The Development Phase

Concerning the design of a database for Airbnb use case, the object of the portfolio examination requested by the course DLBDSPBDM01.

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What to expect ?

Based on the results attained in the conception phase, we aim to implement these results, fix them if they need fixing or improving them.

We'll show only the first 20 rows of the sample data, thus, it might be more depending on the cardinalities specified for entities. (Check figure 2 p.5 in the conception phase)

In this phase, we'll go through the following processes :

Demonstrate the entities and the statements used to create and inject data in them.

Eventually, there will be 3 testing cases to examine the performance of our database.

Overview of the entities

host_id	first_name	last_name	email	phone_number	host_type	host_status
1	Thomas	BAKER	thomas.baker@gmail.com	345-678-9012	particular	regular
2	Ali	MAATAOUI	Ali.mt5@gmail.com	012-345-6789	professional	super
3	Andreas	MUELLER	andreas.mueller@gmail.com	567-890-1234	professional	super
4	Mo Jin	HYUK	mo.jin.hyuuki@gmail.com	678-901-2345	particular	regular
5	Carla	GONZALEZ	carla.gonzalez@gmail.com	678-901-2345	professional	regular
6	Marco	ROSSI	marco.rossi@gmail.com	901-234-5678	professional	plus
7	Sophia	TAYLOR	sophia.taylor@gmail.com	012-345-6789	particular	super
8	Chloe	WHITE	chloe.white@gmail.com	890-123-4567	particular	plus
9	Julia	CLARK	julia.clark@gmail.com	456-789-0123	particular	regular
10	David	LEE	david.lee@gmail.com	789-012-3456	professional	regular
11	Lisa	MILLER	lisa.miller@gmail.com	456-789-0123	professional	super
12	Maria	GARCIA	maria.garcia@gmail.com	234-567-8901	professional	super
13	Ahmed	HASSAN	ahmed.hassan@gmail.com	789-012-3456	particular	regular
14	Akai	WATARU	red.wataru@gmail.com	901-234-5678	particular	regular
15	Max	MUSTERMANN	max.mustermann@gmail.com	345-678-9012	professional	super
16	Kuchi	KAPOOR	kuche.kapoor@gmail.com	234-567-8901	particular	super
17	Emma	WILLIAMS	emma.williams@gmail.com	890-123-4567	professional	plus
18	Peter	JOHNSON	peter.johnson@gmail.com	567-890-1234	particular	regular
19	Andrea	ROSSI	andrea.rossi@gmail.com	123-456-7890	professional	plus
20	John	DOE	john.doe@gmail.com	123-456-7890	particular	regular

```sql
CREATE TABLE HOSTS
(
    HOST_ID      SERIAL  NOT NULL UNIQUE,
    FIRST_NAME   VARCHAR NOT NULL,
    LAST_NAME    VARCHAR NOT NULL,
    EMAIL        VARCHAR NOT NULL,
    PHONE_NUMBER VARCHAR NOT NULL,
    HOST_TYPE    VARCHAR NOT NULL,
    HOST_STATUS  VARCHAR NOT NULL,
    PRIMARY KEY (HOST_ID)
)
```

Hosts

This entity stores information about hosts.

guest_id 1	first_name	last_name	email	phone_number	facebook_account	google_account	instagram_account
1	Oliver	Lee	oliverlee@…	123-456-7890	<null>	google.com/oliver…	instagram.com/oliver…
2	Sofia	Nguyen	sofianguye…	234-567-8901	fb.com/sofianguyen	google.com/sofian…	<null>
3	William	Garcia	williamgar…	345-678-9012	fb.com/williamgarcia	<null>	instagram.com/willia…
4	Chloe	Kim	chloekim@e…	456-789-0123	<null>	<null>	<null>
5	Alejandro	Martinez	alejandrom…	567-890-1234	fb.com/alejandromar…	google.com/alejan…	instagram.com/alejan…
6	Samantha	Patel	samanthapa…	678-901-2345	<null>	google.com/samant…	instagram.com/samant…
7	Matteo	Rossi	matteoross…	789-012-3456	fb.com/matteorossi	google.com/matteo…	<null>
8	Isabella	Lopez	isabellalo…	890-123-4567	fb.com/isabellalopez	<null>	instagram.com/isabel…
9	Muhammad	Ahmed	muhammadah…	901-234-5678	fb.com/muhammadahmed	google.com/muhamm…	instagram.com/muhamm…
10	Sofie	Hansen	sofiehanse…	012-345-6789	<null>	<null>	<null>
11	Jin-Soo	Kim	jinsookim@…	123-456-7890	<null>	google.com/jinsoo…	instagram.com/jinsoo…
12	Amelia	Nguyen	amelianuye…	234-567-8901	fb.com/amelianuyen	google.com/amelia…	<null>
13	Lucas	Martinez	lucasmarti…	345-678-9012	fb.com/lucasmartinez	google.com/lucasm…	instagram.com/lucasm…
14	Steven	He	steven.he@…	567-451-1234	fb.com/stevenhee	<null>	instagram.com/steven…
15	Michael	Brown	michael.br…	123-758-7890	fb.com/michaelbrown	google.com/michae…	<null>
16	Emily	Anderson	emily.ande…	524-245-3010	<null>	google.com/emilya…	instagram.com/emilya…
17	Christopher	Smith	christophe…	352-567-8901	fb.com/christophers…	google.com/christ…	<null>
18	Sarah	Taylor	sarah.tayl…	524-714-2911	fb.com/sarahtaylor	<null>	<null>
19	Olivia	Jones	olivia.jon…	789-1050-3456	fb.com/oliviajones	google.com/olivia…	instagram.com/olivia…
20	John	Garcia	john.garci…	614-245-2913	<null>	google.com/johnga…	<null>

```sql
CREATE TABLE GUESTS
(
    GUEST_ID          SERIAL  NOT NULL UNIQUE,
    FIRST_NAME        VARCHAR NOT NULL,
    LAST_NAME         VARCHAR NOT NULL,
    EMAIL             VARCHAR NOT NULL,
    PHONE_NUMBER      VARCHAR NOT NULL,
    FACEBOOK_ACCOUNT  VARCHAR,
    GOOGLE_ACCOUNT    VARCHAR,
    INSTAGRAM_ACCOUNT VARCHAR,
    PRIMARY KEY (GUEST_ID)
)
```

Guests

This entity stores information about guests.

id ▲ 1	first_language	second_language	third_language	fourth_language	fifth_language	host_id
1	Arabic	French	English	Spanish	<null>	2
2	Arabic	English	<null>	<null>	<null>	13
3	Chinese	Japanese	English	<null>	<null>	10
4	English	<null>	<null>	<null>	<null>	8
5	English	Norwegian	<null>	<null>	<null>	9
6	English	<null>	<null>	<null>	<null>	17
7	English	<null>	<null>	<null>	<null>	18
8	English	<null>	<null>	<null>	<null>	20
9	French	Spanish	English	<null>	<null>	7
10	German	English	<null>	<null>	<null>	1
11	German	English	Finnish	<null>	<null>	3
12	German	English	<null>	<null>	<null>	11
13	German	English	Dutch	<null>	<null>	15
14	Hindi	English	<null>	<null>	<null>	16
15	Italian	English	<null>	<null>	<null>	6
16	Italian	English	French	<null>	<null>	19
17	Japanese	English	<null>	<null>	<null>	14
18	Koran	English	<null>	<null>	<null>	4
19	Spanish	English	French	Portuguese	Italian	5
20	Spanish	English	Italian	French	Portuguese	12

```sql
CREATE TABLE HOSTS_LANGUAGES
(
    ID              SERIAL   NOT NULL UNIQUE,
    FIRST_LANGUAGE  VARCHAR  NOT NULL,
    SECOND_LANGUAGE VARCHAR,
    THIRD_LANGUAGE  VARCHAR,
    FOURTH_LANGUAGE VARCHAR,
    FIFTH_LANGUAGE  VARCHAR,
    HOST_ID         SMALLINT NOT NULL,
    PRIMARY KEY (ID),
    FOREIGN KEY (HOST_ID)
        REFERENCES HOSTS (HOST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Hosts_languages

This entity stores languages spoken by every host.

host_review_id	ranking	review	review_date	host_id
1	10	The guest was amazing! They went above and be…	2022-06-20 20:36:44.000000	2
2	6	The guest caused some damage and didn't repor…	2022-07-23 18:58:12.000000	16
3	10	The guest was fantastic! They left the place …	2022-07-26 23:24:09.000000	3
4	6	The guest was nice but left a few things out …	2022-08-15 20:17:51.000000	12
5	8	The guest was very clean and respectful. They…	2022-08-22 19:56:34.000000	2
6	6	The guest was pleasant but didn't follow one …	2022-09-07 19:28:10.000000	2
7	10	The guest was amazing! They were polite, frie…	2022-09-10 14:14:44.000000	17
8	3	The guest was a bit messy and didn't communic…	2022-09-10 17:38:44.000000	9
9	8	The guest was quiet and followed all the hous…	2022-10-16 22:53:01.000000	10
10	8	The guest was friendly and easy to communicat…	2022-10-17 19:52:01.000000	11
11	6	The guest was average. Nothing stood out as p…	2022-11-26 18:47:09.000000	13
12	9	The guest was great! No issues to report.	2022-11-26 21:13:47.000000	1
13	6	The guest was okay, but left some things out …	2022-12-19 19:49:03.000000	4
14	4	The guest caused some damage to the property …	2022-12-29 20:11:37.000000	19
15	8	The guest was polite and followed all the rul…	2023-01-14 17:56:18.000000	17
16	7	The guest was considerate and respectful. No …	2023-02-18 18:22:47.000000	8
17	8	The guest was courteous and tidy. They didn't…	2023-02-19 22:57:15.000000	15
18	9	The guest was wonderful! They left the place …	2023-03-28 20:11:16.000000	16
19	6	The guest was fine but left the place messier…	2023-04-15 20:12:19.000000	2
20	5	The guest was quite difficult to communicate …	2023-04-16 22:44:59.000000	20

```sql
CREATE TABLE HOSTS_REVIEWS
(
    HOST_REVIEW_ID SERIAL    NOT NULL UNIQUE,
    RANKING        SMALLINT  NOT NULL,
    REVIEW         TEXT      NOT NULL,
    REVIEW_DATE    TIMESTAMP NOT NULL,
    HOST_ID        SMALLINT  NOT NULL,
    PRIMARY KEY (HOST_REVIEW_ID),
    FOREIGN KEY (HOST_ID)
        REFERENCES HOSTS (HOST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Hosts_reviews

This entity stores hosts reviews on their guests.

guest_review_id	ranking	review	review_date	guest_id
1	8	The host was very friendly and accommodating. The property…	2022-06-20 14:12:00.000000	18
2	7	The host was helpful and responsive. The property was well…	2022-07-23 12:28:00.000000	4
3	9	The host was welcoming and went above and beyond to make o…	2022-07-26 20:34:00.000000	3
4	4	The host was unprofessional and the property was not clean…	2022-08-15 21:57:00.000000	5
5	9	The host was attentive and made sure we had everything we …	2022-08-22 14:46:00.000000	3
6	8	The host was knowledgeable about the area and provided gre…	2022-09-07 15:38:00.000000	10
7	7	The host was friendly and welcoming. The property was clea…	2022-09-10 12:34:00.000000	5
8	4	The host was unfriendly and unhelpful. The property was no…	2022-09-10 13:28:00.000000	13
9	8	The host was helpful and accommodating. The property had a…	2022-10-16 20:13:00.000000	11
10	9	The host was attentive and made sure we had everything we …	2022-10-17 21:22:00.000000	16
11	5	The host was unresponsive and the property was not well-ma…	2022-11-26 16:37:00.000000	8
12	10	The host was amazing and made us feel right at home. The p…	2022-11-26 23:43:00.000000	14
13	4	The host was unresponsive and the property was not as adve…	2022-12-19 21:59:00.000000	6
14	3	The host was accommodating and the property had a great lo…	2022-12-29 22:01:00.000000	19
15	6	The host was friendly and helpful. The property was clean …	2023-01-14 11:26:00.000000	20
16	6	The host was welcoming and provided great recommendations …	2023-02-18 19:12:00.000000	8
17	9	The host was incredibly accommodating and went above and b…	2023-02-19 20:47:00.000000	14
18	10	The host was exceptional and made our stay unforgettable. …	2023-03-28 23:51:00.000000	9
19	5	The host was unresponsive and the property was not well-ma…	2023-04-15 10:32:00.000000	19
20	5	The host was friendly and accommodating. The property was …	2023-04-16 12:44:00.000000	9

```sql
CREATE TABLE GUESTS_REVIEWS
(
    GUEST_REVIEW_ID SERIAL    NOT NULL UNIQUE,
    RANKING         SMALLINT  NOT NULL,
    REVIEW          TEXT      NOT NULL,
    REVIEW_DATE     TIMESTAMP NOT NULL,
    GUEST_ID        SMALLINT  NOT NULL,
    PRIMARY KEY (GUEST_REVIEW_ID),
    FOREIGN KEY (GUEST_ID)
        REFERENCES GUESTS (GUEST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Guests_reviews

This entity stores guests reviews on their hosts.

admin_id	first_name	last_name	email
1	Natalie	Green	natalie.green@gmail.com
2	Derrick	Rodriguez	derrick.rodriguez@yahoo.com
3	Carla	McPherson	carla.mcpherson@hotmail.com
4	Jordan	Alvarez	jordan.alvarez@gmail.com
5	Harvey	Saunders	harvey.saunders@hotmail.com
6	Katie	Brewer	katie.brewer@yahoo.com
7	Joey	Stevenson	joey.stevenson@gmail.com
8	Marina	Gonzalez	marina.gonzalez@hotmail.com
9	Nick	Nguyen	nick.nguyen@yahoo.com
10	Lila	Henderson	lila.henderson@gmail.com
11	Shawn	Robinson	shawn.robinson@hotmail.com
12	Maggie	Phillips	maggie.phillips@yahoo.com
13	Vincent	Lin	vincent.lin@gmail.com
14	April	Howard	april.howard@hotmail.com
15	Trevor	Peterson	trevor.peterson@yahoo.com
16	Leah	Chen	leah.chen@hotmail.com
17	Brandon	Kim	brandon.kim@gmail.com
18	Jasmine	King	jasmine.king@yahoo.com
19	Julio	Ortega	julio.ortega@hotmail.com
20	Samantha	Wang	samantha.wang@gmail.com

```sql
CREATE TABLE ADMINS
(
    ADMIN_ID   SERIAL  NOT NULL UNIQUE,
    FIRST_NAME VARCHAR NOT NULL,
    LAST_NAME  VARCHAR NOT NULL,
    EMAIL      VARCHAR NOT NULL,
    PRIMARY KEY (ADMIN_ID)
)
```

Admins

This entity stores information about administrators.

host_request_id	request_object	description	host_id	admin_id
1	Verification issues	I am having trouble with the verification process for my acco…	3	10
2	Malicious activities	My account has been hacked and unauthorized bookings have bee…	18	7
3	Missing luggage	One of my guests has left personal belongings behind. How can…	1	2
4	Blocked calendar	My calendar is showing unavailable dates, but I haven't block…	8	12
5	Extension of stay	I have received a request from a guest to extend their stay. …	17	10
6	Listing compliance	I have received a report that my listing is not complying wit…	10	7
7	Help with spam messages	I am receiving spam messages from potential guests. How can I…	9	4
8	Improvements methods	One of my guests has left a bad review. How can I improve my …	6	19
9	Contact issues	I need to contact a guest or host but I don't have their cont…	9	20
10	Help with listings	I am unable to edit my listing details, can you assist me?	8	17
11	Clarification	I received a notification that a guest has filed a chargeback…	12	18
12	An unfair review	I received a negative review from a guest which I believe is …	6	20
13	Pre-booking check	I have received a request from a potential guest for an early…	5	18
14	Refund issues	One of my guests is asking for a refund, but my cancellation …	3	14
15	Cancellation policy	I need to cancel a booking due to a family emergency. How can…	3	7
16	Technical issues	I am having trouble accessing the payment system. Can you hel…	3	15
17	Extra guest allowance	I have received a request from a guest to bring extra guests …	18	5
18	Translation services	I am receiving inquiries from guests in a language I don't un…	2	8
19	Damaged property	One of my guests has damaged my property. What steps should I…	12	6
20	Cancellation policy	I need to cancel a booking due to unforeseen circumstances. C…	1	2

```sql
CREATE TABLE HOSTS_SUPPORT_REQUESTS
(
    HOST_REQUEST_ID SERIAL   NOT NULL UNIQUE,
    REQUEST_OBJECT  VARCHAR  NOT NULL,
    DESCRIPTION     TEXT     NOT NULL,
    HOST_ID         SMALLINT NOT NULL,
    ADMIN_ID        SMALLINT NOT NULL,
    PRIMARY KEY (HOST_REQUEST_ID),
    FOREIGN KEY (HOST_ID)
        REFERENCES HOSTS (HOST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (ADMIN_ID)
        REFERENCES ADMINS (ADMIN_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Hosts_support_requests

This entity stores support requests formulated by hosts.

host_request_id	request_object	description	host_id	admin_id
1	Verification issues	I am having trouble with the verification process for my acco…	3	10
2	Malicious activities	My account has been hacked and unauthorized bookings have bee…	18	7
3	Missing luggage	One of my guests has left personal belongings behind. How can…	1	2
4	Blocked calendar	My calendar is showing unavailable dates, but I haven't block…	8	12
5	Extension of stay	I have received a request from a guest to extend their stay. …	17	10
6	Listing compliance	I have received a report that my listing is not complying wit…	10	7
7	Help with spam messages	I am receiving spam messages from potential guests. How can I…	9	4
8	Improvements methods	One of my guests has left a bad review. How can I improve my …	6	19
9	Contact issues	I need to contact a guest or host but I don't have their cont…	9	20
10	Help with listings	I am unable to edit my listing details, can you assist me?	8	17
11	Clarification	I received a notification that a guest has filed a chargeback…	12	18
12	An unfair review	I received a negative review from a guest which I believe is …	6	20
13	Pre-booking check	I have received a request from a potential guest for an early…	5	18
14	Refund issues	One of my guests is asking for a refund, but my cancellation …	3	14
15	Cancellation policy	I need to cancel a booking due to a family emergency. How can…	3	7
16	Technical issues	I am having trouble accessing the payment system. Can you hel…	3	15
17	Extra guest allowance	I have received a request from a guest to bring extra guests …	18	5
18	Translation services	I am receiving inquiries from guests in a language I don't un…	2	8
19	Damaged property	One of my guests has damaged my property. What steps should I…	12	6
20	Cancellation policy	I need to cancel a booking due to unforeseen circumstances. C…	1	2

```sql
CREATE TABLE GUESTS_SUPPORT_REQUESTS
(
    GUEST_REQUEST_ID SERIAL   NOT NULL UNIQUE,
    REQUEST_OBJECT   VARCHAR  NOT NULL,
    DESCRIPTION      TEXT     NOT NULL,
    GUEST_ID         SMALLINT NOT NULL,
    ADMIN_ID         SMALLINT NOT NULL,
    PRIMARY KEY (GUEST_REQUEST_ID),
    FOREIGN KEY (GUEST_ID)
        REFERENCES GUESTS (GUEST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (ADMIN_ID)
        REFERENCES ADMINS (ADMIN_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Guests_support_requests

This entity stores support requests formulated by guests.

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

```sql
CREATE TABLE CONVERSATIONS
(
    CONVERSATION_ID SERIAL   NOT NULL UNIQUE,
    GUEST_ID        SMALLINT NOT NULL,
    HOST_ID         SMALLINT NOT NULL,
    PRIMARY KEY (CONVERSATION_ID),
    FOREIGN KEY (GUEST_ID)
        REFERENCES GUESTS (GUEST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (HOST_ID)
        REFERENCES HOSTS (HOST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Conversations

This entity stores conversations between guests and hosts.

host_message_id	message_corp	message_timestamp	conversation_id
1	I am having an issue with my reservation. Can you help me?	2023-04-10 08:10:00.000000	17
2	I have an emergency situation at the property. What should I do?	2023-04-10 10:33:00.000000	16
3	I am confused about some extra fees on my bill. Can you explain the…	2023-04-11 15:22:00.000000	6
4	There is a problem with the amenities or facilities. Can you help m…	2023-04-12 09:29:00.000000	15
5	I am having trouble with the booking process. Can you assist me?	2023-04-13 11:44:00.000000	18
6	The host and other guests are behaving badly. What should I do?	2023-04-14 09:09:00.000000	7
7	I want to extend my stay. Can you help me?	2023-04-16 12:52:00.000000	5
8	I disagree with the damages charge on my bill. Can you help me disp…	2023-04-17 07:23:00.000000	4
9	I can't reach the host. Can you help me get in touch with them?	2023-04-19 11:08:00.000000	19
10	There was a natural disaster that affected my stay. Can I get a ref…	2023-04-19 14:41:00.000000	1
11	There is a problem with the property during my stay. Can you help m…	2023-04-20 06:29:00.000000	3
12	Hi there, I was wondering if I could add an extra guest to my reser…	2023-04-21 09:43:00.000000	8
13	I'm having an issue with my payment for the reservation. Could you …	2023-04-22 07:36:00.000000	20
14	I seem to have misplaced my access code or key. Could you assist me…	2023-04-22 12:21:00.000000	2
15	I'm afraid there's an issue with the cleanliness of the property. C…	2023-04-24 09:42:00.000000	14
16	I'm interested in booking the property. Could you provide me with s…	2023-04-24 12:17:00.000000	9
17	I need to modify my reservation dates. Could you assist me with tha…	2023-04-25 06:47:00.000000	10
18	I'm having trouble checking in to my reservation. Could you help me…	2023-04-27 14:08:00.000000	13
19	I recently stayed at a property and found that it did not match the…	2023-04-28 12:47:00.000000	12
20	I need to cancel my reservation. Could you help me with that please?	2023-04-29 08:47:00.000000	11

```sql
CREATE TABLE HOSTS_MAILBOX
(
    HOST_MESSAGE_ID   SERIAL    NOT NULL UNIQUE,
    MESSAGE_CORP      TEXT      NOT NULL,
    MESSAGE_TIMESTAMP TIMESTAMP NOT NULL,
    CONVERSATION_ID   SMALLINT  NOT NULL,
    PRIMARY KEY (HOST_MESSAGE_ID),
    FOREIGN KEY (CONVERSATION_ID)
        REFERENCES CONVERSATIONS (CONVERSATION_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Hosts_mailbox

This entity stores the host’s messages.

guest_message_id	message_corp	message_timestamp	conversation_id
1	I am sorry to hear about the emergency situation at the property. …	2023-04-11 12:45:00.000000	16
2	Thank you for letting me know about the issue with the reservation…	2023-04-12 09:30:00.000000	17
3	I apologize for the confusion. Can you provide me with more inform…	2023-04-13 16:00:00.000000	6
4	Thank you for letting me know about the issue with the booking pro…	2023-04-14 13:30:00.000000	18
5	I am sorry to hear that you are experiencing an issue with the ame…	2023-04-15 11:15:00.000000	15
6	I am sorry to hear about the behavior of the host or other guests.…	2023-04-16 11:25:00.000000	7
7	Certainly! Please let me know the new dates that you would like to…	2023-04-17 14:00:00.000000	5
8	Thank you for letting me know about the issue with the damages cha…	2023-04-18 09:45:00.000000	4
9	I apologize for the inconvenience. Please provide me with your res…	2023-04-19 12:30:00.000000	19
10	I am sorry to hear about the natural disaster or unforeseen event.…	2023-04-20 16:00:00.000000	1
11	I am sorry to hear that you have encountered a problem with the pr…	2023-04-21 08:15:00.000000	3
12	Certainly! Please let me know the number of extra guests or pets t…	2023-04-22 11:30:00.000000	8
13	Thank you for letting me know about the payment issue. Please prov…	2023-04-23 15:00:00.000000	2
14	I am sorry to hear that you have lost your access code or key. I w…	2023-04-24 10:45:00.000000	20
15	I apologize for the inconvenience. I will work with you and the ho…	2023-04-25 14:15:00.000000	9
16	I would be happy to provide you with more information about the am…	2023-04-26 12:30:00.000000	14
17	Thank you for reaching out. I can assist you with modifying your r…	2023-04-27 09:00:00.000000	10
18	I am sorry to hear that you are unable to check in. Please provide…	2023-04-28 16:30:00.000000	13
19	Thank you for bringing this to my attention. Can you provide me wi…	2023-04-29 13:45:00.000000	12
20	Hello, thank you for reaching out. I apologize for the inconvenien…	2023-04-30 10:15:00.000000	11

```sql
CREATE TABLE GUESTS_MAILBOX
(
    GUEST_MESSAGE_ID  SERIAL    NOT NULL UNIQUE,
    MESSAGE_CORP      TEXT      NOT NULL,
    MESSAGE_TIMESTAMP TIMESTAMP NOT NULL,
    CONVERSATION_ID   SMALLINT  NOT NULL,
    PRIMARY KEY (GUEST_MESSAGE_ID),
    FOREIGN KEY (CONVERSATION_ID)
        REFERENCES CONVERSATIONS (CONVERSATION_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Guests_mailbox

This entity stores the guest's messages.

city_id	city	country	continent
1	Sydney	Australia	Australia
2	Rio de Janeiro	Brazil	South America
3	Toronto	Canada	North America
4	Cairo	Egypt	Africa
5	Paris	France	Europe
6	Berlin	Germany	Europe
7	Mumbai	India	Asia
8	Rome	Italy	Europe
9	Tokyo	Japan	Asia
10	New York	United States	North America
11	Amsterdam	Netherlands	Europe
12	London	United Kingdom	Europe
13	Athens	Greece	Europe
14	Harbin	China	Asia
15	Barcelona	Spain	Europe
16	Shanghai	China	Asia
17	Melbourne	Australia	Australia
18	Marrakesh	Morocco	Africa
19	Seoul	South Korea	Asia
20	Casablanca	Morocco	Africa

```sql
CREATE TABLE CITIES
(
    CITY_ID   SERIAL  NOT NULL UNIQUE,
    CITY      VARCHAR NOT NULL,
    COUNTRY   VARCHAR NOT NULL,
    CONTINENT VARCHAR NOT NULL,
    PRIMARY KEY (CITY_ID)
)
```

Cities

This entity stores the cities where the properties are located.

address_id	address_line	zip_code	city_id
1	078 Collins St	3000	10
2	517 Fifth Ave	10017	10
3	615 Sheikh Zayed Road	5544	18
4	121 Main St	90210	17
5	062 Avenue des Champs-Elysees	75008	5
6	102 Yonge Street	M5B 1N9	3
7	55 Songhe St	110013	14
8	019 Rue Tariq Ibn Ziyad	20050	18
9	416 Queen Street	1010	12
10	365 Victoria Road	8001	13
11	787 Friedrichstrasse	10117	6
12	403 Derb Salihine	1540	20
13	109 Damstraat	1012 JL	11
14	416 Salah Salem Street	11762	4
15	095 Copacabana Beach	22070-011	2
16	259 Karl Johans gate	154	6
17	430 Tverskaya Street	125009	16
18	157 George Street	2000	1
19	456 Via del Corso	187	8
20	421 La Rambla	8002	2

```sql
CREATE TABLE ADDRESSES
(
    ADDRESS_ID   SERIAL   NOT NULL UNIQUE,
    ADDRESS_LINE VARCHAR  NOT NULL,
    ZIP_CODE     VARCHAR  NOT NULL,
    CITY_ID      SMALLINT NOT NULL,
    PRIMARY KEY (ADDRESS_ID),
    FOREIGN KEY (CITY_ID)
        REFERENCES CITIES (CITY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Addresses

This entity stores the addresses where the properties are located.

property_id	property_name	property_type	rented_place	address_id	host_id
1	Cozy Cottage	House	Entire Place	1	9
2	Beachfront Condo	Apartment	Entire Place	2	17
3	Riyad El Hemma	House	Entire Place	3	2
4	Rustic Cabin	House	Entire Place	4	9
5	Luxury Villa	House	Shared Room	5	7
6	La Grounde	Hotel	Private Room	6	14
7	Classic Victorian	House	Shared Room	7	10
8	Riyad Oum Hani	House	Entire Place	8	2
9	Quaint Bungalow	House	Entire Place	9	17
10	Cozy Studio	Apartment	Private Room	10	19
11	Modern Townhouse	House	Shared Room	11	11
12	Stylish Loft	Apartment	Entire Place	12	2
13	Seaside Cottage	House	Entire Place	13	20
14	Spacious Condo	Apartment	Entire Place	14	13
15	Vintage Apartment	Apartment	Private Room	15	12
16	Country Farmhouse	House	Entire Place	16	15
17	Cozy Chalet	House	Entire Place	17	18
18	Stylish Penthouse	Apartment	Shared Room	18	8
19	Lakeside Cabin	House	Entire Place	19	12
20	The Bungalow	Hotel	Private Room	20	5

```sql
CREATE TABLE PROPERTIES
(
    PROPERTY_ID   SERIAL   NOT NULL UNIQUE,
    PROPERTY_NAME VARCHAR  NOT NULL,
    PROPERTY_TYPE VARCHAR  NOT NULL,
    RENTED_PLACE  VARCHAR  NOT NULL,
    ADDRESS_ID    SMALLINT NOT NULL,
    HOST_ID       SMALLINT NOT NULL,
    PRIMARY KEY (PROPERTY_ID),
    FOREIGN KEY (ADDRESS_ID)
        REFERENCES ADDRESSES (ADDRESS_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (HOST_ID)
        REFERENCES HOSTS (HOST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Properties

This entity stores information about the properties.

id ▲ 1	number_of_beds	number_of_bedrooms	number_of_bathrooms	property_id
1	1	1	1	5
2	1	1	1	6
3	1	1	1	7
4	1	1	1	11
5	1	1	1	18
6	1	1	1	20
7	1	1	1	21
8	1	1	1	24
9	1	1	1	25
10	1	1	1	28
11	2	1	1	10
12	2	1	1	15
13	2	1	1	26
14	2	1	1	29
15	3	1	1	17
16	2	2	1	9
17	3	2	1	1
18	3	2	1	12
19	3	2	1	22
20	4	2	1	13

```sql
CREATE TABLE BEDS_AND_ROOMS
(
    ID                  SERIAL   NOT NULL UNIQUE,
    NUMBER_OF_BEDS      SMALLINT NOT NULL,
    NUMBER_OF_BEDROOMS  SMALLINT NOT NULL,
    NUMBER_OF_BATHROOMS SMALLINT NOT NULL,
    PROPERTY_ID         SMALLINT NOT NULL,
    PRIMARY KEY (ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Beds_and_rooms

This entity stores information of beds and rooms in the properties.

capacity_id	adults	children	infants	pets	property_id
1	1	0	1	1	6
2	1	1	0	1	24
3	2	1	0	2	1
4	2	0	1	1	5
5	2	0	0	1	7
6	2	1	0	2	9
7	2	0	1	1	10
8	2	0	0	1	11
9	2	1	0	2	12
10	2	2	1	1	13
11	2	2	1	1	14
12	2	0	1	1	15
13	2	0	2	1	16
14	2	1	0	0	17
15	2	0	0	2	18
16	2	2	0	1	19
17	2	0	0	0	20
18	2	0	0	1	21
19	2	0	1	2	22
20	2	2	0	2	23

```sql
CREATE TABLE PROPERTIES_CAPACITIES
(
    CAPACITY_ID SERIAL   NOT NULL UNIQUE,
    ADULTS      SMALLINT NOT NULL,
    CHILDREN    SMALLINT DEFAULT 0,
    INFANTS     SMALLINT DEFAULT 0,
    PETS        SMALLINT DEFAULT 0,
    PROPERTY_ID SMALLINT NOT NULL,
    PRIMARY KEY (CAPACITY_ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Properties_capacities

This entity stores information about the capacity of the properties.

essential_id	wifi	wa...	air...	ded...	iron	kitchen	tv	dryer	heating	property_id
1	true	true	true	true	false	true	true	true	true	2
2	true	true	true	true	false	true	true	true	true	12
3	true	true	true	true	false	true	true	true	true	16
4	true	true	true	true	false	true	true	true	true	27
5	true	true	true	true	true	true	true	true	true	1
6	true	false	true	true	true	true	true	true	true	3
7	true	true	true	true	true	true	true	true	true	4
8	true	false	false	false	true	false	true	true	true	5
9	true	false	false	false	true	false	true	true	true	6
10	true	false	false	true	true	false	true	true	true	7
11	true	false	true	false	true	true	true	true	true	8
12	true	false	true	true	true	true	true	false	true	9
13	true	false	false	false	true	false	true	true	true	10
14	true	false	false	false	true	false	true	true	true	11
15	true	true	true	true	true	true	false	true	true	13
16	true	false	true	false	true	true	true	true	true	14
17	true	false	false	false	true	false	true	true	true	15
18	true	true	false	false	true	true	true	true	true	17
19	true	false	false	true	true	false	true	true	true	18
20	true	false	true	true	true	false	true	true	true	19

```sql
CREATE TABLE PROPERTIES_ESSENTIALS
(
    ESSENTIAL_ID        SERIAL   NOT NULL UNIQUE,
    WIFI                BOOLEAN DEFAULT FALSE,
    WASHER              BOOLEAN DEFAULT FALSE,
    AIR_CONDITIONING    BOOLEAN DEFAULT FALSE,
    DEDICATED_WORKPLACE BOOLEAN DEFAULT FALSE,
    IRON                BOOLEAN DEFAULT FALSE,
    KITCHEN             BOOLEAN DEFAULT FALSE,
    TV                  BOOLEAN DEFAULT FALSE,
    DRYER               BOOLEAN DEFAULT FALSE,
    HEATING             BOOLEAN DEFAULT FALSE,
    PROPERTY_ID         SMALLINT NOT NULL,
    PRIMARY KEY (ESSENTIAL_ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Properties_essentials

This entity stores the essential options of the properties.

feature_id	gym	pool	parking	breakfast	indoor_fireplace	pets_allowed	smoking_allowed	property_id
1	false	false	false	false	false	true	false	2
2	false	true	false	true	false	true	true	5
3	true	true	false	true	false	true	false	7
4	true	true	false	true	false	true	false	9
5	false	true	true	false	false	true	false	10
6	false	false	false	false	false	true	false	12
7	true	true	true	true	false	true	false	13
8	true	true	true	false	false	true	false	14
9	false	true	false	false	false	true	false	15
10	false	true	true	true	false	true	false	16
11	false	true	true	true	false	false	false	17
12	false	true	false	true	false	true	false	18
13	false	true	true	false	false	true	false	22
14	false	true	true	false	false	true	false	23
15	false	false	false	false	false	true	true	24
16	true	true	true	false	false	true	false	27
17	false	false	false	false	false	true	false	29
18	true	true	true	false	false	true	false	30
19	true	true	true	true	true	true	false	1
20	true	true	true	false	true	true	false	3

```sql
CREATE TABLE PROPERTIES_FEATURES
(
    FEATURE_ID       SERIAL   NOT NULL UNIQUE,
    GYM              BOOLEAN DEFAULT FALSE,
    POOL             BOOLEAN DEFAULT FALSE,
    PARKING          BOOLEAN DEFAULT FALSE,
    BREAKFAST        BOOLEAN DEFAULT FALSE,
    INDOOR_FIREPLACE BOOLEAN DEFAULT FALSE,
    PETS_ALLOWED     BOOLEAN DEFAULT FALSE,
    SMOKING_ALLOWED  BOOLEAN DEFAULT FALSE,
    PROPERTY_ID      SMALLINT NOT NULL,
    PRIMARY KEY (FEATURE_ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Properties_features

This entity stores the featured option of the properties.

fees_id	stay_fees	cleaning_fees	service_fees	property_id
1	10.99	3.99	1.099	5
2	10.99	3.99	1.099	7
3	10.99	3.99	1.099	11
4	10.99	3.99	1.099	18
5	10.99	3.99	1.099	21
6	10.99	3.99	1.099	25
7	10.99	3.99	1.099	26
8	12.99	7.99	1.299	10
9	12.99	7.99	1.299	15
10	12.99	7.99	1.299	24
11	12.99	7.99	1.299	28
12	14.99	7.99	1.499	6
13	14.99	7.99	1.499	20
14	14.99	7.99	1.499	29
15	34.99	10.99	3.499	2
16	34.99	10.99	3.499	12
17	34.99	10.99	3.499	14
18	34.99	10.99	3.499	27
19	34.99	10.99	3.499	30
20	49.99	10.99	4.999	1

```sql
CREATE TABLE PROPERTIES_FEES
(
    FEES_ID       SERIAL   NOT NULL UNIQUE,
    STAY_FEES     DECIMAL  NOT NULL,
    CLEANING_FEES DECIMAL  NOT NULL,
    SERVICE_FEES  DECIMAL  NOT NULL,
    PROPERTY_ID   SMALLINT NOT NULL,
    PRIMARY KEY (FEES_ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Properties_fees

This entity stores the fees of the properties.

image_id	image_link	property_id
1	www.storagesite.com/image9_1.png	9
2	www.storagesite.com/image26_2.png	26
3	www.storagesite.com/image29_2.png	29
4	www.storagesite.com/image6_1.png	6
5	www.storagesite.com/image22_1.png	22
6	www.storagesite.com/image21_2.png	21
7	www.storagesite.com/image6_2.png	6
8	www.storagesite.com/image17_2.png	17
9	www.storagesite.com/image25_2.png	25
10	www.storagesite.com/image14_1.png	14
11	www.storagesite.com/image3_1.png	3
12	www.storagesite.com/image23_2.png	23
13	www.storagesite.com/image2_1.png	2
14	www.storagesite.com/image12_2.png	12
15	www.storagesite.com/image7_1.png	7
16	www.storagesite.com/image5_1.png	5
17	www.storagesite.com/image28_1.png	28
18	www.storagesite.com/image15_2.png	15
19	www.storagesite.com/image30_1.png	30
20	www.storagesite.com/image2_2.png	2

```sql
CREATE TABLE PROPERTY_IMAGES
(
    IMAGE_ID    SERIAL   NOT NULL UNIQUE,
    IMAGE_LINK  VARCHAR  NOT NULL,
    PROPERTY_ID SMALLINT NOT NULL,
    PRIMARY KEY (IMAGE_ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Properties_images

This entity stores links to the images of the properties.

reservation_id	check_in	check_out	confirmed	property_id	guest_id
1	2022-06-16	2022-06-19	• true	8	18
2	2022-07-20	2022-07-24	false	23	16
3	2022-07-21	2022-07-22	• true	25	4
4	2022-07-22	2022-07-25	• true	24	3
5	2022-08-09	2022-08-21	• true	12	3
6	2022-08-11	2022-08-14	• true	19	5
7	2022-08-12	2022-08-15	false	20	15
8	2022-09-01	2022-09-06	• true	3	10
9	2022-09-05	2022-09-09	• true	1	13
10	2022-09-06	2022-09-09	• true	2	5
11	2022-10-10	2022-10-15	• true	7	11
12	2022-10-13	2022-10-16	• true	11	16
13	2022-11-08	2022-11-10	false	3	2
14	2022-11-18	2022-11-25	• true	27	14
15	2022-11-21	2022-11-25	• true	22	8
16	2022-12-12	2022-12-18	• true	28	6
17	2022-12-22	2022-12-28	• true	10	19
18	2023-01-05	2023-01-11	false	8	1
19	2023-01-10	2023-01-13	• true	9	20
20	2023-02-04	2023-02-17	• true	18	8

```sql
CREATE TABLE RESERVATIONS
(
    RESERVATION_ID SERIAL   NOT NULL UNIQUE,
    CHECK_IN       DATE     NOT NULL,
    CHECK_OUT      DATE     NOT NULL,
    CONFIRMED      BOOLEAN DEFAULT FALSE,
    PROPERTY_ID    SMALLINT NOT NULL,
    GUEST_ID       SMALLINT NOT NULL,
    PRIMARY KEY (RESERVATION_ID),
    FOREIGN KEY (PROPERTY_ID)
        REFERENCES PROPERTIES (PROPERTY_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (GUEST_ID)
        REFERENCES GUESTS (GUEST_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CHECK (CHECK_IN < CHECK_OUT)
)
```

Reservations

This entity stores information about the reservations.

booking_id	reservation_id
1	1
2	3
3	4
4	5
5	6
6	8
7	9
8	10
9	11
10	12
11	14
12	15
13	16
14	17
15	19
16	20
17	21
18	23
19	24
20	25

```sql
CREATE TABLE BOOKINGS_CONFIRMATION
(
    BOOKING_ID     SERIAL   NOT NULL UNIQUE,
    RESERVATION_ID SMALLINT NOT NULL,
    PRIMARY KEY (BOOKING_ID),
    FOREIGN KEY (RESERVATION_ID)
        REFERENCES RESERVATIONS (RESERVATION_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Bookings_confirmation

This entity stores information about the confirmed reservations and became confirmed bookings.

revenue_id	from_host	from_guest	total_per_booking	booking_id
1	0.33	1.5	1.83	2
2	0.66	2.6	3.26	18
3	0.99	3.7	4.69	10
4	1.17	4.7	5.87	3
5	1.65	5.89	7.54	9
6	2.34	8.59	10.93	13
7	2.34	8.59	10.93	14
8	3.15	11.6	14.75	8
9	4.29	14.69	18.97	16
10	4.2	15.1	19.29	19
11	4.5	16.1	20.6	1
12	4.5	16.1	20.6	5
13	4.5	16.1	20.6	15
14	4.5	16.1	20.6	17
15	4.5	16.1	20.6	20
16	6	21.1	27.09	7
17	6	21.1	27.09	12
18	7.35	25.59	32.94	11
19	7.5	26.09	33.59	6
20	12.6	43.09	55.68	4

```sql
CREATE TABLE PLATFORM_REVENUE
(
    REVENUE_ID        SERIAL   NOT NULL UNIQUE,
    FROM_HOST         DECIMAL  NOT NULL,
    FROM_GUEST        DECIMAL  NOT NULL,
    TOTAL_PER_BOOKING DECIMAL  NOT NULL,
    BOOKING_ID        SMALLINT NOT NULL,
    PRIMARY KEY (REVENUE_ID),
    FOREIGN KEY (BOOKING_ID)
        REFERENCES BOOKINGS_CONFIRMATION (BOOKING_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Platfrom_revenue

This entity stores information about the revenue of the platform.

payout_id ▲ 1	payout	booking_id
1	10.6603	2
2	21.3206	18
3	31.9809	10
4	37.8009	3
5	53.3015	9
6	75.6018	13
7	75.6018	14
8	101.8209	8
9	135.7612	19
10	138.5839	16
11	145.4709	1
12	145.4709	5
13	145.4709	15
14	145.4709	17
15	145.4709	20
16	193.9612	7
17	193.9612	12
18	237.5821	11
19	242.4515	6
20	407.2836	4

```sql
CREATE TABLE HOSTS_PAYOUT
(
    PAYOUT_ID  SERIAL   NOT NULL UNIQUE,
    PAYOUT     DECIMAL  NOT NULL,
    BOOKING_ID SMALLINT NOT NULL,
    PRIMARY KEY (PAYOUT_ID),
    FOREIGN KEY (BOOKING_ID)
        REFERENCES BOOKINGS_CONFIRMATION (BOOKING_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Hosts_payout

This entity stores information about the payout of hosts.

payment_id	total_pay	booking_id
1	16.478	2
2	28.567	18
3	40.656	10
4	51.656	3
5	64.834	9
6	94.523	13
7	94.523	14
8	127.556	8
9	161.546	16
10	166.045	19
11	177.056	1
12	177.056	5
13	177.056	15
14	177.056	17
15	177.056	20
16	232.045	7
17	232.045	12
18	281.512	11
19	287.034	6
20	473.957	4

```sql
CREATE TABLE GUESTS_PAYMENTS
(
    PAYMENT_ID SERIAL   NOT NULL UNIQUE,
    TOTAL_PAY  DECIMAL  NOT NULL,
    BOOKING_ID SMALLINT NOT NULL,
    PRIMARY KEY (PAYMENT_ID),
    FOREIGN KEY (BOOKING_ID)
        REFERENCES BOOKINGS_CONFIRMATION (BOOKING_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
)
```

Guests_payments

This entity stores information about the payments of guests.

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

```sql
CREATE TABLE BOOKINGS_HISTORY
(
    ARCHIVE_ID      SERIAL   NOT NULL UNIQUE,
    GUEST_REVIEW_ID SMALLINT NOT NULL,
    HOST_REVIEW_ID  SMALLINT NOT NULL,
    BOOKING_ID      SMALLINT NOT NULL,
    PRIMARY KEY (ARCHIVE_ID),
    FOREIGN KEY (GUEST_REVIEW_ID)
        REFERENCES GUESTS_REVIEWS (GUEST_REVIEW_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (HOST_REVIEW_ID)
        REFERENCES HOSTS_REVIEWS (HOST_REVIEW_ID)
        ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (BOOKING_ID)
        REFERENCES BOOKINGS_CONFIRMATION (BOOKING_ID)
        ON DELETE CASCADE ON UPDATE CASCADE
);
```

Bookings_history

This entity stores information about the booking's history.

Test cases

Test case n°1

Suppose that we want to see how much support requests they get from hosts and guests, and we would like to see which administrator is handling more requests.

```sql
SELECT C.first_name, C.last_name,
       A.received_hosts_requests, B.received_guests_requests,
       SUM(A.received_hosts_requests + B.received_guests_requests) AS total_requests
FROM (SELECT admin_id, COUNT(*) AS received_hosts_requests
      FROM main.hosts_support_requests GROUP BY admin_id) AS A
        JOIN (SELECT admin_id, COUNT(*) AS received_guests_requests FROM main.guests_support_requests
              GROUP BY admin_id) AS B ON A.admin_id = B.admin_id
        JOIN (SELECT admin_id, first_name, last_name FROM main.admins) AS C ON A.admin_id = C.admin_id
 GROUP BY C.first_name, C.last_name, A.received_hosts_requests, B.received_guests_requests
ORDER BY total_requests DESC;
```

Output | Result 9

20 rows | CSV

	first_name	last_name	received_hosts_requests	received_guests_requests	total_requests
1	Joey	Stevenson	4	3	7
2	Jasmine	King	2	3	5
3	Marina	Gonzalez	1	4	5
4	Samantha	Wang	2	1	3
5	Lila	Henderson	2	1	3
6	Nick	Nguyen	1	2	3
7	Maggie	Phillips	1	2	3
8	Jordan	Alvarez	2	1	3
9	Leah	Chen	2	1	3
10	Derrick	Rodriguez	2	1	3

Test case n°2

Alright, to avoid having Joey doing all the work. They administrators are willing form a team and each team manages the work in only one continent.

```sql
SELECT A.property_name, B.address_line, C.city, C.country, C.continent
FROM (SELECT property_id, property_name, address_id
            FROM main.properties ) AS A
        JOIN (SELECT address_id, address_line, city_id FROM main.addresses )
            AS B ON A.address_id = B.address_id
        JOIN (SELECT city_id, city, country, continent FROM main.cities)
            AS C ON B.city_id = C.city_id
ORDER BY C.continent;
```

Output | Result 12 | Result 11-2 | airbnb.main.properties_fees

29 rows

	property_name	address_line	city	country	continent
1	Riyad MAATAOUI	183 Boulevard Mohammed V	Marrakesh	Morocco	Africa
2	Riyad Oum Hani	019 Rue Tariq Ibn Ziyad	Marrakesh	Morocco	Africa
3	Riyad El Hemma	615 Sheikh Zayed Road	Marrakesh	Morocco	Africa
4	Spacious Townhouse	406 Derb Jamaa	Casablanca	Morocco	Africa
5	Stylish Loft	403 Derb Salihine	Casablanca	Morocco	Africa
6	Spacious Condo	416 Salah Salem Street	Cairo	Egypt	Africa
7	Cozy Chalet	430 Tverskaya Street	Shanghai	China	Asia
8	Mountain Chalet	389 Shibuya Crossing	Tokyo	Japan	Asia
9	Luxury Penthouse	675 Gangnam-daero	Seoul	South Korea	Asia
10	Classic Victorian	55 Songhe St	Harbin	China	Asia

Test case n°3

For analytical reasons, we would like to investigate the income the platform made in the first trimester of this year.

```sql
SELECT D.property_id, D.property_name, A.total_per_booking
FROM (SELECT revenue_id, total_per_booking, booking_id
      FROM main.platform_revenue) AS A
          JOIN (SELECT booking_id, reservation_id FROM main.bookings_confirmation)
      AS B ON A.booking_id = B.booking_id
          JOIN (SELECT reservation_id, property_id
                FROM main.reservations
                WHERE check_in > DATE('2023-01-01') AND check_out < DATE('2023-05-01'))
      AS C ON B.reservation_id = C.reservation_id
          JOIN (SELECT property_id, property_name FROM main.properties)
      AS D ON C.property_id = D.property_id
ORDER BY A.total_per_booking DESC;
```

Output | Result 3

6 rows

	property_id	property_name	total_per_booking
1	9	Quaint Bungalow	20.6
2	13	Seaside Cottage	20.6
3	16	Country Farmhouse	20.6
4	12	Stylish Loft	19.29
5	18	Stylish Penthouse	18.97
6	25	Modern Villa	3.26

List of entities

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Guests ..... Slide 05
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Conclusion

- Throughout the development phase, we were able to spot many flaws concerning the datatypes of attributes which were later optimized to enhance performance and reduce latency.
- A convenient documentation of the database were formulated simultaneously and it's available in GitHub.

Available on

GitHub

https://github.com/Alianger18/Projects_Portfolio

Reference

Background – Slide 1:
Image by benzoix on Freepik. URL : https://www.freepik.com/free-photo/server-racks-computer-network-security-server-room-data-center-d-render-dark-blue-generative-ai_38095230.htm