Project Phase 2
Major Cineplex: Relational Schema

by

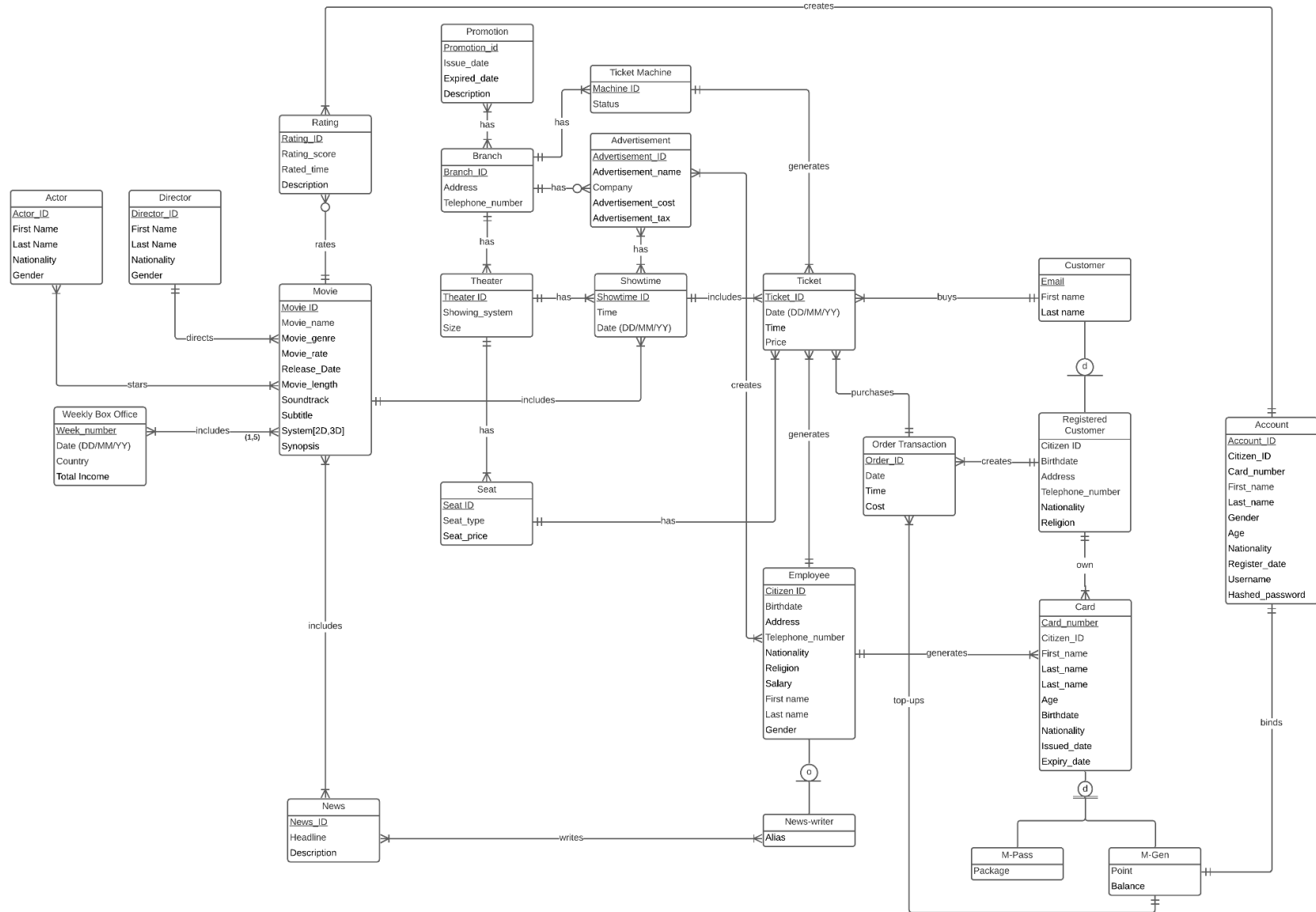| Kulawut | Makkamoltham | 6388030 |
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Section 2 Group 1

Present to
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ITCS241 Database Management System
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Faculty of Information and Communication Technology
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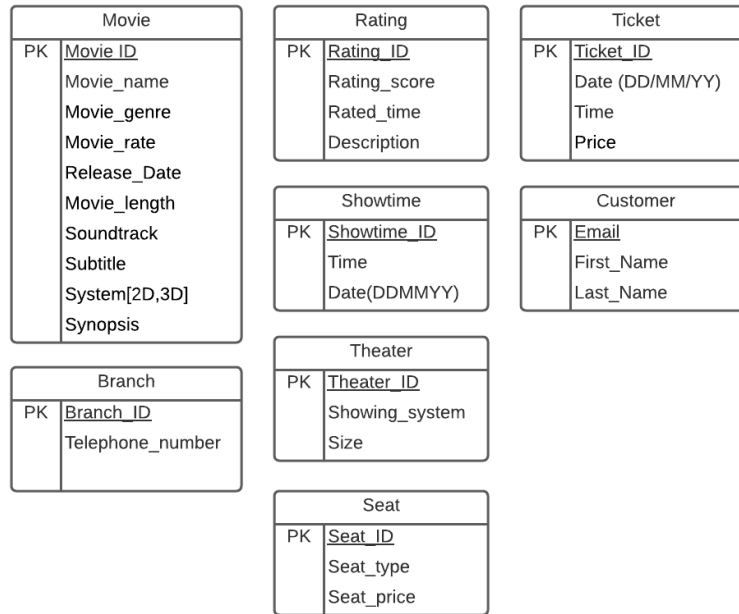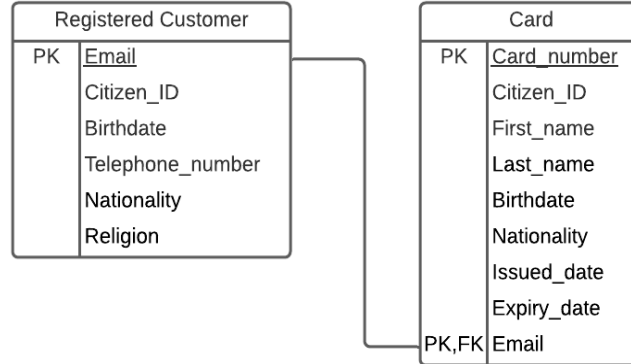# Revised ERD

8-steps to transforming ERD to a relational schema (step-by-step)
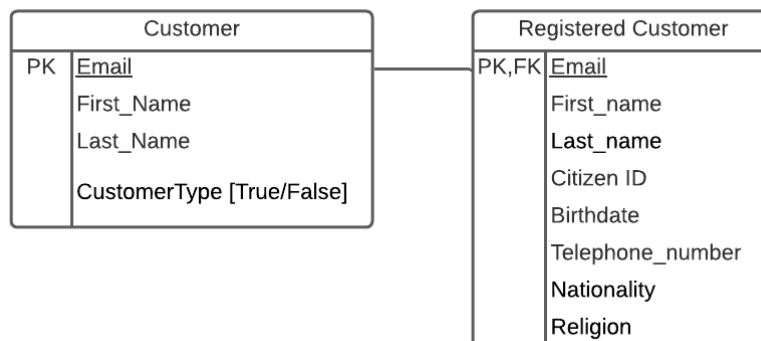## Step 1: Create a relation R for each regular entity type E

Movie	
PK	Movie ID
	Movie_name
	Movie_genre
	Movie_rate
	Release_Date
	Movie_length
	Soundtrack
	Subtitle
	System[2D,3D]
	Synopsis

Rating	
PK	Rating_ID
	Rating_score
	Rated_time
	Description

Ticket	
PK	Ticket_ID
	Date (DD/MM/YY)
	Time
	Price

Showtime	
PK	Showtime_ID
	Time
	Date(DDMMYY)

Customer	
PK	Email
	First_Name
	Last_Name

Branch	
PK	Branch_ID
	Telephone_number

Theater	
PK	Theater_ID
	Showing_system
	Size

Seat	
PK	Seat_ID
	Seat_type
	Seat_price

Step 2: Create a relation R for each weak entity type W

Registered Customer	
PK	Email
	Citizen_ID
	Birthdate
	Telephone_number
	Nationality
	Religion

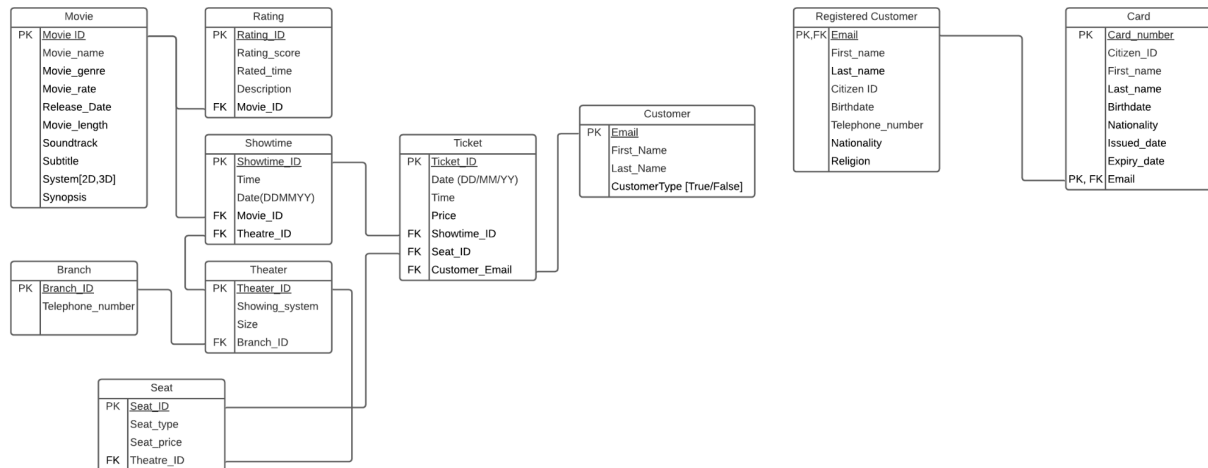| Card	
PK	Card_number
	Citizen_ID
	First_name
	Last_name
	Birthdate
	Nationality
	Issued_date
	Expiry_date
PK,FK	Email

Step 3:Transforming Specialization or Generalization
Table Type: 3A Multiple relations, SuperClass, and Subclasses

Customer	
PK	Email
	First_Name
	Last_Name
	CustomerType [True/False]

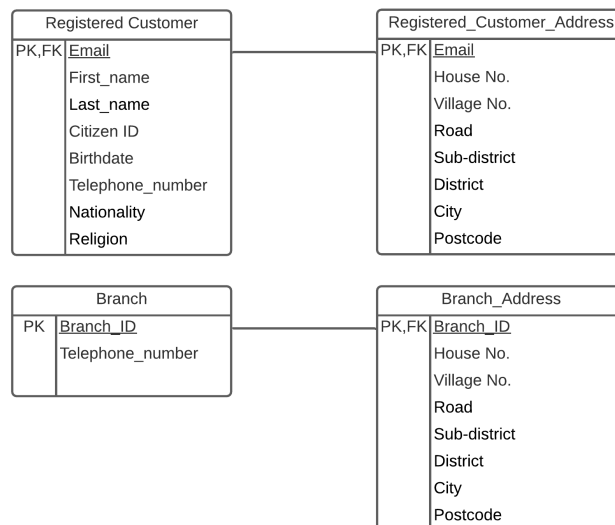| Registered Customer	
PK,FK	Email
	First_name
	Last_name
	Citizen ID
	Birthdate
	Telephone_number
	Nationality
	Religion

Step 4: Binary 1: 1 à Relationship Type R (Does not exist, Skipped)
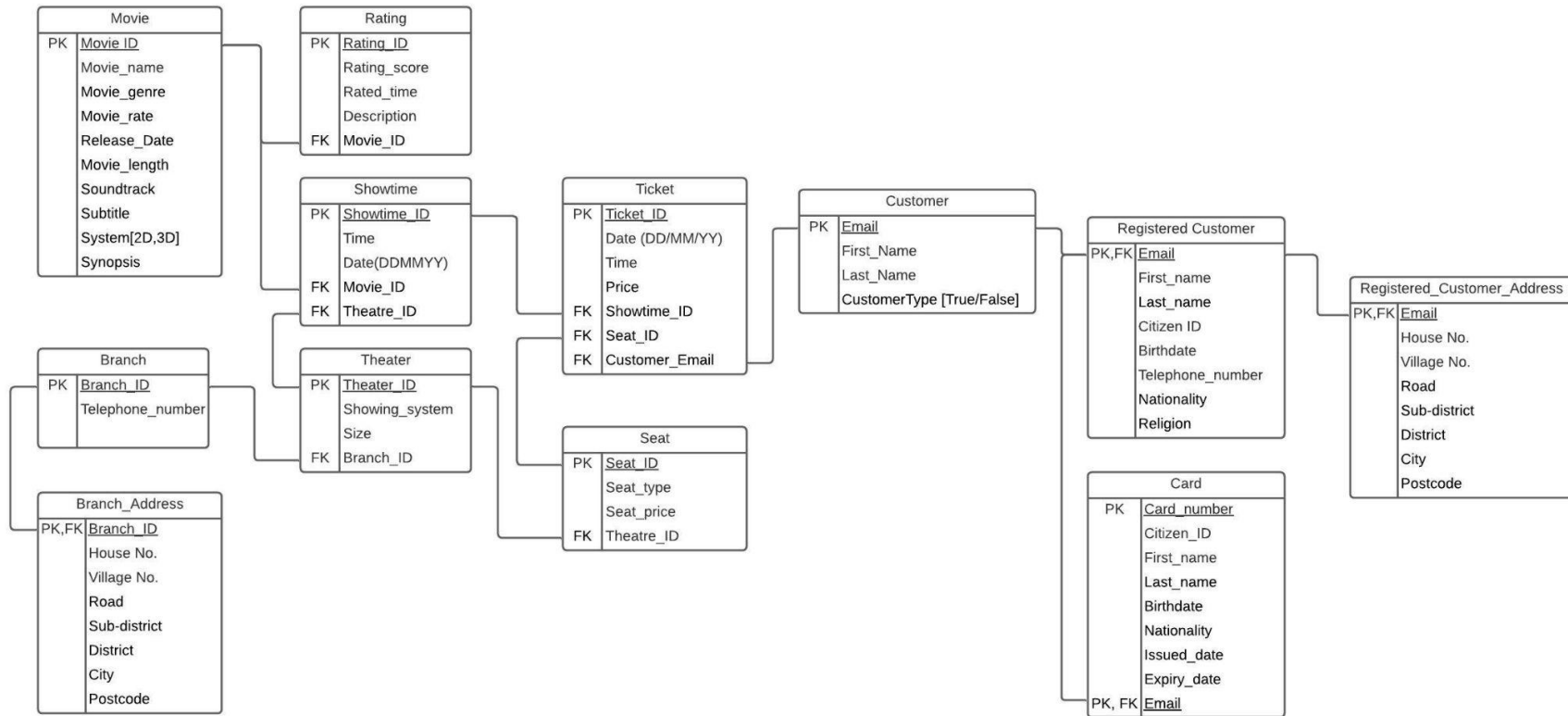**Step 5: Binary 1:N à Relationship Type R**

Step 6: Binary M:N à Relationship Type R (Does not exist, Skipped)
Step 7: Multi-Valued Attribute

Step 8: N-ary Relationship (Does not exist, Skipped)

The final relational schema

Movie
PK	Movie ID
	Movie_name
	Movie_genre
	Movie_rate
	Release_Date
	Movie_length
	Soundtrack
	Subtitle
	System[2D,3D]
	Synopsis

Rating
PK	Rating_ID
	Rating_score
	Rated_time
	Description
FK	Movie_ID

Showtime
PK	Showtime_ID
	Time
	Date(DDMMYY)
FK	Movie_ID
FK	Theatre_ID

Theater
PK	Theater_ID
	Showing_system
	Size
FK	Branch_ID

Branch
PK	Branch_ID
	Telephone_number

Branch_Address
PK,FK	Branch_ID
	House No.
	Village No.
	Road
	Sub-district
	District
	City
	Postcode

Ticket
PK	Ticket_ID
	Date (DD/MM/YY)
	Time
	Price
FK	Showtime_ID
FK	Seat_ID
FK	Customer_Email

Seat
PK	Seat_ID
	Seat_type
	Seat_price
FK	Theatre_ID

Customer
PK	Email
	First_Name
	Last_Name
	CustomerType [True/False]

Registered Customer
PK,FK	Email
	First_name
	Last_name
	Citizen ID
	Birthdate
	Telephone_number
	Nationality
	Religion

Card
PK	Card_number
	Citizen_ID
	First_name
	Last_name
	Birthdate
	Nationality
	Issued_date
	Expiry_date
PK, FK	Email

Registered_Customer_Address
PK,FK	Email
	House No.
	Village No.
	Road
	Sub-district
	District
	City
	Postcode

Data dictionary

TABLE NAME	ATTRIBUTE NAME	CONTENT	TYPE	FORMAT	NULLABLE	RANGE	KEY	FOREIGN KEY REF
						Project data dictionary		
seat	seat_ID	ID of seat	int	x			PK	
	seat_type	Type of this seating by name	varchar(20)	Xxxxxx		Normal, Honeymoon, Opera	-	
	seat_price	Price of this seat	decimal(9,2)	123456789.12			-	
	theater_ID	ID of theater	int	x			FK	theater_ID [theater]
movie	movie_ID	ID of movie	int	x			PK	
	movie_name	Name of movie	varchar(256)	Xxxxxx			-	
	movie_genre	Genre	varchar(256)	Xxxxxx		Action, Animation, Comedy, Crime, Drama, Fantasy, Horror, Historical, Romance, Science Fiction, Thriller, Western, Other	-	
	movie_rate	Movie rate (minimum age of customer ex: 18)	int	x			-	
	release_date	Date of release	date	yyyy-mm-dd			-	
	movie_length	Length in minute	int	x			-	
	soundtrack	Movie dub (Available Sound)	char(2)	XX		EN,TH, JP, KR	-	
	subtitle	Movie subtitle (Available Subtitle)	char(2)	XX		EN,TH, JP, KR	-	
	movie_system	Type of the movie system	char(2)	xX		2D, 3D, 4D	-	
	synopsis	Movie synopsis	varchar(256)	xxxxxx	Yes		-	
theater	theater_ID	ID of theater	int	x			PK	
	showing_system	Type of the theater that is availble for	char(2)	xX		2D, 3D, 4D	-	
	size	Size of the theater	char(1)	X		S, M, L	-	
	branch_ID	ID of specific branch	int	x			FK	branch_ID[branch]
showtime	showtime_ID	ID of showtime	int	x			PK	
	time	Time of this show	time	hh:mm:ss			-	
	date	Date of this show	date	yyyy-mm-dd			-	
	movie_ID	ID of movie	int	x			FK	movie_ID[movie]
	theater_ID	ID of theater	int	x			FK	theater_ID[theater]
rating	rating_ID	ID of this rating	int	x			PK	
	rating_score	The score that user rate to the movie	decimal(2,1)	5.0		0 to 5	-	
	rated_time	Time and date of this rating	datetime	YYYY-MM-DD hh:mm:ss			-	
	description	The text inside this rating	varchar(256)	xxxxxx	Yes		-	
	movie_ID	ID of movie	int	x			FK	movie_ID[movie]
branch	branch_ID	ID of this branch	int	x			PK	
	telephone_number	Branch telephone number	char(10)	xxxxxxxxxx			-	
branch_address	branch_ID	ID of branch	int	x			PK, FK	branch_ID[branch]
	house_no	House number of this branch (ex: 123/4)	varchar(7)	xxxxxxx			-	
	village_no	Village number of this branch	int	x	Yes		-	
	road	Road of this branch	varchar(256)	Xxxxxx			-	
	sub_district	Sub_district of this branch	varchar(256)	Xxxxxx			-	
	district	District of this branch	varchar(256)	Xxxxxx			-	
	city	City of this branch	varchar(256)	Xxxxxx			-	
	postcode	Postcode of this branch	char(5)	Xxxxx			-	
ticket	ticket_ID	ID of this ticket	int	x			PK	
	date	Date when this ticket is generated	date	yyyy-mm-dd			-	
	time	Time when this ticket is generated	time	hh:mm:ss			-	
	price	Total price of this ticket (VAT or discount included)	decimal(9,2)	123456789.12			-	
	showtime_ID	ID of showtime	int	x			FK	showtime_ID[showtime]
	seat_ID	ID of the seat on the ticket	int	x			FK	seat_ID[seat]
	customer_email	Email of the customer	varchar(64)	xxxxxx			FK	email[customer]
customer	email	Email of the customer	varchar(64)	xxxxxx			PK	
	first_name	First name of the customer	varchar(256)	Xxxxxx			-	
	last_name	Last name of the customer	varchar(256)	Xxxxxx			-	
	customer_Type	0 for not registered customer, 1 for registered customer	bit	x		0 to 1	-	
registered_customer	email	Email of the customer	varchar(64)	xxxxxx			PK, FK	email[customer]
	first_name	First name of the customer	varchar(256)	Xxxxxx			-	
	last_name	Last name of the customer	varchar(256)	Xxxxxx			-	
	citizen_ID	Cititzen ID of this customer	char(13)	xxxxxx			-	
	birthdate	Birthdate of the customer	date	yyyy-mm-dd			-	
	telephone_number	Telephone number of this customer	char(10)	xxxxxxxxxx			-	
	nationality	Customer Nationality (ex: EN,TH, JP, KR)	char(2)	XX			-	
	religion	Cutomer Religion	varchar(256)	Xxxxxx	Yes	Buddhism, Christianity, Hinduism, Islam, Judaism, Other	-	
registered_customer_address	email	Email of the customer	varchar(64)	xxxxxx			PK, FK	email[registered_customer]
	house_no	House number of this customer (ex: 123/4)	varchar(7)	xxxxxxx			-	
	village_no	Village number of this customer	int	x	Yes		-	
	road	Road of this customer	varchar(256)	Xxxxxx			-	
	sub_district	Sub_district of this customer	varchar(256)	Xxxxxx			-	
	district	District of this customer	varchar(256)	Xxxxxx			-	
	city	City of this customer	varchar(256)	Xxxxxx			-	
	postcode	Postcode of this customer	char(5)	Xxxxx			-	
card	email	Email of the customer	varchar(64)	xxxxxx			PK, FK	email[registered_customer]
	card_number	Card number	char(16)	xxxxxx			PK	
	citizen_ID	Card number of this customer	char(13)	xxxxxx			-	
	first_name	First name of the customer	varchar(256)	Xxxxxx			-	
	last_name	Last name of the customer	varchar(256)	Xxxxxx			-	
	birthdate	Birthdate of the customer	date	yyyy-mm-dd			-	
	nationality	Customer Nationality (ex: EN,TH, JP, KR)	char(2)	XX			-	
	issued_date	Issue date of this card	date	yyyy-mm-dd			-	
	expiry_date	Expired date of this card	date	yyyy-mm-dd			-	

The sample data of each table (e.g. 5-10 rows)
1. Branch table (Master Table)

```
1 • SELECT * FROM major.branch;
```

branch_id	telephone_number
1	02-111-1111
2	02-222-2222
3	02-333-3333
4	02-444-4444
5	02-555-5555
6	02-666-6666
7	02-888-8888
8	02-999-9999
9	02-123-0123
10	02-123-1234
11	02-123-2345
12	02-123-3456

2. Branch_address table (Master Table)

```
1 • SELECT * FROM major.branch_address;
```

branch_ID	house_ID	village_no	road	subdistrict	district	city	postcode
1	314/5	1	Din Daeng	Samsen Nok	Bang Sue	Bangkok	10407
2	346/9	4	Charoen Rat	Charoen Rat	Mueng	Samut Songk...	75000
3	879/8	2	Itsaraphap	Wat Arun	Bangkok Yai	Bangkok	10600
4	300/4	NULL	Mit Maitri	Si Chomphu	Si Chompoo District	Khon Khaen	40220
5	661/7	NULL	Charoen Krung	Bang Kor Laem	Ban Tawai	Phetchaburi	76110
6	884/1	3	Samsen	PhyaThai	PhyaThai District	Bangkok	10400
7	742/9	6	New Phetchaburi	Mueng Petchaburi	Khlong San	Bangkok	10310
8	902/4	1	Arun Amarin	Arun Amarin	Bangkok Noi	Bangkok	10700
9	894/4	NULL	Krung Thonburi	Bang Yileu	Thon Buri	Bangkok	10600
10	290/2	5	Mangkon	Mangkon Thong	Pom Prap Sattru Phai	Bangkok	10280
11	186/1	NULL	Somdet Phra Pin K...	Bang Plat	Bangkok Noi	Bangkok	10600
12	983/5	3	Sukhumvit	Bang Na	Bang Na	Bangkok	10260

3. Card table (Master Table)

```
1 • SELECT * FROM major.card;
```

email	card_number	citizen_ID	first_name	last_name	birthdate	nationality	issued_date	expiry_date
cxmdech.kittithr@gmail.com	9275959291157245	5138712036269	Pakorn	Somkhumnung	1986-07-20	TH	2021-05-29	2022-05-29
dnudech85@darnglawrrn....	9575632489451236	1959337871815	Mintra	Adusaradee	1942-11-28	TH	2020-03-30	2021-03-30
fkittithr@yahoo.com	9325789314562673	3622527891488	Chaveephong	Rodkongruy	1975-02-03	TH	2021-12-07	2022-12-07
klanxnhngay.thidawrrn@n...	9935429115724525	2193776001416	Chisanuphong	Samuttheva	1992-06-19	TH	2021-11-20	2022-11-20
phwngphka.phngsphithak...	9915902291605240	3711018038475	Chutima	Vittayakhetprapa	1971-06-13	TH	2020-10-01	2021-10-01
rucya.thephsuwrrn@yaho...	9563215789424525	4631801610743	Kwanchira	Talumpuk	1984-07-04	TH	2021-09-05	2022-09-05
techphn43@yahoo.com	9123579478265874	5045896584521	Kamolrat	Pojjumnean	1986-10-15	TH	2021-05-25	2022-05-25
tnkla.khrxngcinda@hotma...	9334788541245698	2491292847312	Krittipong	Phumchat	1972-12-31	TH	2020-11-03	2021-11-03
vdirekwithya@gmail.com	9456871211478256	5027944882410	Jirapat	Siwawong	1974-01-29	TH	2021-07-21	2022-07-21
xdiruc26@gmail.com	9561245898945236	4058399739912	Chutimol	Jenpanichsakul	1951-09-10	TH	2021-01-01	2022-01-01

4. Customer table (Master Table)

```sql
1 •  SELECT * FROM major.customer;
```

email	first_name	last_name	customer_type
BoonC.one@hotmail.com	Tham-boon	Chumphorn	0
Boont1lh@yahoo.com	Boonpipob	Chaipoowapat	0
cxmdech.kittithr@gmail.com	Pakorn	Somkhumnung	1
dnudech85@darnglawrrn....	Mintra	Adusaradee	1
fkittithr@yahoo.com	Chaveephong	Rodkongruy	1
gedts50b3y@gmail.com	Phaibun	Kanjanapas	0
KheChua43125@gmail.com	Khemin	Chuasiriporn	0
klanxnhngay.thidawrrn@n...	Chisanuphong	Samuttheva	1
Kuleekpaii@hotmail.com	Kunanan	Leekpai	0
Night.Temi775@hotmail.c...	Ratri	Temirak	0

5. Movie table (Master Table)

```sql
1 •  SELECT * FROM major.movie;
```

movie_ID	movie_name	movie_genre	movie_rate	release_date	movie_length	soundtrack	subtitle	movie_system	synopsis
1	Rang Zong	Horror	18	2021-10-28	131	TH	NULL	2D	A horrifying story of a shaman's i...
2	Escape Room 2 No Way Out	Thriller	15	2021-11-11	88	EN	TH	4D	its horror movie sequel Escape R...
3	Escape Room 2 No Way Out	Thriller	15	2021-11-11	88	TH	NULL	2D	its horror movie sequel Escape R...
4	Ford v Ferrari	Thriller	15	2019-12-05	152	EN	TH	2D	Academy Award-winners Matt Da...
5	Doraemon The Movie 2020	Animation	0	2020-11-19	110	TH	NULL	2D	NULL
6	Insidious The Last Key	Horror	15	2018-05-10	103	EN	TH	2D	The creative minds behind the hi...
7	The Conjuring (Digital)	Horror	15	2021-05-26	112	EN	TH	2D	A family encounters spirits living ...
8	The Conjuring 3	Horror	15	2021-07-01	113	EN	TH	2D	A chilling story of terror, murder ...
9	No Game No Life Zero	Animation	0	2018-02-08	106	JP	TH	2D	Adaption of the sixth Light Novel ...
10	Parasite	Drama	15	2019-07-22	132	KR	TH	2D	All unemployed, Ki-taek's family t...
11	Avengers 3	Action	0	2018-04-25	150	EN	TH	3D	Avengers Assemble! After a Civil ...
12	Avengers 3	Action	0	2018-04-25	150	EN	TH	2D	Avengers Assemble! After a Civil ...

6. Rating table (Transaction Table)

```sql
1 •  SELECT * FROM major.rating;
```

rating_ID	rating_score	rated_time	description	movie_ID
1	4.5	2021-10-28 09:30:14	I really enjoy along this movie!, th...	7
2	2.5	2020-11-12 15:32:02	So boring	4
3	3.5	2021-06-03 17:54:35	NULL	8
4	3.0	2021-06-05 12:01:48	Sound was nice, but a little bit not...	1
5	1.5	2021-12-30 11:12:31	I think its not related with the pre...	2
6	4.0	2018-06-13 15:57:58	Nice, love this!!! <3	11
7	5.0	2021-02-10 11:42:24	Perfect, my top movie everrrr	5
8	4.0	2021-11-15 21:38:43	NULL	3
9	4.0	2021-06-01 01:11:28	NULL	7
10	5.0	2019-12-12 14:13:12	I really love the romantic scence, i...	4

7. Registered_customer table (Master Table)

```
1 •    SELECT * FROM major.registered_customer;
```

email	first_name	last_name	citizen_ID	birthdate	telephone_number	nationality	religion
cxmdech.kittithr@gmail.com	Pakorn	Somkhumnung	5138712036269	1986-07-20	0924313347	TH	Christianity
dnudech85@darnglawrrn.....	Mintra	Adusaradee	1959337871815	1942-11-28	0815674259	TH	Hinduism
fkittithr@yahoo.com	Chaveephong	Rodkongruy	3622527891488	1975-02-03	0852347801	TH	Buddhism
klanxnhngay.thidawrrn@n...	Chisanuphong	Samuttheva	2193776001416	1992-06-19	0871597585	TH	Islam
phwngphka.phngsphithak...	Chutima	Vittayakhetprapa	3711018038475	1971-06-12	0974395316	TH	Buddhism
rucya.thephsuwrrn@yaho...	Kwanchira	Talumpuk	4631801610743	1984-07-04	0763547854	TH	Buddhism
techphn43@yahoo.com	Kamolrat	Pojjumnean	5045896584521	1986-10-15	0841357961	TH	Islam
tnkla.khrxngcinda@hotma...	Krittipong	Phumchat	2491292847312	1972-12-31	0937305194	TH	Buddhism
vdirekwithya@gmail.com	Jirapat	Siwawong	5027944882410	1974-01-29	0931354297	TH	Christianity
xdiruc26@gmail.com	Chutimol	Jenpanichsakul	4058399739912	1951-09-10	0973654758	TH	Buddhism

8. Registered_customer_address table (Master Table)

```
1 •    SELECT * FROM major.registered_customer_address;
```

email	house_no	village_no	road	sub_district	district	city	postcode
cxmdech.kittithr@gmail.com	139/1	2	Soi Senanikhom 2 Phaholy...	Ladyao	Chatuchak	Bangkok	10900
dnudech85@darnglawrrn.....	113	3	Soi Pavana Ladprao 41	Ladyao	Chatuchak	Bangkok	10900
fkittithr@yahoo.com	75/2	1	Bamrungmuang	Muang	Pom Prap Sattru Phai	Bangkok	10100
klanxnhngay.thidawrrn@n...	1182/32	NULL	Jaransanitwong	Jaransanitwong	Bangkok noi	Bangkok	10600
phwngphka.phngsphithak...	1613/1	NULL	Charoennakorn	Banglumpoo	Larng Khlong San	Bangkok	10600
rucya.thephsuwrrn@yaho...	154	NULL	Soi K L M Chaengwatana Rd	Talad Bangkaen	Laksi	Bangkok	10600
techphn43@yahoo.com	245	NULL	Bamrungmuang Klong Ma...	Sampantawong	Pom Prap Sattru Phai	Bangkok	10100
tnkla.khrxngcinda@hotma...	178	NULL	Gp 1 Thonburi-Parkthor	Thakham	Bang Khun Thian	Bangkok	10150
vdirekwithya@gmail.com	269	NULL	Soi Yasoop Factory Rama Iv	Khlong Toei	Khlong Toei	Bangkok	10110
xdiruc26@gmail.com	513	NULL	Ratchadapisek 26	Samsennok	Huaykwang	Bangkok	10600

9. Seat table (Master Table)

```
1 •    SELECT * FROM major.seat;
```

seat_ID	seat_type	seat_price	theater_ID
1	Normal	160.00	1
2	Normal	160.00	1
3	Normal	160.00	1
4	Normal	160.00	1
5	Normal	160.00	1
6	Normal	160.00	1
7	Normal	160.00	1
8	Normal	160.00	1
9	Normal	160.00	1
10	Normal	160.00	1

10. Showtime table (Transaction Table)

```
1 •    SELECT * FROM major.showtime;
```

showtime_ID	time	date	movie_ID	theater_ID
1	21:50:00	2018-02-09	9	2
2	13:20:00	2018-03-04	9	2
3	11:40:00	2018-03-11	9	2
4	14:20:00	2018-05-05	11	8
5	14:20:00	2018-05-05	12	5
6	21:20:00	2018-05-05	11	8
7	16:50:00	2018-06-03	12	6
8	17:20:00	2018-07-07	12	6
9	20:40:00	2018-08-07	12	5
10	22:20:00	2018-09-08	6	2

11. Theater table (Master Table)

```
1 •    SELECT * FROM major.theater;
```

theater_ID	showing_system	size	branch_ID
1	2D	S	1
2	2D	M	1
3	2D	L	1
4	2D	S	1
5	3D	S	1
6	3D	L	1
7	2D	M	1
8	2D	L	1
9	4D	L	1
10	2D	M	1
NULL	NULL	NULL	NULL

12. Ticket table (Transaction Table)

```
1 •    SELECT * FROM major.ticket;
```

ticket_ID	date	time	price	showtime_ID	seat_ID	customer_email
1	2018-02-09	21:50:00	160.00	1	30	phwngphka.phngsphithak...
2	2018-03-04	13:20:00	160.00	2	25	tnkla.khrxngcinda@hotma...
3	2018-03-11	11:40:00	180.00	3	44	dnudech85@darnglawrrn....
4	2018-05-05	14:20:00	160.00	4	235	gedts50b3y@gmail.com
5	2018-05-05	14:20:00	250.00	5	133	tnkla.khrxngcinda@hotma...
6	2018-05-05	21:20:00	180.00	6	246	dnudech85@darnglawrrn....
7	2018-06-03	16:50:00	180.00	7	176	PantPCV2@hotmail.com
8	2018-07-07	17:20:00	160.00	8	169	KheChua43125@gmail.com
9	2018-08-07	20:40:00	250.00	9	140	vdirekwithya@gmail.com
10	2018-09-08	22:20:00	180.00	10	41	klanxnhngay.thidawrrn@n...

Basic queries (20 problems)

`Query 1:` `Which tickets are Honeymoon seats?`

```sql
SELECT ticket_ID AS "Ticket ID", seat.seat_ID AS "Seat ID", seat_type AS "Type",
    seat_price AS "Price"
    FROM ticket
    INNER JOIN seat ON seat.seat_id = ticket.seat_id
WHERE seat.seat_type = "Honeymoon"
ORDER BY ticket_id ASC;
```

Ticket ID	Seat ID	Type	Price
3	44	Honeymoon	180.00
6	246	Honeymoon	180.00
7	176	Honeymoon	300.00
9	140	Honeymoon	300.00
10	41	Honeymoon	180.00
13	136	Honeymoon	300.00
14	94	Honeymoon	180.00
15	119	Honeymoon	180.00
17	255	Honeymoon	180.00
19	18	Honeymoon	180.00
21	43	Honeymoon	180.00
24	85	Honeymoon	180.00
25	118	Honeymoon	180.00
32	266	Honeymoon	180.00

`Query 2:` `Show every movie ID, date, and time that would be in theater 3 and ascending order by date.`

```sql
SELECT `movie_ID` AS `Movie ID`, `date` AS `Date`, `time` AS `Time`
  FROM `showtime`
  WHERE `theater_ID` = 3
  ORDER BY `date` ASC, `time` ASC;
```

Movie ID	Date	Time
12	2018-12-04	13:40:00
8	2021-07-09	20:40:00

Query 3: Show email and how much each customer has lost their money in pursuit of temporary happiness, happiest at the top.

```sql
SELECT customer_email AS `Customer Email`, SUM(price) as `Amount Spent`
    FROM `ticket`
    GROUP BY customer_email
    ORDER BY `Amount Spent` DESC;
```

Customer Email	Amount Spent
tnkla.khrxngcinda@hotma...	1920.00
fkittithr@yahoo.com	990.00
gedts50b3y@gmail.com	820.00
BoonC.one@hotmail.com	500.00
phwngphka.phngsphithak...	470.00
vdirekwithya@gmail.com	410.00
techphn43@yahoo.com	380.00
dnudech85@darnglawrrn....	360.00
PantPCV2@hotmail.com	340.00
Somwan1234@gmail.com	340.00
cxmdech.kittithr@gmail.com	250.00
Boont1lh@yahoo.com	180.00
klanxnhngay.thidawrrn@n...	180.00
KheChua43125@gmail.com	160.00
Kuleekpaii@hotmail.com	160.00
xdiruc26@gmail.com	160.00

Query 4: Show top 3 month that have the most showtime including the record in every year.

```sql
SELECT month(`date`) as `Month`, count(*) as `No of Show`
    FROM `showtime`
    GROUP BY month(`date`)
    ORDER BY `No of Show` DESC, `Month` DESC
    LIMIT 3;
```

Month	No of Show
11	6
5	5
8	4

Query 5: Show the number of customers that use Gmail is like cultured civilized people.

```sql
SELECT COUNT(`email`) as `Cultured gmail user`
    FROM `customer`
    WHERE `email` REGEXP '@gmail\.com';
```

Cultured gmail user
7

Query 6: Lists customers that are more than 18 years of age (For age restriction purposes)

```sql
SELECT CONCAT(first_name," ",last_name) AS 'Customer Name',
    YEAR(CURDATE())-YEAR(birthdate) AS Age
    FROM registered_customer
    WHERE YEAR(CURDATE())-YEAR(birthdate) > 18  -- Cannot use alias in WHERE, only in HAVING
    ORDER BY YEAR(CURDATE())-YEAR(birthdate) DESC;
```

Customer Name	Age
Mintra Adusaradee	79
Chutimol Jenpanichsakul	70
Chutima Vittayakhetprapa	50
Krittipong Phumchat	49
Jirapat Siwawong	47
Chaveephong Rodkongruy	46
Kwanchira Talumpuk	37
Pakorn Somkhumnung	35
Kamolrat Pojjumnean	35
Chisanuphong Samuttheva	29

Query 7: Display all the customer full name and card numbers that has expired

```sql
SELECT CONCAT(first_name," ",last_name) AS 'Customer Name',
    card_number AS "Card Number", expiry_date AS "Expired On"
    FROM card
    WHERE DATEDIFF(expiry_date,CURDATE())<0;
```

Customer Name	Card Number	Expired On
Mintra Adusaradee	9575632489451236	2021-03-30
Chutima Vittayakhetprapa	9915902291605240	2021-10-01
Krittipong Phumchat	9334788541245698	2021-11-03

Query 8: Calculate how many dates are left for all customer cards and print out the customer full name with the left date

```sql
SELECT CONCAT(first_name," ",last_name) AS 'Customer Name',
    DATEDIFF(expiry_date,CURDATE()) AS "Date left"
    FROM card
    WHERE DATEDIFF(expiry_date,CURDATE())>0
    ORDER BY DATEDIFF(expiry_date,CURDATE()) DESC;
```

Customer Name	Date left
Chaveephong Rodkongruy	385
Chisanuphong Samuttheva	368
Kwanchira Talumpuk	292
Jirapat Siwawong	246
Pakorn Somkhumnung	193
Kamolrat Pojjumnean	189
Chutimol Jenpanichsakul	45

Query 9: Show the ticket that has been sold on a special discount day (Wednesday) and print out the ticket ID along with the day bought and email who bought it.

```sql
SELECT ticket_ID AS "Ticket ID", `date` AS "Day bought",
    customer_email AS "Associated Email"
    FROM ticket
    WHERE  WEEKDAY(date)=2;
```

Ticket ID	Day bought	Associated Email
12	2018-10-03	fkittithr@yahoo.com
17	2019-12-18	Boont1lh@yahoo.com

Query 10: Count how many customers are in the database grouped by type (registered or not)

```sql
SELECT customer_type AS "Type", COUNT(*) AS "Amount of Customer"
 FROM customer
 GROUP BY customer_type;
```

Type	Amount of Customer
0	10
1	10

Query 11: Show all of the seats in the theater 5 theater ID and order by the highest price (For overview seeing of selected theater)

```sql
SELECT *
    FROM seat
    WHERE theater_id = 5
    ORDER BY seat_price DESC;
```

seat_ID	seat_type	seat_price	theater_ID
135	Honeymoon	300.00	5
136	Honeymoon	300.00	5
137	Honeymoon	300.00	5
138	Honeymoon	300.00	5
139	Honeymoon	300.00	5
140	Honeymoon	300.00	5
121	Normal	250.00	5
122	Normal	250.00	5
123	Normal	250.00	5
124	Normal	250.00	5
125	Normal	250.00	5
126	Normal	250.00	5
127	Normal	250.00	5
128	Normal	250.00	5
129	Normal	250.00	5
130	Normal	250.00	5
131	Normal	250.00	5
132	Normal	250.00	5
133	Normal	250.00	5
134	Normal	250.00	5

Query 12: Find the name of the movie and movie system that have movie_length more than 120 and have English soundtrack

```sql
SELECT movie_name, movie_system
    FROM MOVIE
    WHERE movie_length > 120 AND soundtrack = "EN";
```

movie_name	movie_system
▶ Ford v Ferrari	2D
Avengers 3	3D
Avengers 3	2D

Query 13: Find theater IDs that is 2D medium size

```sql
SELECT `theater_ID` AS `Theater ID`, `size` AS `Size`
    FROM theater
    WHERE `size` = "M" AND `showing_system` = "2D";
```

Theater ID	Size
▶ 2	M
7	M
10	M

Query 14: Count movies by genre and print out the genre that has the number of movies more than 1

```sql
SELECT movie_genre AS `Movie Genre`, count(*) AS `No of Movie`
    FROM movie
    WHERE movie_rate < 18
    GROUP BY `Movie Genre`
    HAVING count(*) > 1;
```

Movie Genre	No of Movie
▶ Thriller	3
Animation	2
Horror	3
Action	2

Query 15: Find how many customers write the description when they rated the movie

```sql
SELECT COUNT(rating_ID) AS `Rating with description`
    FROM rating
    WHERE description IS NOT NULL;
```

Rating with description
▶ 20

Query 16: Find each religion of registered customer that has more than 1 religion and order by the maximum religion

```sql
SELECT religion AS `Religion`, COUNT(email) AS `No of religion`
    FROM registered_customer
    GROUP BY religion
    HAVING `No of religion` > 1
    ORDER BY `No of religion` DESC;
```

Religion	No of religion
Buddhism	5
Christianity	2
Islam	2

Query 17: Find all of the sold ticket price in year 2021

```sql
SELECT YEAR(date) AS `Year`, SUM(price) AS `Total price`
    FROM ticket
    WHERE YEAR(date) = 2021;
```

Year	Total price
2021	4330.00

Query 18: List every movie's information (movie name, movie system, soundtrack and subtitle) that was released this year (2021) and ordered by the movie name alphabetically. (Be careful that many systems also count as 1 movie)

```sql
SELECT movie_name AS `Movie Name`, movie_system, IF (ISNULL(subtitle),
    soundtrack, CONCAT(soundtrack,"/",subtitle)) AS `Dub/Sub`
    FROM movie
    WHERE YEAR(release_date) = 2021
    ORDER BY `Movie Name` ASC;
```

Movie Name	movie_system	Dub/Sub
Escape Room 2 No Way Out	4D	EN/TH
Escape Room 2 No Way Out	2D	TH
Rang Zong	2D	TH
The Conjuring (Digital)	2D	EN/TH
The Conjuring 3	2D	EN/TH

Query 19: Number of the tickets bought by each customer this year including total price.

```sql
SELECT customer_email, count(*) AS `Tickets bought`, sum(price) AS `Total price`
    FROM ticket
    WHERE YEAR(DATE) = YEAR(CURDATE())
    GROUP BY customer_email
    ORDER BY `Total price` DESC;
```

customer_email	Tickets bought	Total price
tnkla.khrxngcinda@hotmail.com	4	1510.00
gedts50b3y@gmail.com	2	660.00
fkittithr@yahoo.com	1	650.00
BoonC.one@hotmail.com	3	500.00
techphn43@yahoo.com	3	380.00
PantPCV2@hotmail.com	1	160.00
Somwan1234@gmail.com	1	160.00
xdiruc26@gmail.com	1	160.00
phwngphka.phngsphithaks@gmail.com	1	150.00

Query 20: Find the movie name in the action genre that's longer than 2 hours and order by the movie name alphabetically (Be careful that many systems also count as 1 movie)

```sql
SELECT DISTINCT movie_name AS `Movie Name`
    FROM movie
    WHERE movie_length > 120 AND movie_genre = "Action"
    ORDER BY movie_name ASC;
```

Movie Name
Avengers 3

Advanced queries (20 problems)

Query 1: List all movies(movie name, movie genre, and rating score) that have
    rating_score more than 2.5 in descending order.

```sql
SELECT movie_name AS `Movie Name`, movie_genre AS `Movie Genre`,
       rating_score AS `Rating Score`
       FROM movie m
       INNER JOIN Rating r ON m.movie_ID = r.movie_ID
GROUP BY m.movie_ID
HAVING `rating_score` > 2.5
ORDER BY `Rating Score` DESC;
```

Movie Name	Movie Genre	Rating Score
Doraemon The Movie 2020	Animation	5.0
Insidious The Last Key	Horror	4.5
The Conjuring (Digital)	Horror	4.5
Escape Room 2 No Way Out	Thriller	4.0
Avengers 3	Action	4.0
The Conjuring 3	Horror	3.5
Rang Zong	Horror	3.0
No Game No Life Zero	Animation	3.0

Query 2: List all customer names(first and last name) and how many times does a
    customer watches movies ordered by the least watching time.

```sql
SELECT CONCAT(first_name, " ", last_name) AS `Customer Name`,
    COUNT(email) AS `Watch Time`
    FROM customer c
    INNER JOIN ticket t ON c.email = t.customer_email
GROUP BY customer_email
ORDER BY `Watch Time` ASC;
```

Customer Name	Watch Time
Boonpipob Chaipoowapat	1
Pakorn Somkhumnung	1
Khemin Chuasiriporn	1
Chisanuphong Samuttheva	1
Kunanan Leekpai	1
Chutimol Jenpanichsakul	1
Mintra Adusaradee	2
Panas Punyawong	2
Dok-rak Somwan	2
Jirapat Siwawong	2
Tham-boon Chumphorn	3
Chaveephong Rodkongruy	3
Phaibun Kanjanapas	3
Chutima Vittayakhetprapa	3
Kamolrat Pojjumnean	3
Krittipong Phumchat	6

Query 3: How many tickets for each movie, ordered by the number of tickets in descending order.

```sql
SELECT `movie`.movie_name AS `Movie Name`, COUNT(*) AS `Ticket Count`
    FROM `ticket`
    INNER JOIN `showtime` ON `ticket`.showtime_ID = `showtime`.showtime_ID
    INNER JOIN `movie`    ON `showtime`.movie_ID = `movie`.movie_ID
GROUP BY `Movie Name`
ORDER BY `Ticket Count` DESC;
```

Movie Name	Ticket Count
Avengers 3	8
Escape Room 2 No Way Out	6
The Conjuring (Digital)	6
Insidious The Last Key	3
The Conjuring 3	3
No Game No Life Zero	3
Rang Zong	2
Ford v Ferrari	2
Doraemon The Movie 2020	1
Parasite	1

Query 4: Count the number of showtimes that are the most booked by the customers and ordered by the maximum showtime

```sql
SELECT s.showtime_ID AS `Showtime ID`, COUNT(t.showtime_ID) AS `No of Showtime`
    FROM showtime s
    INNER JOIN ticket t ON t.showtime_ID = s.showtime_ID
GROUP BY s.showtime_ID
ORDER BY `No of Showtime` DESC;
```

Showtime ID	No of Showtime
19	4
30	3
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
20	1
21	1
22	1
23	1
24	1
25	1
26	1
27	1
28	1
29	1

Query 5: Number of registered customers that live in the same district as the Theater

```sql
SELECT COUNT(rc.district) AS `Customer district`
    FROM registered_customer_address rc
    WHERE rc.district IN
            (SELECT DISTINCT ba.district AS `Branch district`
                FROM branch_address ba);
```

Customer district
3

Query 6: Find out which customer bought less than the average number of tickets so you can email them to buy more

```sql
SELECT  `Customer Email`, `Ticket Bought`
    FROM
        (SELECT customer_email AS `Customer Email`, COUNT(*) as `Ticket Bought`
            FROM `ticket`
            GROUP BY customer_email) AS `T`
    WHERE `Ticket Bought` < (SELECT AVG(`Ticket Bought`)
    FROM
        (SELECT customer_email AS `Customer Email`, COUNT(*) as `Ticket Bought`
            FROM `ticket`
            GROUP BY customer_email) AS `TT`)
ORDER BY `Ticket Bought` DESC;
```

Customer Email	Ticket Bought
dnudech85@darnglawrrn.ac.th	2
PantPCV2@hotmail.com	2
Somwan1234@gmail.com	2
vdirekwithya@gmail.com	2
Boont1lh@yahoo.com	1
cxmdech.kittithr@gmail.com	1
KheChua43125@gmail.com	1
klanxnhngay.thidawrrn@nthiphithaks.net.th	1
Kuleekpaii@hotmail.com	1
xdiruc26@gmail.com	1

Query 7: Number of showtimes for 2D, 3D, 4D movies.

```sql
SELECT movie_system AS `Movie System`, count(*) AS `No of System`
    FROM showtime s
    JOIN movie m ON m.movie_id = s.movie_id
GROUP BY movie_system ORDER BY `No of System` DESC;
```

Movie System	No of System
2D	25
3D	3
4D	2

Query 8: List the movies with the most tickets sold during 2018.

```sql
SELECT movie_name AS `Movie`, COUNT(t.ticket_ID) AS `Amount of tickets bought`
    FROM ticket t
    INNER JOIN showtime sh ON sh.showtime_ID = t.showtime_ID
    LEFT OUTER JOIN movie m ON sh.movie_ID = m.movie_ID
WHERE year(t.date) = 2018
GROUP BY m.movie_ID
ORDER BY `Amount of tickets bought` DESC;
```

Movie	Amount of tickets bought
Avengers 3	5
Insidious The Last Key	3
No Game No Life Zero	3
Avengers 3	3

Query 9: Customer that has bought more than 5 tickets this year (2021)

```sql
SELECT CONCAT(first_name, " ", last_name) AS `Customer Name`, email,
    COUNT(Ticket_ID) AS "Amount of tickets bought this year"
    FROM customer c
    INNER JOIN ticket t ON c.email = t.customer_email
WHERE YEAR(date)-YEAR(CURDATE())=0
GROUP BY email
HAVING COUNT(Ticket_ID) > 3;
```

Customer Name	email	Amount of tickets bought this year
Krittipong Phumchat	tnkla.khrxngcinda@hotma...	4

Query 10: Generates a showtime schedule of theater 3 (movie_name, date, time)

```sql
SELECT `movie`.movie_name, `date`, `time`
    FROM `showtime`
    INNER JOIN `movie` ON `showtime`.movie_ID = `movie`.movie_ID
WHERE theater_ID = 3
ORDER BY `date` ASC, `time` ASC;
```

movie_name	date	time
Avengers 3	2018-12-04	13:40:00
The Conjuring 3	2021-07-09	20:40:00

Query 11: Movie genre that people watch the most (Descending Order)

```sql
SELECT movie_genre AS `Movie Genre`, count(*) AS `No of Customer`
    FROM ticket t
    JOIN showtime s ON s.showtime_ID = t.showtime_ID
    JOIN movie m ON s.movie_id = m.movie_id
GROUP BY movie_genre ORDER BY `No of Customer` DESC;
```

Movie Genre	No of Customer
Horror	14
Thriller	8
Action	8
Animation	4
Drama	1

Query 12: Show which theater is most frequently watched by the customer.

```sql
SELECT DISTINCT (t.theater_ID) AS `Theater ID`,
    COUNT(t.theater_ID) AS `Count theater`
    FROM theater t
    INNER JOIN showtime s ON t.theater_ID = s.theater_ID
    INNER JOIN ticket tic ON tic.showtime_ID = s.showtime_ID
GROUP BY t.theater_ID
ORDER BY `Count theater` DESC
LIMIT 1;
```

Theater ID	Count theater
1	7

Query 13: Number of tickets sold for each soundtrack group with an average rating

```sql
SELECT m.soundtrack, count(*) AS `Number of tickets sold`,
    `Average` AS `Average rating` FROM ticket t
    JOIN showtime st ON t.showtime_id = st.showtime_id
    JOIN movie m ON st.movie_id = m.movie_id
    LEFT JOIN
        (SELECT mm.soundtrack, avg(r.rating_score) AS `Average` FROM movie mm
        JOIN rating r ON r.movie_id = mm.movie_id
        GROUP BY mm.soundtrack) AS rat
    ON rat.soundtrack = m.soundtrack
GROUP BY m.soundtrack ORDER BY `Number of tickets sold` DESC;
```

soundtrack	Number of tickets sold	Average rating
EN	26	3.91667
TH	5	3.37500
JP	3	3.50000
KR	1	2.25000

Query 14: Show the most popular showtime period (Descending).

```sql
SELECT DISTINCT s.time AS `Time`, COUNT(t.time) AS `Count`
    FROM showtime s
    INNER JOIN ticket t ON s.showtime_ID = t.showtime_ID
GROUP BY s.time
ORDER BY `Count` DESC;
```

Time	Count
15:50:00	4
12:20:00	4
14:20:00	2
17:20:00	2
20:40:00	2
20:20:00	2
10:40:00	2
21:50:00	1
13:20:00	1
11:40:00	1
21:20:00	1
16:50:00	1
22:20:00	1
16:30:00	1
11:20:00	1
13:40:00	1
22:40:00	1
22:30:00	1
14:10:00	1
15:30:00	1
20:50:00	1
16:20:00	1
10:30:00	1
19:40:00	1

Query 15: Number of seats and showtimes in each theater order by the number of showtimes in descending order.

```sql
SELECT t.theater_ID AS `Theater ID`, count(DISTINCT(seat_id)) AS `Number of
    seats`, COALESCE(`Number of showtimes`,0) AS `Number of showtimes`
    FROM theater t
    JOIN seat s ON t.theater_id = s.theater_id
    LEFT JOIN
        (SELECT tt.theater_id, COUNT(*) AS `Number of showtimes` FROM theater tt
            JOIN showtime st ON st.theater_id = tt.theater_id
            GROUP BY tt.theater_id) AS temp
    ON t.theater_id = temp.theater_id
GROUP BY t.theater_id ORDER BY `Number of showtimes` DESC;
```

Theater ID	Number of seats	Number of showtimes
2	30	6
4	20	5
8	50	5
1	20	4
5	20	3
3	50	2
6	50	2
9	50	2
7	30	1
10	30	0

Query 16: How many branches are located in Bangkok and the district begin with 'Bang'.

```sql
SELECT count(b.branch_ID) AS `Count Branch ID`
    FROM branch b
    INNER JOIN branch_address ba ON ba.branch_ID = b.branch_ID
WHERE city = 'Bangkok' AND district LIKE "Bang%";
```

Count Branch ID
5

Query 17: Select movie_id, movie_name, movie_system, Dub/Sub, Average rating, theater id, and showtime of the movie that have average rating of more than 3.5 ordered by rating in descending order.

```sql
SELECT DISTINCT m.movie_id AS `Movie ID`, movie_name AS `Movie Name`,
    movie_system, IF (ISNULL(subtitle), soundtrack,
    CONCAT(soundtrack,"/",subtitle)) AS `Dub/Sub`, `Average Rating`, theater_id AS
    `Theater ID`, s.date, s.time FROM showtime s
    JOIN movie m on s.movie_id = m.movie_id
    JOIN rating r ON s.movie_id = r.movie_id
    JOIN
        (SELECT mm.movie_id, avg(rating_score) as `Average Rating` FROM rating rr
        JOIN movie mm ON rr.movie_id = mm.movie_id
        GROUP BY mm.movie_id) AS rm
    ON rm.movie_id = s.movie_id
WHERE `Average Rating` > 3.5
ORDER BY date, time ASC;
```

Movie ID	Movie Name	movie_system	Dub/Sub	Average Rating	Theater ID	date	time
11	Avengers 3	3D	EN/TH	4.50000	8	2018-05-05	14:20:00
11	Avengers 3	3D	EN/TH	4.50000	8	2018-05-05	21:20:00
6	Insidious The Last Key	2D	EN/TH	4.00000	8	2018-09-08	16:30:00
6	Insidious The Last Key	2D	EN/TH	4.00000	2	2018-09-08	22:20:00
6	Insidious The Last Key	2D	EN/TH	4.00000	4	2018-10-03	17:20:00
11	Avengers 3	3D	EN/TH	4.50000	5	2018-11-11	11:20:00
4	Ford v Ferrari	2D	EN/TH	4.00000	7	2019-12-17	20:20:00
4	Ford v Ferrari	2D	EN/TH	4.00000	8	2019-12-18	22:30:00
5	Doraemon The Movie 2020	2D	TH	3.75000	4	2020-11-20	14:10:00
7	The Conjuring (Digital)	2D	EN/TH	3.87500	1	2021-05-27	15:50:00
7	The Conjuring (Digital)	2D	EN/TH	3.87500	2	2021-05-28	15:30:00
7	The Conjuring (Digital)	2D	EN/TH	3.87500	1	2021-08-03	16:20:00
3	Escape Room 2 No Way Out	2D	TH	4.00000	1	2021-11-11	10:40:00
2	Escape Room 2 No Way Out	4D	EN/TH	3.66667	9	2021-11-11	19:40:00
3	Escape Room 2 No Way Out	2D	TH	4.00000	8	2021-11-12	20:20:00
2	Escape Room 2 No Way Out	4D	EN/TH	3.66667	9	2021-11-13	12:20:00

Query 18: First name and last name of the customers for each occupied seat

```sql
SELECT  Ticket_ID, CONCAT(c.first_name, " ",  c.last_name) AS `Customer Name`,
    seat_ID AS "Assigned seat", theater_id AS "Theater",
    t.date AS "Date", t.time AS "Showtime"
    FROM customer c
    INNER JOIN ticket t ON c.email = t.customer_email
    INNER JOIN customer ca ON ca.email = c.email
    INNER JOIN showtime s ON t.showtime_id = s.showtime_id
ORDER BY Ticket_ID ASC;
```

Ticket_ID	Customer Name	Assigned seat	Theater	Date	Showtime
1	Chutima Vittayakhetprapa	30	2	2018-02-09	21:50:00
2	Krittipong Phumchat	25	2	2018-03-04	13:20:00
3	Mintra Adusaradee	44	2	2018-03-11	11:40:00
4	Phaibun Kanjanapas	235	8	2018-05-05	14:20:00
5	Krittipong Phumchat	133	5	2018-05-05	14:20:00
6	Mintra Adusaradee	246	8	2018-05-05	21:20:00
7	Panas Punyawong	176	6	2018-06-03	16:50:00
8	Khemin Chuasiriporn	169	6	2018-07-07	17:20:00
9	Jirapat Siwawong	140	5	2018-08-07	20:40:00
10	Chisanuphong Samuttheva	41	2	2018-09-08	22:20:00
11	Chutima Vittayakhetprapa	233	8	2018-09-08	16:30:00
12	Chaveephong Rodkongruy	114	4	2018-10-03	17:20:00
13	Pakorn Somkhumnung	136	5	2018-11-11	11:20:00
14	Chaveephong Rodkongruy	94	3	2018-12-04	13:40:00
15	Dok-rak Somwan	119	4	2019-08-06	22:40:00
16	Jirapat Siwawong	201	7	2019-12-17	20:20:00
17	Boonpipob Chaipoowapat	255	8	2019-12-18	22:30:00
18	Kunanan Leekpai	112	4	2020-11-20	14:10:00
19	Chutima Vittayakhetprapa	18	1	2021-05-27	15:50:00
20	Tham-boon Chumphorn	30	1	2021-05-27	15:50:00
21	Krittipong Phumchat	43	1	2021-05-27	15:50:00
22	Dok-rak Somwan	38	1	2021-05-27	15:50:00
23	Phaibun Kanjanapas	24	2	2021-05-28	15:30:00
24	Kamolrat Pojjumnean	85	3	2021-07-09	20:40:00
25	Krittipong Phumchat	118	4	2021-07-09	20:50:00
26	Chutimol Jenpanichsakul	12	1	2021-08-03	16:20:00
27	Tham-boon Chumphorn	32	2	2021-08-02	10:40:00
28	Kamolrat Pojjumnean	10	1	2021-10-28	12:20:00
29	Kamolrat Pojjumnean	106	4	2021-10-29	10:30:00
30	Panas Punyawong	1	1	2021-11-11	10:40:00
31	Chaveephong Rodkongruy	308	9	2021-11-11	19:40:00
32	Tham-boon Chumphorn	266	8	2021-11-12	20:20:00
33	Krittipong Phumchat	292	9	2021-11-13	12:20:00
34	Phaibun Kanjanapas	298	9	2021-11-13	12:20:00
35	Krittipong Phumchat	325	9	2021-11-13	12:20:00

Query 19: Show movie statistics (Movie Name, avg rating, ticket sold, and ticket sold).

```sql
SELECT movie_name AS "Movie Name", movie_system AS "System",
    AVG(rating_score) AS "Average rating",
    COUNT(DISTINCT(t.ticket_ID)) AS "Tickets sold"
    FROM movie m
    LEFT OUTER JOIN rating r ON m.movie_id = r.movie_id
    LEFT OUTER JOIN showtime s ON m.movie_id = s.movie_id
    LEFT OUTER JOIN ticket t ON s.showtime_ID = t.showtime_ID
GROUP BY m.movie_ID
ORDER BY AVG(rating_score) DESC;
```

Movie Name	System	Average rating	Tickets sold
Avengers 3	3D	4.50000	3
Escape Room 2 No Way Out	2D	4.00000	2
Ford v Ferrari	2D	4.00000	2
Insidious The Last Key	2D	4.00000	3
The Conjuring (Digital)	2D	3.87500	6
Doraemon The Movie 2020	2D	3.75000	1
Escape Room 2 No Way Out	4D	3.66667	4
The Conjuring 3	2D	3.50000	3
No Game No Life Zero	2D	3.50000	3
Parasite	2D	2.25000	1
Rang Zong	2D	2.00000	2
Avengers 3	2D	NULL	5

Query 20: Show tickets that were bought with cards

```sql
SELECT  Ticket_ID,  CONCAT(c.first_name, " ", c.last_name) AS `Customer Name`,
    seat_ID AS "Assigned seat", theater_id AS "Theater", t.time AS "Showtime",
    ca.card_number AS "Card number used"
    FROM customer c
    INNER JOIN ticket t ON c.email = t.customer_email
    INNER JOIN card ca ON ca.email = c.email
    INNER JOIN showtime s ON t.showtime_id = s.showtime_id
ORDER BY Ticket_ID ASC;
```

Ticket_ID	Customer Name	Assigned seat	Theater	Showtime	Card number used
1	Chutima Vittayakhetprapa	30	2	21:50:00	9915902291605240
2	Krittipong Phumchat	25	2	13:20:00	9334788541245698
3	Mintra Adusaradee	44	2	11:40:00	9575632489451236
5	Krittipong Phumchat	133	5	14:20:00	9334788541245698
6	Mintra Adusaradee	246	8	21:20:00	9575632489451236
9	Jirapat Siwawong	140	5	20:40:00	9456871211478256
10	Chisanuphong Samuttheva	41	2	22:20:00	9935429115724525
11	Chutima Vittayakhetprapa	233	8	16:30:00	9915902291605240
12	Chaveephong Rodkongruy	114	4	17:20:00	9325789314562673
13	Pakorn Somkhumnung	136	5	11:20:00	9275959291157245
14	Chaveephong Rodkongruy	94	3	13:40:00	9325789314562673
16	Jirapat Siwawong	201	7	20:20:00	9456871211478256
19	Chutima Vittayakhetprapa	18	1	15:50:00	9915902291605240
21	Krittipong Phumchat	43	1	15:50:00	9334788541245698
24	Kamolrat Pojjumnean	85	3	20:40:00	9123579478265874
25	Krittipong Phumchat	118	4	20:50:00	9334788541245698
26	Chutimol Jenpanichsakul	12	1	16:20:00	9561245898945236
28	Kamolrat Pojjumnean	10	1	12:20:00	9123579478265874
29	Kamolrat Pojjumnean	106	4	10:30:00	9123579478265874
31	Chaveephong Rodkongruy	308	9	19:40:00	9325789314562673
33	Krittipong Phumchat	292	9	12:20:00	9334788541245698
35	Krittipong Phumchat	325	9	12:20:00	9334788541245698

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