.lopez@mail.com	Family	8
3	11	Ricardo	Ortiz	ricardo.ortiz@mail.com	Family	11

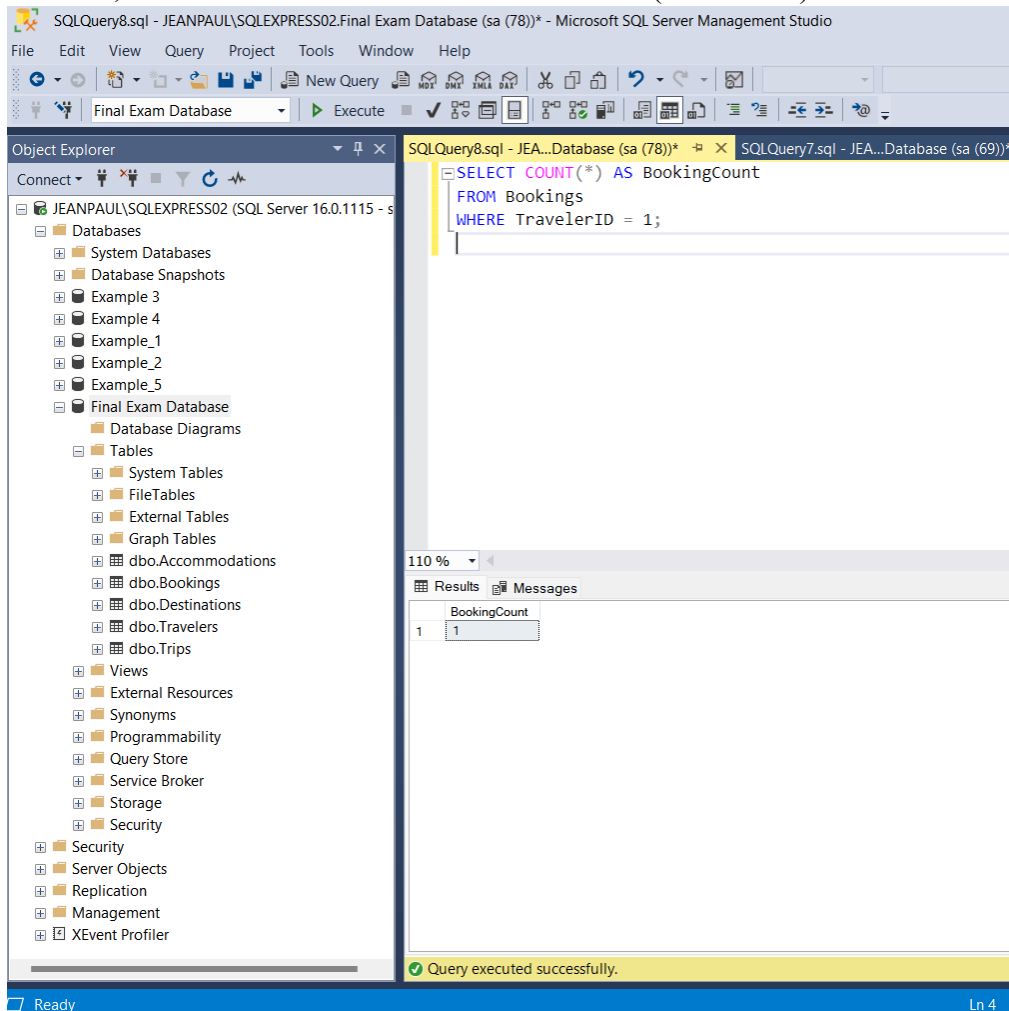
The status bar at the bottom indicates 'Query executed successfully.'

### Explanation:

This query searches for all travelers whose last name is exactly 5 characters long and ends with the letter "z". The \_ wildcard represents a single character. In this result, we have Juan Pérez again, whose last name matches the criteria of being 5 characters long and ending with "z". However, we can identify two more travelers: Sofia Lopez and Ricardo Ortiz.

Example of COUNT function:

The COUNT function is used to count the number of rows in a table or the number of non-NULL values in a column. Suppose we want to count the number of bookings made by a specific traveler, for this scenario, I will include traveler with TravelerID 1 (Juan Pérez).



The screenshot displays the Microsoft SQL Server Management Studio interface. The 'Object Explorer' on the left shows the 'Final Exam Database' with various tables listed, including 'dbo.Bookings'. The 'SQLQuery8.sql' editor in the center contains the following query:

```
SELECT COUNT(*) AS BookingCount
FROM Bookings
WHERE TravelerID = 1;
```

The 'Results' pane at the bottom shows the output of the query, which is a single row with the value 1 under the column 'BookingCount'.

BookingCount
1

A status bar at the bottom indicates 'Query executed successfully.'

Explanation:

This query counts the number of bookings made by the traveler with TravelerID 1. The COUNT(\*) function counts all rows that match the condition. Besides, In this result, the BookingCount is 1, indicating that Juan Pérez has made one booking.

Finally, these examples demonstrate the practical use of the LIKE operator with wildcards and the COUNT function in SQL.

#### 4. Create a Tableau dashboard with at least two visualizations and explain practical details.

##### Step 1:

Tableau - Book3

File Data Server Window Help

Connections [Add](#)

Final Exam MSE 564  
Microsoft Excel

Sheets [Add](#)

Accommodations

Bookings

Destinations

Travelers

Trips

New Union

New Table Extension

Trips+ (Final Exam MSE 564)

Connection ☒ Live ☐ Extract

Filters 0 | [Add](#)

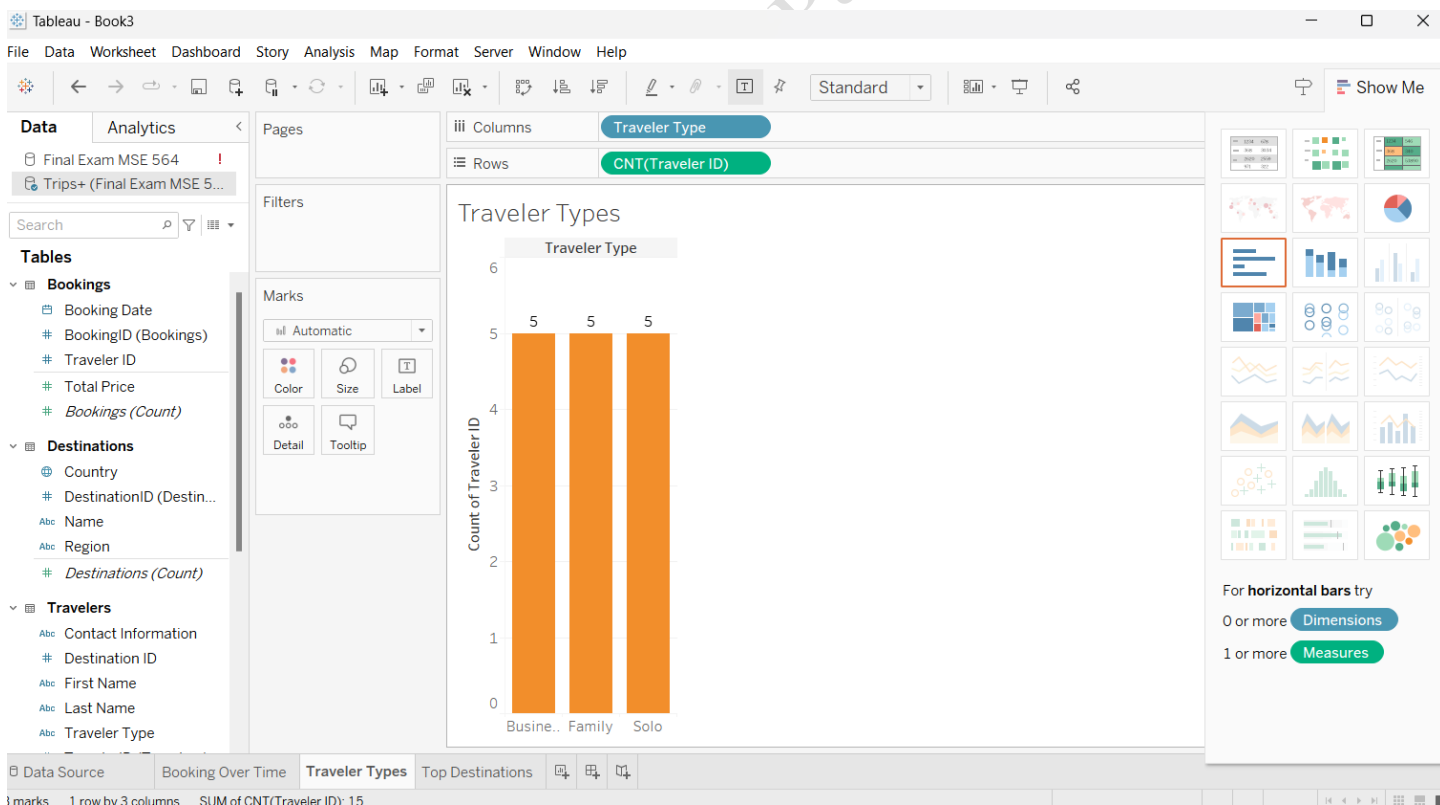
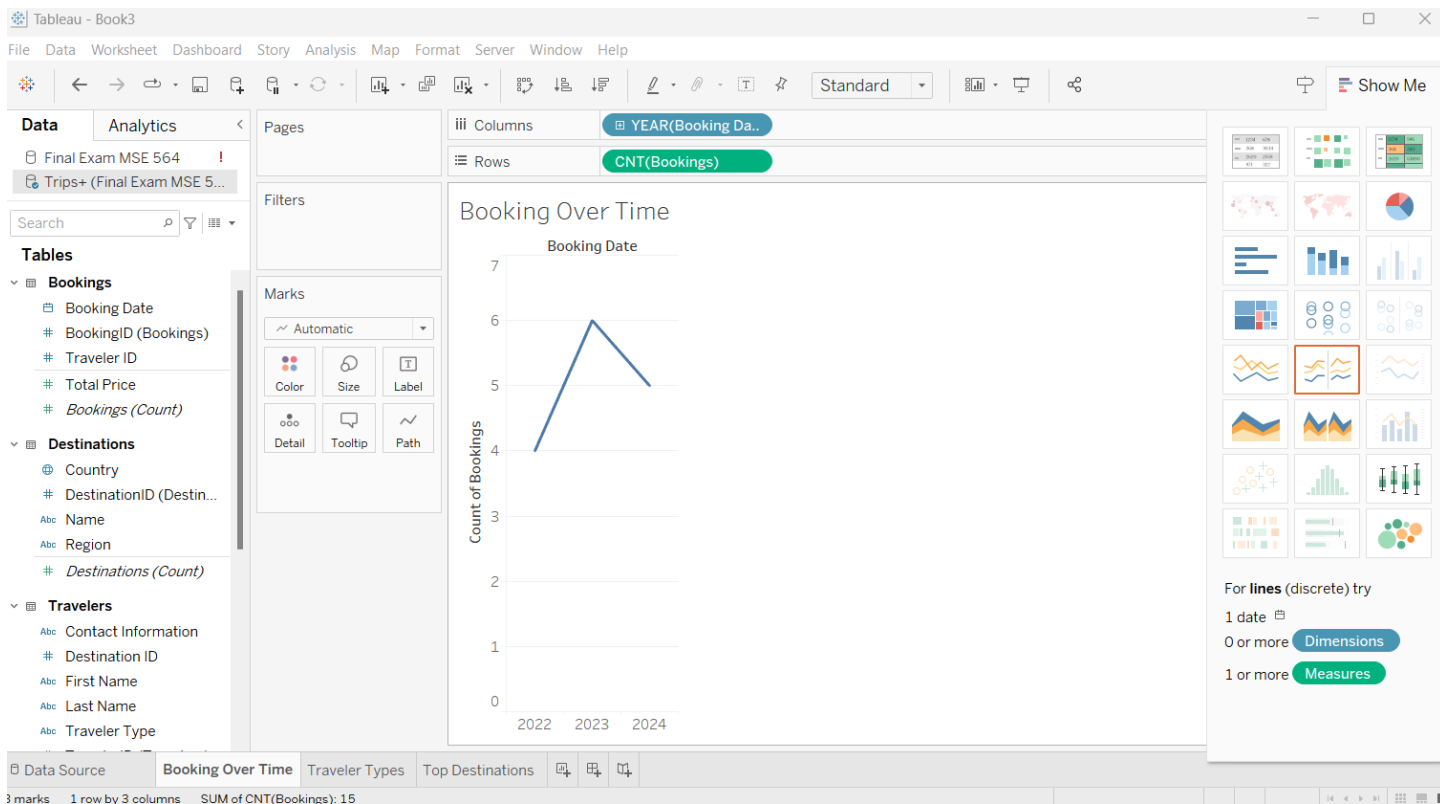
Trips — Bookings — Travelers — Destinations

Trips 4 fields 15 rows 15 rows

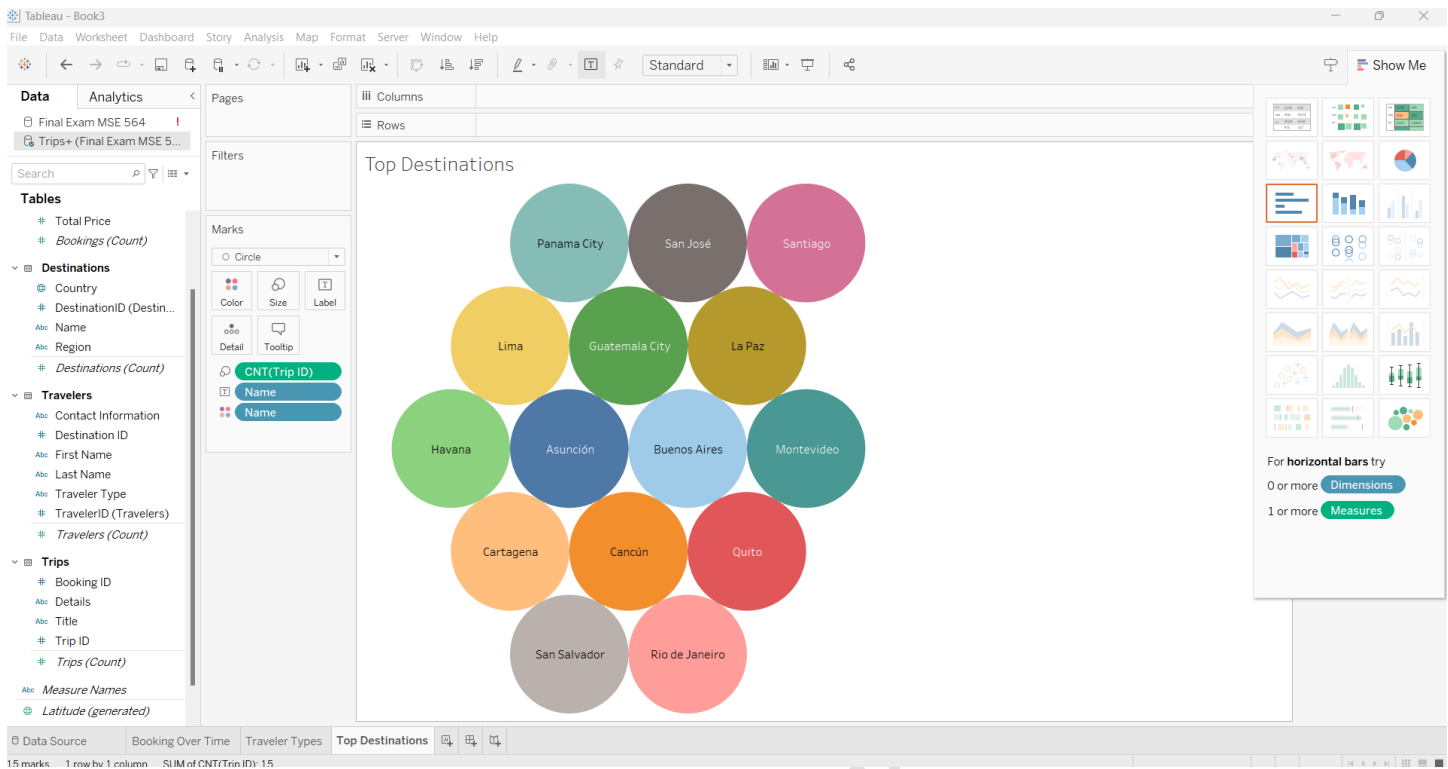
#	#	Abc	Abc
Trips	Trips	Trips	Trips
Trip ID	Booking ID	Title	Details
1	1	Cancun Beach Trip	Enjoy the beautiful beaches ...
2	2	Rio Carnival Experience	Experience the vibrant Rio C...
3	3	Buenos Aires Tango Tour	Dive into the culture of Buen...
4	4	Santiago Adventure	Explore the Andes and Santia...
5	5	Lima Culinary Journey	Discover Lima's rich culinary ...
6	6	Cartagena History Walk	Walk through Cartagena's his...
7	7	Quito Cloud Forest Escape	Enjoy the natural beauty of Q...
8	8	Montevideo Wine Tour	Visit Montevideo's vineyards ...

Data Source Booking Over Time Traveler Types Top Destinations

##### Step 2: Creating Sheets: Booking Over Time, Traveler Types and Top Destinations







## Last Step:

- Creation of the Dashboard and practical explanation:
- Practical Details of the Dashboard Components

## Bookings Over Time:

Purpose: To track the trend of bookings over different months and years.

Practical Use: Helps to identify peak booking periods, allowing for better resource allocation and marketing efforts.

## Traveler Types:

Purpose: To understand the distribution of different types of travelers.

Practical Use: Provides insights into customer demographics, which can inform targeted marketing strategies and service offerings.

## Top Destinations:

Purpose: To highlight the most popular travel destinations.

Practical Use: Allows travel agencies to focus on high-demand destinations and plan promotions or special packages accordingly.

For the Dashboard:

This comprehensive Tableau dashboard provides valuable insights into bookings, traveler demographics, popular destinations, and trip details using circular graphs. This dashboard will be useful for making data-driven decisions and improving travel-related services.

Project Completed by Jean Paul Collazo Argueta



## Dashboard

Layout &lt;

Default

Phone

Device Preview

## Size

Desktop Browser (1000 x 80... ▾)

## Sheets

Booking Over ...

Traveler Types

Top Destinations

Trip Details

## Objects

Horizontal Container

Vertical Container

Text

Extension

Data Story

Image

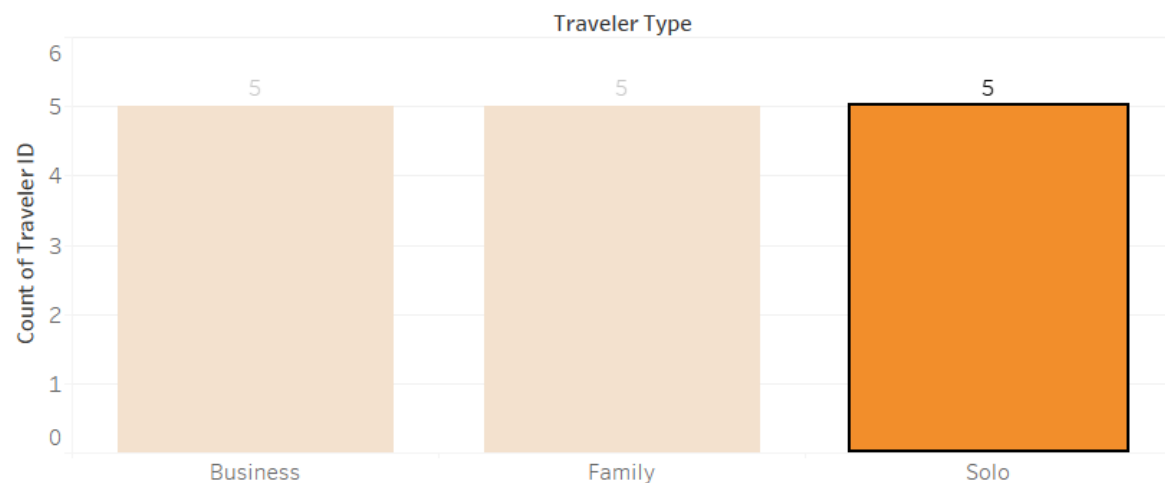
Blank

Tiled

Floating

☐ Show dashboard title

## Traveler Types



## Name

- Asunción
- Buenos Aires
- Cancún
- Cartagena
- Guatemala City
- Havana
- La Paz
- Lima
- Montevideo
- Panama City
- Quito
- Rio de Janeiro
- San José
- San Salvador
- Santiago

## Top Destinations



## Booking Over Time

