Airbnb database development/ reflection phase
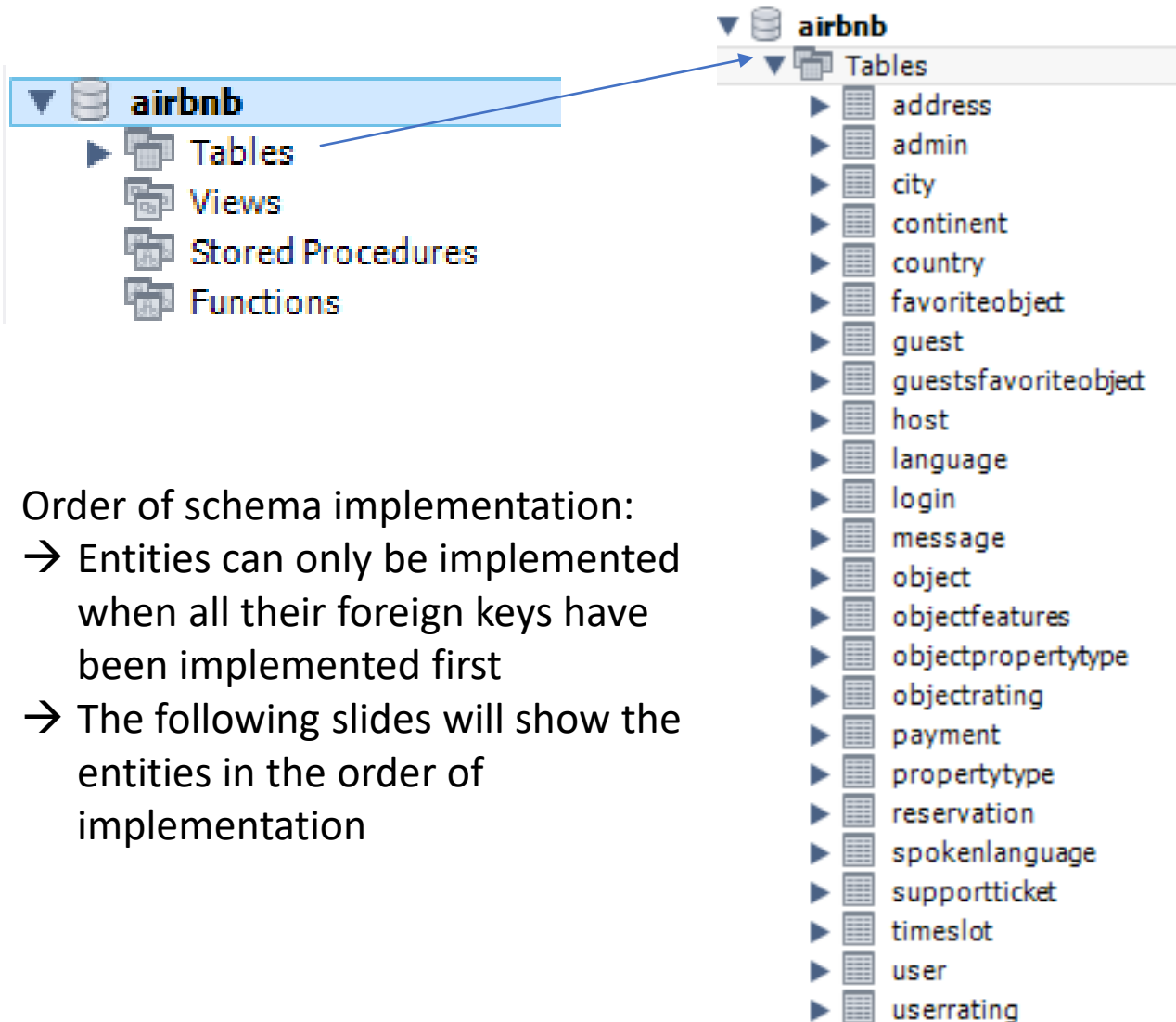
Project: Build a Data Mart in SQL
(DLBDSPBDM01)

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Schema and Entities

airbnb
- **Tables**
- Views
- Stored Procedures
- Functions

airbnb
- Tables
  - address
  - admin
  - city
  - continent
  - country
  - favoriteobject
  - guest
  - guestsfavoriteobject
  - host
  - language
  - login
  - message
  - object
  - objectfeatures
  - objectpropertytype
  - objectrating
  - payment
  - propertytype
  - reservation
  - spokenlanguage
  - supportticket
  - timeslot
  - user
  - userrating

Order of schema implementation:
→ Entities can only be implemented when all their foreign keys have been implemented first
→ The following slides will show the entities in the order of implementation

Entity	FK1	FK2	Order of implementation
Language			1
Continent			2
Country	Continent	Language	3
City	Country		4
Address			5
User	Address		6
Guest	User		7
Host	User		8
Login	User		9
Object	Address	Host	10
FavoriteObject	Object		11
ObjectFeatures	Object		12
PropertyType	Object		13
Reservation	Guest	Object	14
Payment	Reservation		15
Timeslot	Object		16
Message	User	User	17
ObjectRating	User	Object	18
UserRating	User	User	19
Admin			20
SupportTicket	Admin	User	21
Spokenlanguage	User	Language	22
GuestsFavouriteObject	Guest	FavoriteObject	23
ObjectPropertyType	Object	PropertyType	24

No Foreign Keys

Initial commands in Airbnb_schema.sql

```
DROP DATABASE IF EXISTS Airbnb;
```
- Deletes Airbnb schema if it already exists

```
CREATE DATABASE Airbnb;
```
- Creates the database Airbnb

```
USE Airbnb;
```
- Sets the default database to "Airbnb" for subsequent queries (also used in Airbnb_inputs.sql)

Commands present in many entities

`ID INT AUTO_INCREMENT,` → Automatically increments IDs,
so none of them have to be assigned manually in the inputs

`ON DELETE SET NULL`
`ON UPDATE CASCADE`

→ Used for foreign key constraints:
ensures that if a foreign key is deleted in the primary table,
the corresponding value in the entity is set to NULL, preventing data loss.

If the foreign key is updated in the primary table,
the change is automatically cascaded to the foreign key in the entity

1. Language

```
-- language
INSERT INTO language (LanguageName) VALUES ("English");
INSERT INTO language (LanguageName) VALUES ("Spanish");
INSERT INTO language (LanguageName) VALUES ("Mandarin");
INSERT INTO language (LanguageName) VALUES ("Italian");
INSERT INTO language (LanguageName) VALUES ("Portuguese");
INSERT INTO language (LanguageName) VALUES ("French");
INSERT INTO language (LanguageName) VALUES ("German");
INSERT INTO language (LanguageName) VALUES ("Hindi");
INSERT INTO language (LanguageName) VALUES ("Arabic");
INSERT INTO language (LanguageName) VALUES ("Russian");
INSERT INTO language (LanguageName) VALUES ("Japanese");
INSERT INTO language (LanguageName) VALUES ("Korean");
INSERT INTO language (LanguageName) VALUES ("Turkish");
INSERT INTO language (LanguageName) VALUES ("Polish");
INSERT INTO language (LanguageName) VALUES ("Ukrainian");
INSERT INTO language (LanguageName) VALUES ("Swedish");
INSERT INTO language (LanguageName) VALUES ("Romanian");
INSERT INTO language (LanguageName) VALUES ("Danish");
INSERT INTO language (LanguageName) VALUES ("Finnish");
INSERT INTO language (LanguageName) VALUES ("Afrikaans");
```

- **CREATE TABLE Language**
  (LanguageID INT AUTO_INCREMENT,
  LanguageName **VARCHAR(20),**
  PRIMARY KEY (LanguageID));

Collective Testcase on slide 8

2. Continent

CREATE TABLE Continent
(ContinentID INT AUTO_INCREMENT,
ContinentName VARCHAR(20),
PRIMARY KEY (ContinentID));

```
-- continent
INSERT INTO continent (ContinentName) VALUES ("Asia");
INSERT INTO continent (ContinentName) VALUES ("Africa");
INSERT INTO continent (ContinentName) VALUES ("North America");
INSERT INTO continent (ContinentName) VALUES ("South America");
INSERT INTO continent (ContinentName) VALUES ("Antarctica");
INSERT INTO continent (ContinentName) VALUES ("Europe");
INSERT INTO continent (ContinentName) VALUES ("Oceania");
```

```
1 •    SELECT * FROM Continent;  -- Testcase 1
2
3
```

Result Grid | Filter Rows: | Edit:

ContinentID	ContinentName
1	Asia
2	Africa
3	North America
4	South America
5	Antarctica
6	Europe
7	Oceania

Note that this entity only has 7 entries instead of 20.
This is because there are only 7 continents total.

Collective Testcase on slide 8

6

3. Country

```sql
CREATE TABLE Country
(CountryID INT AUTO_INCREMENT,
CountryName VARCHAR(50),
ContinentID INT,
LanguageID INT,
PRIMARY KEY (CountryID),
FOREIGN KEY (ContinentID)
    REFERENCES Continent(ContinentID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (LanguageID)
    REFERENCES Language(LanguageID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
-- country
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("United States", 3, 1);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("India", 1, 8);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("China", 1, 3);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Mexico", 4, 2);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Brazil", 4, 5);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Japan", 1, 11);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Germany", 6, 7);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("United Kingdom", 6, 1);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("France", 6, 6);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("South Africa", 2, 20);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Italy", 6, 4);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Colombia", 4, 2);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("South Korea", 1, 12);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Spain", 6, 2);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Argentina", 4, 2);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Poland", 6, 14);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Canada", 3, 1);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Ukraine", 6, 15);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Austria", 6, 7);
INSERT INTO country (CountryName, ContinentID, LanguageID) VALUES ("Sweden", 6, 16);
```

Collective Testcase on slide 8

Testcase
Join Language – Continent – Country

```
3 ● SELECT Language.LanguageName, Country.CountryName, Continent.ContinentName -- Testcase 2
4    FROM Language
5    INNER JOIN Country ON Country.LanguageID = LAnguage.LanguageID
6    INNER JOIN Continent ON Continent.ContinentID = Country.ContinentID
7
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

LanguageName	CountryName	ContinentName
Hindi	India	Asia
Mandarin	China	Asia
Japanese	Japan	Asia
Korean	South Korea	Asia
Afrikaans	South Africa	Africa
English	United States	North America
English	Canada	North America
Spanish	Mexico	South America
Portuguese	Brazil	South America
Spanish	Colombia	South America
Spanish	Argentina	South America
German	Germany	Europe
English	United Kingdom	Europe
French	France	Europe
Italian	Italy	Europe
Spanish	Spain	Europe
Polish	Poland	Europe
Ukrainian	Ukraine	Europe
German	Austria	Europe
Swedish	Sweden	Europe

4. City

```sql
-- city
INSERT INTO city (CityName, CountryID) VALUES ("New York", 1);
INSERT INTO city (CityName, CountryID) VALUES ("Los Angeles", 1);
INSERT INTO city (CityName, CountryID) VALUES ("Chicago", 1);
INSERT INTO city (CityName, CountryID) VALUES ("Delhi", 2);
INSERT INTO city (CityName, CountryID) VALUES ("Mumbai", 2);
INSERT INTO city (CityName, CountryID) VALUES ("Shanghai", 3);
INSERT INTO city (CityName, CountryID) VALUES ("Beijing", 3);
INSERT INTO city (CityName, CountryID) VALUES ("Mexico CityID", 4);
INSERT INTO city (CityName, CountryID) VALUES ("Sao Paulo", 5);
INSERT INTO city (CityName, CountryID) VALUES ("Tokyo", 6);
INSERT INTO city (CityName, CountryID) VALUES ("Berlin", 7);
INSERT INTO city (CityName, CountryID) VALUES ("London", 8);
INSERT INTO city (CityName, CountryID) VALUES ("Paris", 9);
INSERT INTO city (CityName, CountryID) VALUES ("Cape Town", 10);
INSERT INTO city (CityName, CountryID) VALUES ("Rome", 11);
INSERT INTO city (CityName, CountryID) VALUES ("Bogota", 12);
INSERT INTO city (CityName, CountryID) VALUES ("Seoul", 13);
INSERT INTO city (CityName, CountryID) VALUES ("Barcelona", 14);
INSERT INTO city (CityName, CountryID) VALUES ("Buenos Aires", 15);
INSERT INTO city (CityName, CountryID) VALUES ("Warsaw", 16);
INSERT INTO city (CityName, CountryID) VALUES ("Toronto", 17);
INSERT INTO city (CityName, CountryID) VALUES ("Kyiv", 18);
INSERT INTO city (CityName, CountryID) VALUES ("Vienna", 19);
INSERT INTO city (CityName, CountryID) VALUES ("Stockholm", 20);
```

```sql
CREATE TABLE City
(CityID INT AUTO_INCREMENT,
CityName VARCHAR(50),
CountryID INT,
PRIMARY KEY (CityID),
FOREIGN KEY (CountryID)
    REFERENCES Country(CountryID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
8   SELECT * FROM City; -- Testcase 3
9
```

Result Grid | Filter Rows: | Edi

CityID	CityName	CountryID
1	New York	1
2	Los Angeles	1
3	Chicago	1
4	Delhi	2
5	Mumbai	2
6	Shanghai	3
7	Beijing	3
8	Mexico CityID	4
9	Sao Paulo	5
10	Tokyo	6
11	Berlin	7
12	London	8
13	Paris	9
14	Cape Town	10
15	Rome	11
16	Bogota	12
17	Seoul	13
18	Barcelona	14
19	Buenos Aires	15
20	Warsaw	16
21	Toronto	17
22	Kyiv	18
23	Vienna	19
24	Stockholm	20

Additional, collective Testcase on slide 13

5. Address

```sql
CREATE TABLE Address
(AddressID INT AUTO_INCREMENT,
StreetName VARCHAR(100),
StreetNumber VARCHAR(10),
PostalCode VARCHAR(20),
CityID INT,
PRIMARY KEY (AddressID),
FOREIGN KEY (CityID)
    REFERENCES City(CityID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
-- address
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Broadway Avenue", "456", "90003", 2);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Lane D", "21", "110023", 4);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Marine Drive", "13", "400020", 5);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Nanjing Road", "123", "200001", 6);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Wangfujing Street", "456", "100006", 7);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Plaza de la Constitución", "345", "06000", 8);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Paseo de la Reforma", "987", "06500", 8);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Table Mountain Road", "156", "8001", 14);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Piazze del Colosseo", "637", "00184", 15);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Via Aurelia", "47", "00165", 15);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Gamla Stan", "439", "111 30", 24);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Drottninggatan", "752", "111 36", 24);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Rue de la Paix", "654", "75001", 13);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Champs-Élysées", "987", "75008", 13);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Alexanderplatz", "39", "10178", 11);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Unter den Linden", "13", "10117", 11);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("La Rambla", "52", "08002", 18);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Main Street", "123", "11354", 1);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Passeig de Gràcia", "63", "08008", 18);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Linzer Straße", "23", "1140", 23);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Garden Street", "789", "60601", 3);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Nanjing Road", "99", "200001", 6);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Piazza Navona", "147", "00186", 15);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Via del Corso", "258", "00187", 15);
INSERT INTO address (StreetName, StreetNumber, PostalCode, CityID) VALUES ("Nelson Street", "78", "ON M5V 2E2", 21);
```

Collective Testcase on slide 13

6. User - 1

```sql
CREATE TABLE User
(UserID INT AUTO_INCREMENT,
FirstName VARCHAR(100),
LastName VARCHAR(100),
AddressID INT,
EMail VARCHAR(100),
Type VARCHAR(5),
PhoneNumber VARCHAR(100),
PRIMARY KEY (UserID),
FOREIGN KEY (AddressID)
    REFERENCES Address(AddressID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
CONSTRAINT UserType CHECK (Type = "Guest" OR Type = "Host" OR Type = "Both"));
```

Only allows the values „Guest", „Host" or „Both" as values for Type.
„Both" indicates, that the user is guest and host at the same time.

6. User - 2

```sql
-- user
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Marcus", "Shepard", 1, "marcusshepard@gmail.com", "Guest", "603729405");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Jane", "Smith", 2, "janesmith@hotmail.com", "Host", "53890678");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Michael", "Johnson", 3, "michaeljohnson@yahoo.com", "Guest", "57501234567");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Emily", "Shepard", 1, "emilyshepard@gmail.com", "Guest", "6774551234");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("David", "Davis", 5, "daviddavis@hotmail.com", "Host", "1909887807");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Maria", "Martinez", 6, "mariamartinez@gmail.com", "Both", "43452560967");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Hans", "Peters", 7, "hanspeters@yahoo.com", "Host", "6908534245");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Sara", "Garcia", 8, "saragarcia@gmail.com", "Guest", "9735601258");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Alex", "Lee", 9, "alexlee@hotmail.com", "Both", "87860456877");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Sophia", "Anderson", 10, "sophiaanderson@gmail.com", "Guest", "78645687");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Robert", "Wang", 11, "robertwang@yahoo.com", "Host", "786045678");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Luis", "Gomez", 12, "luisgomez@gmail.com", "Both", "456875456");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Anna", "Sato", 13, "annasato@hotmail.com", "Guest", "4567864578");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Thomas", "Schmidt", 14, "thomasschmidt@gmail.com", "Host", "456123874");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Olivia", "Cohen", 15, "oliviacohen@yahoo.com", "Guest", "978364531");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Daniel", "Lopez", 16, "daniellopez@gmail.com", "Both", "78640544312");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Ella", "Kim", 17, "ellakim@hotmail.com", "Guest", "768945312");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("William", "Jones", 18, "williamjones@gmail.com", "Host", "698754531");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Mia", "Perez", 19, "miaperez@yahoo.com", "Both", "3652225536");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("James", "Yamamoto", 20, "jamesyamamoto@gmail.com", "Guest", "9675834210");

INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Isabella", "Rousseau", 21, "isabellarousseau@hotmail.com", "Host", "0453678614");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Alex", "Miller", 19, "alex.miller@gmail.com", "Guest", "1234567890");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Emma", "Wilson", 4, "emma.wilson@yahoo.com", "Host", "9876543210");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Oliver", "Taylor", 7, "oliver.taylor@hotmail.com", "Guest", "5551234567");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Sophia", "Martin", 15, "sophia.martin@gmail.com", "Guest", "45358743453");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Noah", "Anderson", 5, "noah.anderson@yahoo.com", "Host", "79865312354");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Mia", "Thomas", 6, "mia.thomas@gmail.com", "Both", "4532120153");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("William", "Harris", 11, "william.harris@hotmail.com", "Host", "542300,");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Ava", "Jackson", 14, "ava.jackson@gmail.com", "Guest", "1153434531");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Amelia", "Martinez", 24, "amelia.martinez@hotmail.com", "Guest", "31453834");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Benjamin", "Davis", 16, "benjamin.davis@gmail.com", "Both", "45345367483");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Harper", "Lee", 19, "harper.lee@yahoo.com", "Guest", "4867583453");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Mason", "Smith", 17, "mason.smith@hotmail.com", "Host", "453458374");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Isabella", "Perez", 9, "isabella.perez@gmail.com", "Both", "78645315");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Alexander", "Yamamoto", 20, "alexander.yamamoto@yahoo.com", "Guest", "48341253748");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Ella", "Rousseau", 8, "ella.rousseau@gmail.com", "Host", "794531523");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Daniel", "Gonzalez", 12, "daniel.gonzalez@hotmail.com", "Guest", "4864523486");
INSERT INTO user (FirstName, LastName, AddressID, EMail, Type, PhoneNumber)
VALUES ("Avery", "Schneider", 13, "avery.schneider@gmail.com", "Guest", "4836453458");
```

Collective Testcase on slide 13
Collective Testcase on slide 22

Testcase
Join City – Address – User

```sql
10 ●    SELECT Address.StreetName, City.CityName, User.LastName FROM Address -- Testcase 4
11      INNER JOIN City ON City.CityID = Address.CityID
12      INNER JOIN User ON User.AddressID = Address.AddressID
13      WHERE CityName LIKE "B%" OR CityName LIKE "S%";
14
15
16
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

StreetName	CityName	LastName
Nanjing Road	Shanghai	Wilson
Wangfujing Street	Beijing	Davis
Wangfujing Street	Beijing	Anderson
Alexanderplatz	Berlin	Cohen
Alexanderplatz	Berlin	Martin
Unter den Linden	Berlin	Lopez
Unter den Linden	Berlin	Davis
La Rambla	Barcelona	Kim
La Rambla	Barcelona	Smith
Passeig de Gràcia	Barcelona	Perez
Passeig de Gràcia	Barcelona	Miller
Passeig de Gràcia	Barcelona	Lee
Gamla Stan	Stockholm	Wang
Gamla Stan	Stockholm	Harris
Drottninggatan	Stockholm	Gomez
Drottninggatan	Stockholm	Gonzalez

7. Guest

```
15 •    SELECT * FROM Guest -- Testcase 5
16
17
18
```

- **CREATE TABLE** Guest
- **(GuestID INT AUTO_INCREMENT,**
  UserID INT,
  PRIMARY KEY (GuestID),
  FOREIGN KEY (UserID)
      REFERENCES User(UserID)
      ON DELETE SET NULL
      ON UPDATE CASCADE);

```
-- guest
```
- **INSERT INTO** guest(UserID)
  SELECT UserID **FROM** user **WHERE** Type = "Guest" **OR** Type = "Both";

Result Grid | Filter Rows: | Ec

GuestID	UserID
1	1
2	3
3	4
4	6
5	8
6	9
7	10
8	12
9	13
10	15
11	16
12	17
13	19
14	20
15	22
16	24
17	25
18	27
19	29
20	30
21	31
22	32
23	34
24	35
25	37
26	38

8. Host

- **CREATE TABLE Host**
  (HostID INT AUTO_INCREMENT,
  UserID INT,
  PRIMARY KEY (HostID),
  FOREIGN KEY (UserID)
    REFERENCES User(UserID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);

-- host
- **INSERT INTO host(UserID)**
  SELECT UserID FROM user WHERE Type = "Host" OR Type = "Both";

```
17 •    SELECT * FROM Host; -- Testcase 6
18
19
```

Result Grid | Filter Rows:

HostID	UserID
1	2
2	5
3	6
4	7
5	9
6	11
7	12
8	14
9	16
10	18
11	19
12	21
13	23
14	26
15	27
16	28
17	31
18	33
19	34
20	36

Additional collective Testcase on slide 22

9. Login - 1

```sql
-- login
-- neglecting best practice by storing password data inside a database
INSERT INTO login (UserID, Username, Password) VALUES (1, "marcusshepard90", "P@ssw0rd!1");
INSERT INTO login (UserID, Username, Password) VALUES (2, "hostjanesmith", "S3cur3Host!");
INSERT INTO login (UserID, Username, Password) VALUES (3, "mjohnson2405", "P@ssw0rd12!");
INSERT INTO login (UserID, Username, Password) VALUES (4, "emily.03", "Str0ngPassword");
INSERT INTO login (UserID, Username, Password) VALUES (5, "daviddavis", "MyP@$$w0rd!");
INSERT INTO login (UserID, Username, Password) VALUES (6, "maria023", "Passw0rdGuestHost");
INSERT INTO login (UserID, Username, Password) VALUES (7, "haenschenklein", "Sup3rSecur3!");
INSERT INTO login (UserID, Username, Password) VALUES (8, "sara-guest", "P@ssw0rd456");
INSERT INTO login (UserID, Username, Password) VALUES (9, "alexIsHere", "MyP@ssw0rd123");
INSERT INTO login (UserID, Username, Password) VALUES (10, "sophia03", "Str0ngP@ssw0rd");
INSERT INTO login (UserID, Username, Password) VALUES (11, "roberto23", "S3cur3H0st!23");
INSERT INTO login (UserID, Username, Password) VALUES (12, "luis10", "P@ssw0rdBoth");
INSERT INTO login (UserID, Username, Password) VALUES (13, "annasato456", "MyP@ssw0rd!456");
INSERT INTO login (UserID, Username, Password) VALUES (14, "thomaschmidt", "SuperStr0ng!1");
INSERT INTO login (UserID, Username, Password) VALUES (15, "oliviacohen", "P@ssw0rd789!");
INSERT INTO login (UserID, Username, Password) VALUES (16, "daniellopez", "MyP@$$w0rd!89");
INSERT INTO login (UserID, Username, Password) VALUES (17, "ellakim2401", "Str0ngP@ssword");
INSERT INTO login (UserID, Username, Password) VALUES (18, "william-jones", "S3cur3H0st!345");
INSERT INTO login (UserID, Username, Password) VALUES (19, "miaperez22", "P@ssw0rdBoth!9");
INSERT INTO login (UserID, Username, Password) VALUES (20, "jamesy", "MyP@ssw0rd!121");
INSERT INTO login (UserID, Username, Password) VALUES (21, "isabellarou", "Str0ngP@ssw0rd12");
INSERT INTO login (UserID, Username, Password) VALUES (22, "alex.miller", "S3cur3H0st!456");
INSERT INTO login (UserID, Username, Password) VALUES (23, "emma.wilson", "P@ssw0rd789!");
INSERT INTO login (UserID, Username, Password) VALUES (24, "oliver.taylor", "MyP@ssw0rd!122");
INSERT INTO login (UserID, Username, Password) VALUES (25, "sophia.m", "Str0ngP@ssword45");
INSERT INTO login (UserID, Username, Password) VALUES (26, "noah.anderson", "S3cur3H0st!567");
INSERT INTO login (UserID, Username, Password) VALUES (27, "mia.thomas", "P@ssw0rdBoth!45");
INSERT INTO login (UserID, Username, Password) VALUES (28, "willIam.harris", "MyP@ssw0rd!123");
INSERT INTO login (UserID, Username, Password) VALUES (29, "ava.jackson", "Str0ngP@ssw0rd12");
INSERT INTO login (UserID, Username, Password) VALUES (30, "amel_i_am", "S3cur3H0st!678");
INSERT INTO login (UserID, Username, Password) VALUES (31, "benjamin.davis", "P@ssw0rdBoth!56");
INSERT INTO login (UserID, Username, Password) VALUES (32, "harplee", "MyP@ssw0rd!134");
INSERT INTO login (UserID, Username, Password) VALUES (33, "mason.smith", "Str0ngP@ssw0rd56");
INSERT INTO login (UserID, Username, Password) VALUES (34, "isabella.perez", "S3cur3H0st!789");
INSERT INTO login (UserID, Username, Password) VALUES (35, "alexander.y", "MyP@ssw0rd!145");
INSERT INTO login (UserID, Username, Password) VALUES (36, "ella.rou", "Str0ngP@ssw0rd123");
INSERT INTO login (UserID, Username, Password) VALUES (37, "daniel.gonzalez", "S3cur3H0st!901");
```

```sql
CREATE TABLE Login
(LoginID INT AUTO_INCREMENT,
UserID INT,
Username VARCHAR(20),
Password VARCHAR(20),
PRIMARY KEY (LoginID),
FOREIGN KEY (UserID)
    REFERENCES User(UserID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
CONSTRAINT CheckPasswordLength CHECK (CHAR_LENGTH(Password) >= 8)); -- Only passwords with at least 8 characters allowed
```

Storing passwords as clear text in a database is hardly a good idea for the sake of data security, but an easy solution to implement.

9. Login - 2

```sql
19   SELECT * FROM Login -- Testcase 7
20   INNER JOIN User ON User.UserID = Login.UserID
21   WHERE User.UserID <= 20;
22
23
24
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

LoginID	UserID	Username	Password	UserID	FirstName	LastName	AddressID	EMail	Type	PhoneNumber
1	1	marcusshepard90	P@ssw0rd!1	1	Marcus	Shepard	1	marcusshepard@gmail.com	Guest	603729405
2	2	hostjanesmith	S3cur3Host!	2	Jane	Smith	2	janesmith@hotmail.com	Host	53890678
3	3	mjohnson2405	P@ssw0rd12!	3	Michael	Johnson	3	michaeljohnson@yahoo.com	Guest	57501234567
4	4	emily.03	Str0ngPassword	4	Emily	Shepard	1	emilyshepard@gmail.com	Guest	6774551234
5	5	daviddavis	MyP@$$w0rd!	5	David	Davis	5	daviddavis@hotmail.com	Host	1909887807
6	6	maria023	Passw0rdGuestHost	6	Maria	Martinez	6	mariamartinez@gmail.com	Both	43452560967
7	7	haenschenklein	Sup3rSecur3!	7	Hans	Peters	7	hanspeters@yahoo.com	Host	6908534245
8	8	sara-guest	P@ssw0rd456	8	Sara	Garcia	8	saragarcia@gmail.com	Guest	9735601258
9	9	alexIsHere	MyP@ssw0rd123	9	Alex	Lee	9	alexlee@hotmail.com	Both	87860456877
10	10	sophia03	Str0ngP@ssw0rd	10	Sophia	Anderson	10	sophiaanderson@gmail.com	Guest	78645687
11	11	roberto23	S3cur3H0st!23	11	Robert	Wang	11	robertwang@yahoo.com	Host	786045678
12	12	luis10	P@ssw0rdBoth	12	Luis	Gomez	12	luisgomez@gmail.com	Both	456875456
13	13	annasato456	MyP@ssw0rd!456	13	Anna	Sato	13	annasato@hotmail.com	Guest	4567864578
14	14	thomaschmidt	SuperStr0ng!1	14	Thomas	Schmidt	14	thomasschmidt@gmail.com	Host	456123874
15	15	oliviacohen	P@ssw0rd789!	15	Olivia	Cohen	15	oliviacohen@yahoo.com	Guest	978364531
16	16	daniellopez	MyP@$$w0rd!89	16	Daniel	Lopez	16	daniellopez@gmail.com	Both	78640544312
17	17	ellakim2401	Str0ngP@ssword	17	Ella	Kim	17	ellakim@hotmail.com	Guest	768945312
18	18	william-jones	S3cur3H0st!345	18	William	Jones	18	williamjones@gmail.com	Host	698754531
19	19	miaperez22	P@ssw0rdBoth!9	19	Mia	Perez	19	miaperez@yahoo.com	Both	3652225536
20	20	jamesy	MyP@ssw0rd!121	20	James	Yamamoto	20	jamesyamamoto@gmail.com	Guest	9675834210

Illustration of why storage of unhashed and unsalted password data is highly problematic

Additional collective Testcase on slide 22

10. Object

```
CREATE TABLE Object
(ObjectID INT AUTO_INCREMENT,
AddressID INT,
HostID INT,
PRIMARY KEY (ObjectID),
FOREIGN KEY (AddressID)
    REFERENCES Address(AddressID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (HostID)
    REFERENCES Host(HostID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```
-- object
INSERT INTO object (AddressID, HostID) VALUES (1, 1);
INSERT INTO object (AddressID, HostID) VALUES (1, 1);
INSERT INTO object (AddressID, HostID) VALUES (5, 2);
INSERT INTO object (AddressID, HostID) VALUES (2, 3);
INSERT INTO object (AddressID, HostID) VALUES (4, 4);
INSERT INTO object (AddressID, HostID) VALUES (4, 4);
INSERT INTO object (AddressID, HostID) VALUES (4, 4);
INSERT INTO object (AddressID, HostID) VALUES (7, 18);
INSERT INTO object (AddressID, HostID) VALUES (9, 19);
INSERT INTO object (AddressID, HostID) VALUES (9, 19);
INSERT INTO object (AddressID, HostID) VALUES (10, 9);
INSERT INTO object (AddressID, HostID) VALUES (11, 10);
INSERT INTO object (AddressID, HostID) VALUES (12, 20);
INSERT INTO object (AddressID, HostID) VALUES (13, 8);
INSERT INTO object (AddressID, HostID) VALUES (13, 8);
INSERT INTO object (AddressID, HostID) VALUES (15, 7);
INSERT INTO object (AddressID, HostID) VALUES (16, 17);
INSERT INTO object (AddressID, HostID) VALUES (18, 11);
INSERT INTO object (AddressID, HostID) VALUES (20, 13);
INSERT INTO object (AddressID, HostID) VALUES (21, 6);
INSERT INTO object (AddressID, HostID) VALUES (21, 6);
INSERT INTO object (AddressID, HostID) VALUES (22, 15);
INSERT INTO object (AddressID, HostID) VALUES (22, 15);
INSERT INTO object (AddressID, HostID) VALUES (25, 5);
```

Collective Testcase on slide 22

11. FavoriteObject

```
CREATE TABLE FavoriteObject
(FavoriteObjectID INT AUTO_INCREMENT,
ObjectID INT,
PRIMARY KEY (FavoriteObjectID),
FOREIGN KEY (ObjectID)
    REFERENCES Object(ObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```
-- favoriteObject
INSERT INTO favoriteobject (ObjectID) VALUES (1);
INSERT INTO favoriteobject (ObjectID) VALUES (2);
INSERT INTO favoriteobject (ObjectID) VALUES (24);
INSERT INTO favoriteobject (ObjectID) VALUES (4);
INSERT INTO favoriteobject (ObjectID) VALUES (5);
INSERT INTO favoriteobject (ObjectID) VALUES (6);
INSERT INTO favoriteobject (ObjectID) VALUES (7);
INSERT INTO favoriteobject (ObjectID) VALUES (8);
INSERT INTO favoriteobject (ObjectID) VALUES (9);
INSERT INTO favoriteobject (ObjectID) VALUES (10);
INSERT INTO favoriteobject (ObjectID) VALUES (11);
INSERT INTO favoriteobject (ObjectID) VALUES (12);
INSERT INTO favoriteobject (ObjectID) VALUES (13);
INSERT INTO favoriteobject (ObjectID) VALUES (14);
INSERT INTO favoriteobject (ObjectID) VALUES (15);
INSERT INTO favoriteobject (ObjectID) VALUES (17);
INSERT INTO favoriteobject (ObjectID) VALUES (18);
INSERT INTO favoriteobject (ObjectID) VALUES (19);
INSERT INTO favoriteobject (ObjectID) VALUES (20);
INSERT INTO favoriteobject (ObjectID) VALUES (21);
```

```
23 •    SELECT * FROM FavoriteObject; -- Testcase 8
```

Result Grid | Filter Rows: | Edit:

FavoriteObjectID	ObjectID
1	1
2	2
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	17
17	18
18	19
19	20
20	21
3	24

Implemented with 2 tables (+ GuestsFavoriteObject) for scalability and to decrease redundancy.
Several guests can have the same favorite object, and one guest can have several favorite objects.

12. ObjectFeatures - 1

```sql
CREATE TABLE ObjectFeatures
(ObjectFeatureID INT AUTO_INCREMENT,
PetsAllowed BOOLEAN,
BreakfastIncluded BOOLEAN,
Wifi BOOLEAN,
PricePerNight FLOAT(6, 2),
MaxGuests INT,
Miscellaneous VARCHAR(500),
ObjectID INT,
PRIMARY KEY (ObjectFeatureID),
FOREIGN KEY (ObjectID)
    REFERENCES Object(ObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

Every object from the object table is assigned to one object feature record

12. ObjectFeatures - 2

```
-- objectFeatures
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 100.00, 2, "Rooftop garden", 1);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 170.00, 3, "Rooftop garden", 2);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 1, 1, 100.00, 2, NULL, 3);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 100.00, 2, "Kitchen, plus super good street food in case you do not wish to cook yourself.", 4);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 60.00, 2, "Underground Car Park", 5);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 90.00, 3, "Underground Car Park", 6);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 90.00, 3, "Underground Car Park", 7);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 0, 90.00, 4, NULL, 8);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 170.00, 2, "Amazing view of the Colloseum!", 9);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 230.00, 3, "Amazing view of the Colloseum!", 10);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 100.00, 2, NULL, 11);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 110.00, 2, NULL, 12);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 160.00, 3, NULL, 13);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 180.00, 2, "Super large breakfast buffet, bottle of exquisite french wine on the first day", 14);

INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 180.00, 2, "Super large breakfast buffet, bottle of exquisite french wine on the first day", 15);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 0, 130.00, 2, "NEIN, wir haben KEINE Parkplätze für Sie zur Verfügung. Bitte hören Sie auf danach zu fragen!!! NO PARKING HERE!", 16);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 170.00, 4, NULL, 17);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 1, 1, 250.00, 2, "The opportunity to temporarily live in New York. What else could you possibly want?", 18);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 150.00, 2, "Feinste Wiener Melange zum Frühstück!", 19);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 170.00, 2, "Kitchen", 20);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (1, 0, 1, 170.00, 2, "Kitchen", 21);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 60.00, 2, "Underground Car Park", 22);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 1, 1, 60.00, 2, "Underground Car Park", 23);
INSERT INTO objectfeatures (PetsAllowed, BreakfastIncluded, Wifi, PricePerNight, MaxGuests, Miscellaneous, ObjectID)
VALUES (0, 0, 1, 240.00, 3, "Large Pool, Kitchen", 24);
```

Collective Testcase on slide 22

Testcase
Join User – Host – Login – Object – ObjectFeatures

```sql
25  ●  SELECT User.LastName, Host.HostID, Login.Username, Object.ObjectID, ObjectFeatures.Miscellaneous FROM User -- Testcase 9
26     INNER JOIN Host ON Host.UserID = User.UserID
27     INNER JOIN Login ON Login.UserID = User.UserID
28     INNER JOIN Object ON Object.HostID = Host.HostID
29     INNER JOIN ObjectFeatures ON ObjectFeatures.ObjectID = Object.ObjectID;
30
31
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

LastName	HostID	Username	ObjectID	Miscellaneous
Smith	1	hostjanesmith	1	Rooftop garden
Smith	1	hostjanesmith	2	Rooftop garden
Davis	2	daviddavis	3	NULL
Martinez	3	maria023	4	Kitchen, plus super good street food in case you do not wish to cook yourself.
Peters	4	haenschenklein	5	Underground Car Park
Peters	4	haenschenklein	6	Underground Car Park
Peters	4	haenschenklein	7	Underground Car Park
Lee	5	alexIsHere	24	Large Pool, Kitchen
Wang	6	roberto23	20	Kitchen
Wang	6	roberto23	21	Kitchen
Gomez	7	luis10	16	NEIN, wir haben KEINE Parkplätze für Sie zur Verfügung. Bitte hören Sie auf danach zu fragen!!! NO PARKING HERE!
Schmidt	8	thomaschmidt	14	Super large breakfast buffet, bottle of exquisite french wine on the first day
Schmidt	8	thomaschmidt	15	Super large breakfast buffet, bottle of exquisite french wine on the first day
Lopez	9	daniellopez	11	NULL
Jones	10	william-jones	12	NULL
Perez	11	miaperez22	18	The opportunity to temporarily live in New York. What else could you possibly want?
Wilson	13	emma.wilson	19	Feinste Wiener Melange zum Frühstück!
Thomas	15	mia.thomas	22	Underground Car Park
Thomas	15	mia.thomas	23	Underground Car Park
Davis	17	benjamin.davis	17	NULL
Smith	18	mason.smith	8	NULL
Perez	19	isabella.perez	9	Amazing view of the Colloseum!
Perez	19	isabella.perez	10	Amazing view of the Colloseum!
Rousseau	20	ella.rou	13	NULL

13. PropertyType

```
CREATE TABLE PropertyType
(PropertyTypeID INT AUTO_INCREMENT,
Type VARCHAR(50),
PRIMARY KEY (PropertyTypeID));
```

```
-- propertyType
INSERT INTO propertytype (Type) VALUES ("Apartment");
INSERT INTO propertytype (Type) VALUES ("House");
INSERT INTO propertytype (Type) VALUES ("Villa");
INSERT INTO propertytype (Type) VALUES ("Cabin");
INSERT INTO propertytype (Type) VALUES ("Chalet");
INSERT INTO propertytype (Type) VALUES ("Condo");
INSERT INTO propertytype (Type) VALUES ("Townhouse");
INSERT INTO propertytype (Type) VALUES ("Bungalow");
INSERT INTO propertytype (Type) VALUES ("Farmhouse");
INSERT INTO propertytype (Type) VALUES ("Mansion");
INSERT INTO propertytype (Type) VALUES ("Motel");
INSERT INTO propertytype (Type) VALUES ("Hostel");
INSERT INTO propertytype (Type) VALUES ("Trailor");
INSERT INTO propertytype (Type) VALUES ("Hotel");
```

```
31 •     SELECT * FROM PropertyType; -- Testcase 10
```

Result Grid | Filter Rows: | Edit:

PropertyTypeID	Type
1	Apartment
2	House
3	Villa
4	Cabin
5	Chalet
6	Condo
7	Townhouse
8	Bungalow
9	Farmhouse
10	Mansion
11	Motel
12	Hostel
13	Trailer
14	Hotel

Property types are linked to objects via the relationship table „ObjectPropertyType"

14. Reservation - 1

```sql
CREATE TABLE Reservation
(ReservationID INT AUTO_INCREMENT,
Status VARCHAR(100),
GuestID INT,
StartDate DATE,
EndDate DATE,
ObjectID INT,
PRIMARY KEY (ReservationID),
FOREIGN KEY (GuestID)
    REFERENCES Guest(GuestID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (ObjectID)
    REFERENCES Object(ObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
CONSTRAINT StartBeforeEndReservation CHECK (StartDate <= EndDate),
CONSTRAINT ReservationStatus CHECK (Status = "Pending" OR Status = "Accepted" OR Status = "Declined" OR Status = "Withdrawn"));
```

14. Reservation - 2

```sql
-- reservation
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 4, "2023-06-16", "2023-06-18", 5);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 8, "2023-04-15", "2023-04-22", 10);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Pending", 12, "2023-08-05", "2023-08-12", 18);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 2, "2022-11-10", "2022-11-17", 6);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 16, "2023-02-20", "2023-02-27", 9);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Withdrawn", 5, "2023-05-01", "2023-05-04", 3);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Declined", 18, "2023-07-10", "2023-07-17", 21);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Pending", 1, "2023-10-15", "2023-10-22", 12);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 9, "2022-12-25", "2022-12-31", 4);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 7, "2023-03-05", "2023-03-12", 15);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 14, "2023-01-20", "2023-01-27", 20);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 3, "2022-09-01", "2022-09-08", 1);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Declined", 11, "2023-06-02", "2023-06-09", 11);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 6, "2022-10-10", "2022-10-17", 8);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Pending", 19, "2023-09-03", "2023-09-10", 16);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 10, "2023-05-15", "2023-05-22", 14);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Pending", 13, "2023-08-19", "2023-08-26", 23);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 17, "2023-03-25", "2023-03-31", 7);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Withdrawn", 4, "2023-07-05", "2023-07-12", 19);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 20, "2023-02-10", "2023-02-17", 24);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 15, "2022-12-01", "2022-12-08", 5);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 1, "2023-01-10", "2023-01-17", 2);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Declined", 13, "2023-06-25", "2023-06-28", 17);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 9, "2022-11-05", "2022-11-12", 3);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 6, "2023-02-05", "2023-02-12", 7);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 16, "2023-01-01", "2023-01-08", 21);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Withdrawn", 19, "2023-05-15", "2023-05-22", 11);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 10, "2023-04-01", "2023-04-08", 18);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 5, "2022-09-20", "2022-09-27", 12);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 14, "2023-03-10", "2023-03-17", 10);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 8, "2023-02-15", "2023-02-22", 24);

INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Declined", 4, "2023-07-20", "2023-07-27", 5);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 11, "2022-10-15", "2022-10-22", 9);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Pending", 7, "2023-09-01", "2023-09-08", 14);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 2, "2023-04-10", "2023-04-17", 20);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Pending", 15, "2023-08-15", "2023-08-22", 6);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 12, "2023-03-05", "2023-03-12", 23);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 18, "2022-12-20", "2022-12-27", 15);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Withdrawn", 3, "2023-05-05", "2023-05-12", 1);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 20, "2023-02-25", "2023-03-04", 8);
INSERT INTO reservation (Status, GuestID, StartDate, EndDate, ObjectID) VALUES ("Accepted", 17, "2023-01-15", "2023-01-22", 16);
```

Collective Testcase on slide 27

15. Payment

```sql
CREATE TABLE Payment
(PaymentID INT AUTO_INCREMENT,
Amount FLOAT(8, 2),
Datetime DATETIME,
ReservationID INT,
PRIMARY KEY (PaymentID),
FOREIGN KEY (ReservationID)
    REFERENCES Reservation(ReservationID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
-- payment
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (120, "2023-06-16 12:25:00", 1);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1610, "2023-04-16 05:30:00", 2);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (630, "2022-11-11 11:23:00", 4);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1190, "2023-02-21 09:30:00", 5);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (600, "2022-12-26 15:07:00", 9);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1260, "2023-03-06 17:30:00", 10);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1190, "2023-01-21 02:04:00", 11);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (700, "2022-09-02 17:03:00", 12);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (630, "2022-10-11 19:12:00", 14);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1260, "2023-05-16 21:32:00", 16);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (540, "2023-03-26 02:36:00", 18);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1680, "2023-02-11 01:21:00", 20);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (420, "2022-12-02 12:44:00", 21);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1190, "2023-01-11 07:12:00", 22);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (700, "2022-11-06 08:34:00", 24);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (630, "2023-02-06 13:25:00", 25);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1190, "2023-01-02 12:43:00", 26);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1750, "2023-04-02 07:34:00", 28);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (770, "2022-09-21 13:57:00", 29);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1610, "2023-03-11 09:20:00", 30);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1680, "2023-02-16 12:30:00", 31);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1190, "2022-10-16 20:56:00", 33);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1190, "2023-04-11 22:21:00", 35);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (420, "2023-03-06 19:08:00", 37);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (1260, "2022-12-21 18:56:00", 38);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (630, "2023-03-26 12:36:00", 40);
INSERT INTO payment (Amount, Datetime, ReservationID) VALUES (910, "2023-01-16 17:55:00", 41);
```

Collective Testcase on slide 27

Testcase
Join Reservation – Payment


```
33 ●    SELECT Payment.PaymentID, Payment.Amount AS TotalAmountPaid, Payment.Datetime, -- Testcase 11
34       Reservation.ObjectID, Reservation.GuestID, Reservation.StartDate, Reservation.EndDate, Reservation.Status
35       FROM Payment
36       INNER JOIN Reservation ON Reservation.ReservationID = Payment.ReservationID
37       ORDER BY Reservation.GuestID;
38
39
```

PaymentID	TotalAmountPaid	Datetime	ObjectID	GuestID	StartDate	EndDate	Status
14	1190.00	2023-01-11 07:12:00	2	1	2023-01-10	2023-01-17	Accepted
3	630.00	2022-11-11 11:23:00	6	2	2022-11-10	2022-11-17	Accepted
23	1190.00	2023-04-11 22:21:00	20	2	2023-04-10	2023-04-17	Accepted
8	700.00	2022-09-02 17:03:00	1	3	2022-09-01	2022-09-08	Accepted
1	120.00	2023-06-16 12:25:00	5	4	2023-06-16	2023-06-18	Accepted
19	770.00	2022-09-21 13:57:00	12	5	2022-09-20	2022-09-27	Accepted
9	630.00	2022-10-11 19:12:00	8	6	2022-10-10	2022-10-17	Accepted
16	630.00	2023-02-06 13:25:00	7	6	2023-02-05	2023-02-12	Accepted
6	1260.00	2023-03-06 17:30:00	15	7	2023-03-05	2023-03-12	Accepted
2	1610.00	2023-04-16 05:30:00	10	8	2023-04-15	2023-04-22	Accepted
21	1680.00	2023-02-16 12:30:00	24	8	2023-02-15	2023-02-22	Accepted
5	600.00	2022-12-26 15:07:00	4	9	2022-12-25	2022-12-31	Accepted
15	700.00	2022-11-06 08:34:00	3	9	2022-11-05	2022-11-12	Accepted
10	1260.00	2023-05-16 21:32:00	14	10	2023-05-15	2023-05-22	Accepted
18	1750.00	2023-04-02 07:34:00	18	10	2023-04-01	2023-04-08	Accepted
22	1190.00	2022-10-16 20:56:00	9	11	2022-10-15	2022-10-22	Accepted
24	420.00	2023-03-06 19:08:00	23	12	2023-03-05	2023-03-12	Accepted
7	1190.00	2023-01-21 02:04:00	20	14	2023-01-20	2023-01-27	Accepted
20	1610.00	2023-03-11 09:20:00	10	14	2023-03-10	2023-03-17	Accepted
13	420.00	2022-12-02 12:44:00	5	15	2022-12-01	2022-12-08	Accepted
4	1190.00	2023-02-21 09:30:00	9	16	2023-02-20	2023-02-27	Accepted
17	1190.00	2023-01-02 12:43:00	21	16	2023-01-01	2023-01-08	Accepted
11	540.00	2023-03-26 02:36:00	7	17	2023-03-25	2023-03-31	Accepted
27	910.00	2023-01-16 17:55:00	16	17	2023-01-15	2023-01-22	Accepted
25	1260.00	2022-12-21 18:56:00	15	18	2022-12-20	2022-12-27	Accepted
12	1680.00	2023-02-11 01:21:00	24	20	2023-02-10	2023-02-17	Accepted
26	630.00	2023-03-26 12:36:00	8	20	2023-02-25	2023-03-04	Accepted

16. Timeslot - 1

```sql
CREATE TABLE Timeslot
(TimeslotID INT AUTO_INCREMENT,
ObjectID INT,
StartDate DATE,
EndDate DATE,
PRIMARY KEY (TimeslotID),
FOREIGN KEY (ObjectID)
    REFERENCES Object(ObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
CONSTRAINT StartBeforeEndTimeslot CHECK (StartDate <= EndDate));
```

16. Timeslot - 2

```sql
-- timeslot
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (1, "2023-07-10", "2023-07-16");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (1, "2023-07-17", "2023-07-23");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (1, "2023-07-24", "2023-07-30");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (2, "2023-07-10", "2023-07-16");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (2, "2023-07-17", "2023-07-23");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (3, "2023-07-07", "2023-07-09");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (3, "2023-07-14", "2023-07-16");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (4, "2023-07-07", "2023-07-09");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (4, "2023-07-14", "2023-07-16");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (5, "2023-07-07", "2023-07-09");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (6, "2023-07-31", "2023-08-06");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (6, "2023-08-07", "2023-08-13");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (7, "2023-07-31", "2023-08-06");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (7, "2023-08-07", "2023-08-13");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (8, "2023-07-14", "2023-07-16");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (8, "2023-07-21", "2023-07-23");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (9, "2023-09-01", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (9, "2023-10-15", "2023-10-21");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (10, "2023-08-14", "2023-08-20");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (10, "2023-08-21", "2023-08-27");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (11, "2023-08-14", "2023-08-20");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (11, "2023-08-21", "2023-08-27");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (12, "2023-08-18", "2023-08-20");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (12, "2023-08-25", "2023-08-27");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (13, "2023-08-18", "2023-08-20");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (13, "2023-08-25", "2023-08-27");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (14, "2023-09-01", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (14, "2023-09-15", "2023-09-22");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (15, "2023-09-01", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (15, "2023-09-15", "2023-09-22");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (16, "2023-08-28", "2023-09-03");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (16, "2023-09-04", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (17, "2023-08-28", "2023-09-03");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (17, "2023-09-04", "2023-09-10");
```

```sql
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (18, "2023-09-01", "2023-09-03");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (18, "2023-09-08", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (19, "2023-09-01", "2023-09-03");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (19, "2023-09-08", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (20, "2023-09-15", "2023-09-25");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (20, "2023-10-01", "2023-10-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (21, "2023-09-15", "2023-09-25");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (21, "2023-10-01", "2023-10-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (22, "2023-07-14", "2023-07-16");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (22, "2023-07-21", "2023-07-23");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (23, "2023-09-01", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (23, "2023-10-15", "2023-10-21");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (24, "2023-09-01", "2023-09-10");
INSERT INTO timeslot (ObjectID, StartDate, EndDate) VALUES (24, "2023-10-15", "2023-10-21");
```

```sql
39  SELECT * FROM Timeslot -- Testcase 12
40  WHERE ObjectID <= 10;
41
42
```

Result Grid | Filter Rows: | Edit:

TimeslotID	ObjectID	StartDate	EndDate
1	1	2023-07-10	2023-07-16
2	1	2023-07-17	2023-07-23
3	1	2023-07-24	2023-07-30
4	2	2023-07-10	2023-07-16
5	2	2023-07-17	2023-07-23
6	3	2023-07-07	2023-07-09
7	3	2023-07-14	2023-07-16
8	4	2023-07-07	2023-07-09
9	4	2023-07-14	2023-07-16
10	5	2023-07-07	2023-07-09
11	6	2023-07-31	2023-08-06
12	6	2023-08-07	2023-08-13
13	7	2023-07-31	2023-08-06
14	7	2023-08-07	2023-08-13
15	8	2023-07-14	2023-07-16
16	8	2023-07-21	2023-07-23
17	9	2023-09-01	2023-09-10
18	9	2023-10-15	2023-10-21
19	10	2023-08-14	2023-08-20
20	10	2023-08-21	2023-08-27

INTERNATIONALE HOCHSCHULE

Workflow
Timeslot - Reservation - Payment

- Guests can view available timeslots for objects stored in the timeslot table

- Guests make reservations on specific objects that are stored in the reservation table with status „Pending"

- Reservations are accepted or declined by the objects' owners (hosts) → Status in the reservation table changes to „Accepted" or „Declined"

- Payments are made by the guests on the second day of their stay (to ensure that the accommodation is really available)

17. Message - 1

- **CREATE TABLE** Message
  (MessageID **INT AUTO_INCREMENT**,
  Message **VARCHAR**(1000),
  MessageSubject **VARCHAR**(100),
  RecipientUserID **INT**,
  SenderUserID **INT**,
  Datetime DATETIME,
  PRIMARY KEY (MessageID),
  FOREIGN KEY (RecipientUserID)
       REFERENCES User(UserID)
       ON DELETE SET NULL
       ON UPDATE CASCADE,
  FOREIGN KEY (SenderUserID)
       REFERENCES User(UserID)
       ON DELETE SET NULL
       ON UPDATE CASCADE);

17. Message - 2

```
-- message
```
INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Dear Mr. Gomez, is your listing at Alexanderplatz still available from 2023-09-03? Best, Ava Jackson", "Inquiry about Listing", 12, 29, "2023-07-01 09:20:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Hello Ms. Jackson, yes it still is. If you want a slot just make a reservation.", "RE: Inquiry about Listing", 29, 12, "2023-07-04 17:46:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Dear Mr. Gomez, thank you for your reply! I'll make a reservation. I just wanted to know if it's possible to park my car there?", "RE: RE: Inquiry about Listing", 12, 29, "2023-07-04 19:55:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Dear Mr. Gomez, I kindly would like to inquire about the parking situation again. Also my reservation still seems to be pending. Is there a problem?", "RE: RE: Inquiry about Listing", 12, 29, "2023-07-12 21:25:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("No parking... It's almost 2 months till then. Your impatience is not my problem.", "RE: RE: Inquiry about Listing", 29, 12, "2023-07-13 11:17:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("I was already your guest 1 month ago! Why do you decline my reservation?! That is ungrateful!", "WHY DECLINED?!", 7, 6, "2023-07-11 10:25:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Dear Ms. Martinez, since you find our accomodations to be too dirty and hot as stated in you review, we thought you clearly have no interest in another stay.", "RE: WHY DECLINED?!", 6, 7, "2023-07-11 12:25:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("You have some nerve, Mister!", "RE: RE: WHY DECLINED?!", 7, 6, "2023-07-11 14:55:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Hello, I just wanted to say that I had a fantastic stay at your property. The place was clean, comfortable, and had amazing views. Thank you for providing such a great experience!", "Thank You", 11, 20, "2023-03-24 15:45:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("It was a pleasure! Please consider writing an object rating if you liked it! :)", "RE: Thank You", 20, 11, "2023-03-25 17:41:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Absolutely, I will do that!", "RE: RE: Thank You", 11, 20, "2023-03-25 19:41:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Hey, I noticed that the price per night for your listing has increased. Is there a specific reason for the price change? Thanks!", "Price Increase Inquiry", 18, 10, "2023-07-21 11:22:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Dear Sophia, sadly I had to increase the price a little since the insurance for the property got more expensive. Also I had some cancellations that were super last minute and could not be reassigned. Thanks for understanding!", "RE: Pric

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Dear Mr. Lopez, I just wanted to let you know that I had a change of plans and won't be able to proceed with the reservation. I apologize for any inconvenience caused. Best regards, Ava Jackson", "ReservationID Cancellation", 16, 29, "20

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Hi, I have a question about the amenities available at your property. Is there a fully equipped kitchen? Thank you!", "Amenities Inquiry", 19, 17, "2023-07-15 12:37:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Sadly there is no kitchen at all. There are a lot of super nice restaurants in New York however!", "RE: Amenities Inquiry", 17, 19, "2023-07-15 19:31:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Hey, I just wanted to double-check if the property is pet-friendly. I plan to bring my small dog with me. Can you confirm? Thanks!", "Pet-Friendly Inquiry", 14, 15, "2023-05-01 16:20:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Chère Olivia, actually we don't allow pets in our accomodations. We can however make a small exception this time, since no other guest will be around during your reservation. Au revoir, see you soon!", "RE: Pet-Friendly Inquiry", 15, 14,

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Oh, I'm deeply sorry, I made a mistake when checking for accomodations that allow pets! Thank you very much! I'm looking forward to the trip to Paris!", "RE: RE: Pet-Friendly Inquiry", 14, 15, "2023-05-02 16:45:00");

INSERT INTO message (Message, MessageSubject, RecipientUserID, SenderUserID, Datetime)
VALUES ("Pas de probleme ma chère Olivia! À plus!", "RE: Pet-Friendly Inquiry", 15, 14, "2023-05-02 18:45:00");

17. Message - 3

```
42 •    SELECT * FROM Message -- Testcase 13
43      ORDER BY Datetime;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

MessageID	Message	MessageSubject	RecipientUserID	SenderUserID	Datetime
9	Hello, I just wanted to say that I had a fantastic stay at your property. The place was clean, comfortab...	Thank You	11	20	2023-03-24 15:45:00
10	It was a pleasure! Please consider writing an object rating if you liked it! :)	RE: Thank You	20	11	2023-03-25 17:41:00
11	Absolutely, I will do that!	RE: RE: Thank You	11	20	2023-03-25 19:41:00
14	Dear Mr. Lopez, I just wanted to let you know that I had a change of plans and won't be able to procee...	ReservationID Cancellation	16	29	2023-04-15 09:17:00
17	Hey, I just wanted to double-check if the property is pet-friendly. I plan to bring my small dog with me. ...	Pet-Friendly Inquiry	14	15	2023-05-01 16:20:00
18	Chère Olivia, actually we don't allow pets in our accomodations. We can however make a small exceptio...	RE: Pet-Friendly Inquiry	15	14	2023-05-02 16:17:00
19	Oh, I'm deeply sorry, I made a mistake when checking for accomodations that allow pets! Thank you ve...	RE: RE: Pet-Friendly Inquiry	14	15	2023-05-02 16:45:00
20	Pas de probleme ma chère Olivia! Á plus!	RE: Pet-Friendly Inquiry	15	14	2023-05-02 18:45:00
1	Dear Mr. Gomez, is your listing at Alexanderplatz still available from 2023-09-03? Best, Ava Jackson	Inquiry about Listing	12	29	2023-07-01 09:20:00
2	Hello Ms. Jackson, yes it still is. If you want a slot just make a reservation.	RE: Inquiry about Listing	29	12	2023-07-04 17:46:00
3	Dear Mr. Gomez, thank you for your reply! I'll make a reservation. I just wanted to know if it's possible t...	RE: RE: Inquiry about Listing	12	29	2023-07-04 19:55:00
6	I was already your guest 1 month ago! Why do you decline my reservation?! That is ungrateful!	WHY DECLINED?!	7	6	2023-07-11 10:25:00
7	Dear Ms. Martinez, since you find our accomodations to be too dirty and hot as stated in you review, w...	RE: WHY DECLINED?!	6	7	2023-07-11 12:25:00
8	You have some nerve, Mister!	RE: RE: WHY DECLINED?!	7	6	2023-07-11 14:55:00
4	Dear Mr. Gomez, I kindly would like to inquire about the parking situation again. Also my reservation still...	RE: RE: Inquiry about Listing	12	29	2023-07-12 21:25:00
5	No parking... It's almost 2 months till then. Your impatience is not my problem.	RE: RE: Inquiry about Listing	29	12	2023-07-13 11:17:00
15	Hi, I have a question about the amenities available at your property. Is there a fully equipped kitchen? ...	Amenities Inquiry	19	17	2023-07-15 12:37:00
16	Sadly there is no kitchen at all. There are a lot of super nice restaurants in New York however!	RE: Amenities Inquiry	17	19	2023-07-15 19:31:00
12	Hey, I noticed that the price per night for your listing has increased. Is there a specific reason for the p...	Price Increase Inquiry	18	10	2023-07-21 11:22:00
13	Dear Sophia, sadly I had to increase the price a little since the insurance for the property got more exp...	RE: Price Increase Inquiry	10	18	2023-07-21 14:27:00

18. ObjectRating - 1

```sql
CREATE TABLE ObjectRating
(ObjectRatingID INT AUTO_INCREMENT,
Review VARCHAR(500),
NumberOfStars INT,
AuthorUserID INT,
ObjectID INT,
PRIMARY KEY (ObjectRatingID),
FOREIGN KEY (AuthorUserID)
    REFERENCES User(UserID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (ObjectID)
    REFERENCES Object(ObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
CONSTRAINT StarsCheckObject CHECK (NumberOfStars >= 1 AND NumberOfStars <= 5)); -- Checks for a valid amount of stars
```

18. ObjectRating -2

```
-- objectrating
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("This accomodation was super dirty. Also it was too hot. Get some air conditioning!!", 1, 6, 5);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("Super nice accomodation with charme parisienne! We really much enjoyed the wine.", 5, 15, 14);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("I had a fantastic stay at your property. The place was clean, comfortable, and had amazing views. Thank you for providing such a great experience!", 5, 20, 10);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("This place exceeded my expectations. The host was very accommodating, and the location was perfect for exploring the city. Highly recommended!", 5, 7, 12);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("I had a pleasant stay at this property. The room was clean and comfortable. The host was friendly and provided helpful recommendations for local attractions.", 4, 9, 3);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES(NULL, 3, 13, 6);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("The property was in a great location and had all the amenities I needed. The host was responsive and helpful throughout my stay.", 4, 18, 8);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("I had a wonderful experience at this property. The host went above and beyond to ensure my comfort and satisfaction. Will definitely book again in the future!", 5, 11, 17);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("The accommodation was disappointing. The room was smaller than expected, and the cleanliness was subpar. Not worth the price.", 2, 6, 4);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("Fantastic place with stunning views! The property had all the necessary amenities, and the host was very friendly and helpful. Would definitely stay here again.", 5, 15, 22);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("I had a great time staying at this property. The location was convenient, and the room was spacious and clean. Highly recommend it!", 4, 19, 16);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES(NULL, 5, 14, 1);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("The property was a bit outdated and could use some renovation. However, the host was friendly and the location was excellent.", 3, 20, 7);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("I absolutely loved my stay at this property. The decor was stylish, and the amenities were top-notch. The host was also very responsive and helpful.", 5, 10, 9);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("The property was exactly as described. Clean, comfortable, and conveniently located. The host was friendly and provided clear instructions for check-in. Would stay here again.", 4, 8, 13);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("My stay at this property was disappointing. The room was not clean upon arrival, and there were issues with the plumbing. The host was unresponsive to my concerns.", 2, 16, 24);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("Great value for money! The property was spacious and well-equipped. The host was friendly and accommodating. Would recommend to others.", 4, 12, 2);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES(NULL, 3, 17, 11);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("I had a pleasant stay at this property. The host was welcoming and the room was cozy. The location was convenient for exploring the city.", 4, 5, 21);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("The property had a beautiful garden and a peaceful atmosphere. It was the perfect getaway for relaxation. Highly recommend!", 5, 23, 23);
INSERT INTO objectRating (Review, NumberOfStars, AuthorUserID, ObjectID) VALUES("The property was not as advertised. The photos were misleading, and the amenities were lacking. I was disappointed with my stay.", 2, 3, 15);
```

18. ObjectRating -3

```
45 ●    SELECT * FROM ObjectRating; -- Testcase 14
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ObjectRatingID	Review	NumberOfStars	AuthorUserID	ObjectID
1	This accomodation was super dirty. Also it was too hot. Get some air conditioning!!	1	6	5
2	Super nice accomodation with charme parisienne! We really much enjoyed the wine.	5	15	14
3	I had a fantastic stay at your property. The place was clean, comfortable, and had amazing vie...	5	20	10
4	This place exceeded my expectations. The host was very accommodating, and the location was ...	5	7	12
5	I had a pleasant stay at this property. The room was clean and comfortable. The host was frien...	4	9	3
6	NULL	3	13	6
7	The property was in a great location and had all the amenities I needed. The host was responsiv...	4	18	8
8	I had a wonderful experience at this property. The host went above and beyond to ensure my c...	5	11	17
9	The accommodation was disappointing. The room was smaller than expected, and the cleanliness...	2	6	4
10	Fantastic place with stunning views! The property had all the necessary amenities, and the host ...	5	15	22
11	I had a great time staying at this property. The location was convenient, and the room was spac...	4	19	16
12	NULL	5	14	1
13	The property was a bit outdated and could use some renovation. However, the host was friendl...	3	20	7
14	I absolutely loved my stay at this property. The decor was stylish, and the amenities were top-n...	5	10	9
15	The property was exactly as described. Clean, comfortable, and conveniently located. The host ...	4	8	13
16	My stay at this property was disappointing. The room was not clean upon arrival, and there wer...	2	16	24
17	Great value for money! The property was spacious and well-equipped. The host was friendly an...	4	12	2
18	NULL	3	17	11
19	I had a pleasant stay at this property. The host was welcoming and the room was cozy. The loca...	4	5	21
20	The property had a beautiful garden and a peaceful atmosphere. It was the perfect getaway fo...	5	23	23
21	The property was not as advertised. The photos were misleading, and the amenities were lackin...	2	3	15

19. UserRating - 1

```sql
•   CREATE TABLE UserRating
    (UserRatingID INT AUTO_INCREMENT,
    Review VARCHAR(500),
    NumberOfStars INT,
    AuthorUserID INT,
    UserID INT,
    PRIMARY KEY (UserRatingID),
    FOREIGN KEY (AuthorUserID)
        REFERENCES User(UserID)
        ON DELETE SET NULL
        ON UPDATE CASCADE,
    FOREIGN KEY (UserID)
        REFERENCES User(UserID)
        ON DELETE SET NULL
        ON UPDATE CASCADE,
    CONSTRAINT StarsCheckUser CHECK (NumberOfStars >= 1 AND NumberOfStars <= 5)); -- Checks for a valid amount of stars
```

19. UserRating - 2

```sql
-- userRating
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Super disrespectful and spiteful human being! Didn't let me make another reservation!", 1, 6, 7);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Thomas is the best host you could wish for, with the best recommendations for activities and good restaurants in Paris. His taste of wine is excellent. Thank you
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Absolutely terrible experience! The host was rude and unresponsive. I would not recommend booking with this user.", 1, 9, 3);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES(NULL, 4, 12, 8);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Great communication and smooth transaction. The user was very accommodating and helpful throughout the booking process.", 5, 11, 7);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Unreliable and untrustworthy user. They canceled my reservation last minute without any explanation.", 2, 6, 20);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Wonderful host! They went above and beyond to ensure a comfortable stay. Highly recommended!", 5, 15, 19);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("I had a great experience renting from this user. The communication was smooth, and the transaction was hassle-free.", 4, 10, 16);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES(NULL, 5, 14, 1);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("The user was very responsive and accommodating. They provided detailed instructions and made the check-in process seamless.", 4, 18, 12);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Highly recommend this user! They were friendly, reliable, and the transaction was easy. Would definitely book with them again.", 5, 7, 6);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Had a pleasant experience renting from this user. They were professional and provided all the necessary information for a smooth stay.", 4, 9, 11);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Disappointing experience. The user was unresponsive and unhelpful. I would not recommend booking with them.", 2, 6, 10);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("I had a fantastic experience renting from this user. They were prompt in their responses and provided excellent service.", 5, 20, 5);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("The user was accommodating and provided helpful recommendations for local attractions. I enjoyed my stay thanks to their suggestions.", 4, 19, 23);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("I had a negative experience renting from this user. They were uncommunicative and did not fulfill their commitments. Would not book with them again.", 2, 3, 15);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES(NULL, 3, 17, 11);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("The user was friendly and reliable. The transaction went smoothly, and I had a pleasant experience renting from them.", 4, 5, 21);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("The user was prompt in their responses and provided clear instructions. I had a positive experience renting from them.", 4, 23, 23);
INSERT INTO userRating (Review, NumberOfStars, AuthorUserID, UserID) VALUES("Avoid this user! They were dishonest and untrustworthy. I had a terrible experience dealing with them.", 1, 3, 15);
```

19. UserRating - 3

```
47  ●      SELECT * FROM UserRating; -- Testcase 15
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

UserRatingID	Review	NumberOfStars	AuthorUserID	UserID
1	Super disrespectful and spiteful human being! Didn't let me make another reservation!	1	6	7
2	Thomas is the best host you could wish for, with the best recommendations for activities ...	5	15	14
3	Absolutely terrible experience! The host was rude and unresponsive. I would not recom...	1	9	3
4	NULL	4	12	8
5	Great communication and smooth transaction. The user was very accommodating and he...	5	11	7
6	Unreliable and untrustworthy user. They canceled my reservation last minute without an...	2	6	20
7	Wonderful host! They went above and beyond to ensure a comfortable stay. Highly rec...	5	15	19
8	I had a great experience renting from this user. The communication was smooth, and th...	4	10	16
9	NULL	5	14	1
10	The user was very responsive and accommodating. They provided detailed instructions a...	4	18	12
11	Highly recommend this user! They were friendly, reliable, and the transaction was easy. ...	5	7	6
12	Had a pleasant experience renting from this user. They were professional and provided ...	4	9	11
13	Disappointing experience. The user was unresponsive and unhelpful. I would not recom...	2	6	10
14	I had a fantastic experience renting from this user. They were prompt in their responses...	5	20	5
15	The user was accommodating and provided helpful recommendations for local attractions...	4	19	23
16	I had a negative experience renting from this user. They were uncommunicative and did ...	2	3	15
17	NULL	3	17	11
18	The user was friendly and reliable. The transaction went smoothly, and I had a pleasant ...	4	5	21
19	The user was prompt in their responses and provided clear instructions. I had a positive ...	4	23	23
20	Avoid this user! They were dishonest and untrustworthy. I had a terrible experience dea...	1	3	15

20. Admin

```sql
-- admin
INSERT INTO admin (FirstName, LastName) VALUES ("Mohammed", "Emre");
INSERT INTO admin (FirstName, LastName) VALUES ("Sophia", "Nguyen");
INSERT INTO admin (FirstName, LastName) VALUES ("Sara", "Garcia");
INSERT INTO admin (FirstName, LastName) VALUES ("Jamal", "Khan");
INSERT INTO admin (FirstName, LastName) VALUES ("Leila", "Mohammed");
INSERT INTO admin (FirstName, LastName) VALUES ("Matias", "Silva");
INSERT INTO admin (FirstName, LastName) VALUES ("Anaya", "Patel");
INSERT INTO admin (FirstName, LastName) VALUES ("Elijah", "Cohen");
INSERT INTO admin (FirstName, LastName) VALUES ("Aisha", "Ismail");
INSERT INTO admin (FirstName, LastName) VALUES ("Hugo", "Santos");
INSERT INTO admin (FirstName, LastName) VALUES ("Amara", "Martinez");
INSERT INTO admin (FirstName, LastName) VALUES ("Ahmed", "Abdullah");
INSERT INTO admin (FirstName, LastName) VALUES ("Lila", "Gonzalez");
INSERT INTO admin (FirstName, LastName) VALUES ("Luca", "Fernandez");
INSERT INTO admin (FirstName, LastName) VALUES ("Nadia", "Rahman");
INSERT INTO admin (FirstName, LastName) VALUES ("Samir", "Ahmed");
INSERT INTO admin (FirstName, LastName) VALUES ("Elina", "Johansson");
INSERT INTO admin (FirstName, LastName) VALUES ("Ravi", "Kumar");
INSERT INTO admin (FirstName, LastName) VALUES ("Isabella", "Moreno");
INSERT INTO admin (FirstName, LastName) VALUES ("Omar", "Lopez");
```

```sql
CREATE TABLE Admin
(AdminID INT AUTO_INCREMENT,
FirstName VARCHAR(100),
LastName VARCHAR(100),
PRIMARY KEY (AdminID));
```

Collective Testcase on slide 43

21. SupportTicket - 1

```sql
CREATE TABLE SupportTicket
(SupportTicketID INT AUTO_INCREMENT,
Datetime DATETIME,
ResponsibleAdminID INT,
SenderUserID INT,
Status VARCHAR(100),
Message VARCHAR(500),
PRIMARY KEY (SupportTicketID),
FOREIGN KEY (ResponsibleAdminID)
    REFERENCES Admin(AdminID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (SenderUserID)
    REFERENCES User(UserID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

Collective Testcase on slide 43

21. SupportTicket - 2

```sql
-- supportTicket
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2022-08-13 09:47:00", 1, 5, "Solved", "Hello Support Team, I'm experiencing issues accessing my account. I keep getting an 'Invalid Username' error. Please assist.");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2022-12-11 14:32:00", 7, 11, "Solved", "Hi there, I've been trying to change the object features for my listing, but the system keeps giving me an 'no authorization' message. Can you please help me resolve this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-01-15 10:07:00", 2, 17, "Solved", "Dear Support Team, I'm encountering difficulties while making a reservation. Every time I proceed to confirm, the page freezes. Please investigate and provide a solution.");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-02-26 13:22:00", 4, 9, "Solved", "Hello Support, I'm having trouble updating my profile information. Whenever I try to save the changes, I receive a 'Server Error' message.");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-02-17 11:50:00", 6, 10, "Solved", "Hi Support Team, I've noticed that some of the images on the listings are not displaying properly. They appear distorted and pixelated. Please investigate and fix this issue.");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-04-08 15:17:00", 3, 5, "Solved", "Dear Support, I'm having trouble logging into the mobile app. It keeps crashing upon launch. I've already tried reinstalling it, but the issue persists. Can you please assist me with resolving this problem?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-07-12 11:46:00", 2, 7, "Inquiry ongoing", "Dear Administrators, I recieved an unjustified review from Ms. Maria Martinez that compromises my score. Please look into it. ");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-07-14 11:15:00", 17, 23, "Solved", "Dear Administrators, I'd like to adjust the price of one of my listings. I checked everywhere, but I cannot find where or how I can do that in the app.");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2022-09-02 16:05:00", 5, 14, "Solved", "Hello Support Team, I've been experiencing intermittent internet connectivity issues while using the platform. It affects my ability to browse and make reservations. Can you please investigate and provide a solution?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2022-11-19 09:31:00", 3, 19, "Solved", "Hi there, I've recently updated my profile picture, but it's not showing up correctly on my listings. It appears distorted and blurry. Could you please fix this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2022-12-31 14:17:00", 7, 10, "Solved", "Dear Support, I've noticed that some of the amenities listed on my property are incorrect. For example, it mentions a swimming pool, but there isn't one. Can you please update the amenities accordingly?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-01-05 11:58:00", 2, 16, "Solved", "Hello Support, I'm having trouble uploading additional photos to my property listing. The upload process keeps failing. Can you please assist me in resolving this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-02-14 13:40:00", 6, 12, "Solved", "Hi Support Team, I've encountered an error message when trying to submit a review for a recent stay. It says 'Review submission failed.' Could you please investigate and rectify this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-03-25 09:25:00", 1, 18, "Solved", "Dear Support, I've noticed a discrepancy in the pricing of my listing. The displayed price is different from what I initially set. Can you please look into this matter and resolve it?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-04-02 15:37:00", 4, 15, "Solved", "Hello Support Team, I'm having difficulty accessing the booking history section of my account. When I click on it, nothing happens. Can you please fix this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-05-09 10:59:00", 3, 20, "Solved", "Hi there, I've encountered a problem with the messaging system. I can't send or receive messages from other users. Could you please investigate and resolve this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-05-23 11:34:00", 5, 11, "Solved", "Dear Support, I've forgotten my account password, and the 'Forgot Password' feature is not sending me the reset instructions. Can you please help me regain access to my account?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-06-07 13:17:00", 7, 13, "Solved", "Hello Support, I've encountered an issue while trying to edit the description of my property. After making the changes, they don't seem to save. Can you please investigate and fix this problem?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-07-15 16:25:00", 2, 9, "Inquiry ongoing", "Dear Administrators, I'm having trouble with the search filters on the website. They don't seem to work properly, and I'm unable to narrow down my results effectively. Can you please look into this issue?");
INSERT INTO supportticket (Datetime, ResponsibleAdminID, SenderUserID, Status, Message)
VALUES ("2023-07-16 10:43:00", 4, 8, "Solved", "Dear Support, I'm experiencing slow response times while using the mobile app. It takes a long time for pages to load and for actions to be processed. Can you please optimize the app's performance?");
```

Testcase
Admin - SupportTicket


```
49 ●     SELECT Admin.FirstName, Admin.LastName, SupportTicket.Message, SupportTicket.ResponsibleAdminID -- Testcase 16
50       FROM Admin
51       INNER JOIN SupportTicket ON SupportTicket.ResponsibleAdminID = Admin.AdminID
52       ORDER BY Admin.AdminID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FirstName	LastName	Message	ResponsibleAdminID
Mohammed	Emre	Hello Support Team, I'm experiencing issues accessing my account. I keep getting...	1
Mohammed	Emre	Dear Support, I've noticed a discrepancy in the pricing of my listing. The displaye...	1
Sophia	Nguyen	Dear Support Team, I'm encountering difficulties while making a reservation. Ever...	2
Sophia	Nguyen	Dear Administrators, I recieved an unjustified review from Ms. Maria Martinez tha...	2
Sophia	Nguyen	Hello Support, I'm having trouble uploading additional photos to my property listin...	2
Sophia	Nguyen	Dear Administrators, I'm having trouble with the search filters on the website. Th...	2
Sara	Garcia	Dear Support, I'm having trouble logging into the mobile app. It keeps crashing up...	3
Sara	Garcia	Hi there, I've recently updated my profile picture, but it's not showing up correctl...	3
Sara	Garcia	Hi there, I've encountered a problem with the messaging system. I can't send or r...	3
Jamal	Khan	Hello Support, I'm having trouble updating my profile information. Whenever I try...	4
Jamal	Khan	Hello Support Team, I'm having difficulty accessing the booking history section of ...	4
Jamal	Khan	Dear Support, I'm experiencing slow response times while using the mobile app. It...	4
Leila	Mohammed	Hello Support Team, I've been experiencing intermittent internet connectivity issu...	5
Leila	Mohammed	Dear Support, I've forgotten my account password, and the 'Forgot Password' fe...	5
Matias	Silva	Hi Support Team, I've noticed that some of the images on the listings are not displ...	6
Matias	Silva	Hi Support Team, I've encountered an error message when trying to submit a revi...	6
Anaya	Patel	Hi there, I've been trying to change the object features for my listing, but the sy...	7
Anaya	Patel	Dear Support, I've noticed that some of the amenities listed on my property are i...	7
Anaya	Patel	Hello Support, I've encountered an issue while trying to edit the description of my...	7
Elina	Johansson	Dear Administrators, I'd like to adjust the price of one of my listings. I checked ev...	17

22. SpokenLanguage
-RELATIONSHIP TABLE-

```sql
54   SELECT * FROM SpokenLanguage -- Testcase 17
55   WHERE UserID <= 10
56   ORDER BY UserID;
```

```sql
CREATE TABLE SpokenLanguage    -- Relationship table between Language and User
(LanguageID INT,
UserID INT,
FOREIGN KEY (LanguageID)
    REFERENCES Language(LanguageID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (UserID)
    REFERENCES User(UserID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
-- spokenLanguage
-- Inserting english as the spoken language for all users (easier for messaging system)
    -- This is only applicable for the dummy dataset! Users might of course not be able to speak english.
INSERT INTO spokenlanguage (LanguageID, UserID)
SELECT language.LanguageID, user.UserID FROM language
CROSS JOIN user
WHERE language.LanguageName = "English";


-- Inserting a second language for the dummy users
    -- This is only applicable for the dummy dataset, as random languages will be assigned to users!
INSERT INTO spokenlanguage (LanguageID, UserID)
SELECT language.LanguageID, user.UserID
FROM language
CROSS JOIN user
WHERE language.LanguageName != "English" AND RAND() < 0.05;    -- Not english, as it's already assigned to everyone.
                                                               -- Low random percentage, otherwise most users become language geniuses (not plausible).
```

Result Grid | Filter Rows: | Export: | W

LanguageID	UserID
1	1
19	1
1	2
1	3
8	3
6	3
1	4
17	4
1	5
13	5
1	6
20	6
7	6
1	7
1	8
1	9
11	9
7	9
1	10

Testcase 17 will not be reproducible, as data generation is random!

23. GuestsFavoriteObject
-RELATIONSHIP TABLE-

```sql
CREATE TABLE GuestsFavoriteObject -- Relationship table between FavoriteObject and Guest
(FavoriteObjectID INT,
GuestID INT,
FOREIGN KEY (FavoriteObjectID)
    REFERENCES FavoriteObject(FavoriteObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (GuestID)
    REFERENCES Guest(GuestID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
-- guestsFavoriteObject
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (2, 1);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (6, 1);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (9, 1);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (20, 3);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (10, 3);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (14, 5);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (3, 5);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (4, 5);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (18, 6);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (15, 7);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (4, 8);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (3, 9);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (1, 9);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (14, 10);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (18, 13);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (2, 13);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (15, 15);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (3, 19);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (18, 20);
INSERT INTO guestsFavoriteObject (FavoriteObjectID, GuestID) VALUES (14, 20);
```

```sql
58  SELECT * FROM GuestsFavoriteObject -- Testcase 18
59  ORDER BY FavoriteObjectID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell C

FavoriteObjectID	GuestID
1	9
2	1
2	13
3	5
3	9
3	19
4	5
4	8
6	1
9	1
10	3
14	5
14	10
14	20
15	7
15	15
18	6
18	13
18	20
20	3

24. ObjectPropertyType
-RELATIONSHIP TABLE-

```sql
CREATE TABLE ObjectPropertyType -- Relationship table between Object and PropertyType
(ObjectID INT,
PropertyTypeID INT,
FOREIGN KEY (ObjectID)
    REFERENCES Object(ObjectID)
    ON DELETE SET NULL
    ON UPDATE CASCADE,
FOREIGN KEY (PropertyTypeID)
    REFERENCES PropertyType(PropertyTypeID)
    ON DELETE SET NULL
    ON UPDATE CASCADE);
```

```sql
-- objectPropertyType
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (1, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (2, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (3, 11);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (4, 8);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (5, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (6, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (7, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (8, 9);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (9, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (10, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (11, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (12, 4);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (13, 2);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (14, 3);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (15, 3);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (16, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (17, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (18, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (19, 1);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (20, 11);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (21, 11);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (22, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (23, 14);
INSERT INTO objectpropertytype (ObjectID, PropertytypeID) VALUES (24, 3);
```

```sql
61  SELECT * FROM ObjectPropertyType; -- Testcase 19
```

Result Grid | Filter Rows: | Export: | Wrap Cell

ObjectID	PropertyTypeID
1	1
2	1
3	11
4	8
5	14
6	14
7	14
8	9
9	14
10	14
11	1
12	4
13	2
14	3
15	3
16	1
17	1
18	1
19	1
20	11
21	11
22	14
23	14
24	3

Test case
Join over 7 tables

```sql
SELECT Reservation.StartDate, Reservation.EndDate, Reservation.ReservationID, Reservation.Status,  -- Testcase 20
User.UserID AS GuestUserID, User.FirstName AS GuestFirstName, User.LastName AS GuestLastName,
Object.ObjectID, Object.HostID,
Host.UserID AS HostUserID,
Address.AddressID, City.CityName AS City
FROM Reservation
INNER JOIN Guest ON Reservation.GuestID = Guest.GuestID
INNER JOIN User ON User.UserID = Guest.UserID
INNER JOIN Object ON Reservation.ObjectID = Object.ObjectID
INNER JOIN Host ON Object.HostID = Host.HostID
INNER JOIN Address ON Object.AddressID = Address.AddressID
INNER JOIN City ON Address.CityID = City.CityID
WHERE Reservation.ReservationID >=10;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

StartDate	EndDate	ReservationID	Status	GuestUserID	GuestFirstName	GuestLastName	ObjectID	HostID	HostUserID	AddressID	City
2022-09-01	2022-09-08	12	Accepted	4	Emily	Shepard	1	1	2	1	Los Angeles
2023-05-05	2023-05-12	39	Withdrawn	4	Emily	Shepard	1	1	2	1	Los Angeles
2023-01-10	2023-01-17	22	Accepted	1	Marcus	Shepard	2	1	2	1	Los Angeles
2022-11-05	2022-11-12	24	Accepted	13	Anna	Sato	3	2	5	5	Beijing
2022-12-01	2022-12-08	21	Accepted	22	Alex	Miller	5	4	7	4	Shanghai
2023-07-20	2023-07-27	32	Declined	6	Maria	Martinez	5	4	7	4	Shanghai
2023-08-15	2023-08-22	36	Pending	22	Alex	Miller	6	4	7	4	Shanghai
2023-03-25	2023-03-31	18	Accepted	25	Sophia	Martin	7	4	7	4	Shanghai
2023-02-05	2023-02-12	25	Accepted	9	Alex	Lee	7	4	7	4	Shanghai
2023-02-10	2023-02-17	20	Accepted	30	Amelia	Martinez	24	5	9	25	Toronto
2023-02-15	2023-02-22	31	Accepted	12	Luis	Gomez	24	5	9	25	Toronto
2023-01-20	2023-01-27	11	Accepted	20	James	Yamamoto	20	6	11	21	Chicago
2023-04-10	2023-04-17	35	Accepted	3	Michael	Johnson	20	6	11	21	Chicago
2023-01-01	2023-01-08	26	Accepted	24	Oliver	Taylor	21	6	11	21	Chicago
2023-09-03	2023-09-10	15	Pending	29	Ava	Jackson	16	7	12	15	Berlin
2023-01-15	2023-01-22	41	Accepted	25	Sophia	Martin	16	7	12	15	Berlin
2023-05-15	2023-05-22	16	Accepted	15	Olivia	Cohen	14	8	14	13	Paris
2023-09-01	2023-09-08	34	Pending	10	Sophia	Anderson	14	8	14	13	Paris
2023-03-05	2023-03-12	10	Accepted	10	Sophia	Anderson	15	8	14	13	Paris
2022-12-20	2022-12-27	38	Accepted	27	Mia	Thomas	15	8	14	13	Paris
2023-06-02	2023-06-09	13	Declined	16	Daniel	Lopez	11	9	16	10	Rome
2023-05-15	2023-05-22	27	Withdrawn	29	Ava	Jackson	11	9	16	10	Rome
2022-09-20	2022-09-27	29	Accepted	8	Sara	Garcia	12	10	18	11	Stockholm
2023-04-01	2023-04-08	28	Accepted	15	Olivia	Cohen	18	11	19	18	New York
2023-07-05	2023-07-12	19	Withdrawn	6	Maria	Martinez	19	13	23	20	Vienna
2023-08-19	2023-08-26	17	Pending	19	Mia	Perez	23	15	27	22	Shanghai
2023-03-05	2023-03-12	37	Accepted	17	Ella	Kim	23	15	27	22	Shanghai
2023-06-25	2023-06-28	23	Declined	19	Mia	Perez	17	17	31	16	Berlin
2022-10-10	2022-10-17	14	Accepted	9	Alex	Lee	8	18	33	7	Mexico CityID
2023-02-25	2023-03-04	40	Accepted	30	Amelia	Martinez	8	18	33	7	Mexico CityID
2022-10-15	2022-10-22	33	Accepted	16	Daniel	Lopez	9	19	34	9	Rome
2023-03-10	2023-03-17	30	Accepted	20	James	Yamamoto	10	19	34	9	Rome

Used tools/ DBMS/ GUI

- MySQL 8.0.33
- MySQL Workbench
- Visualization: Powerpoint, Excel