

Assignment

Ticket Booking System(SQL)

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Task 1.

```
-- 1. Create the database named "TicketBookingSystem"  
create database TicketBookingSystem;  
use Ticketbookingsystem
```



```
/* 2. Write SQL scripts to create the mentioned tables with appropriate data types, constraints, and  
relationships.  
• Venue  
• Event  
• Customers  
• Booking */
```

```
create table venue (  
venue_id int primary key,  
venue_name varchar(50) not null,  
address text  
);
```

```
create table events (  
event_id int primary key,  
event_name varchar(50) not null,  
event_date date,  
event_time time,  
total_seats int,
```

```

ticket_price decimal(10,2),
venue_id int,
event_type enum('Movie', 'Sports', 'Concert'),
foreign key (venue_id) references venue(venue_id));

```

```

create table customers (
customer_id int primary key,
customer_name char(50),
email varchar(50) unique,
phone_number bigint
);

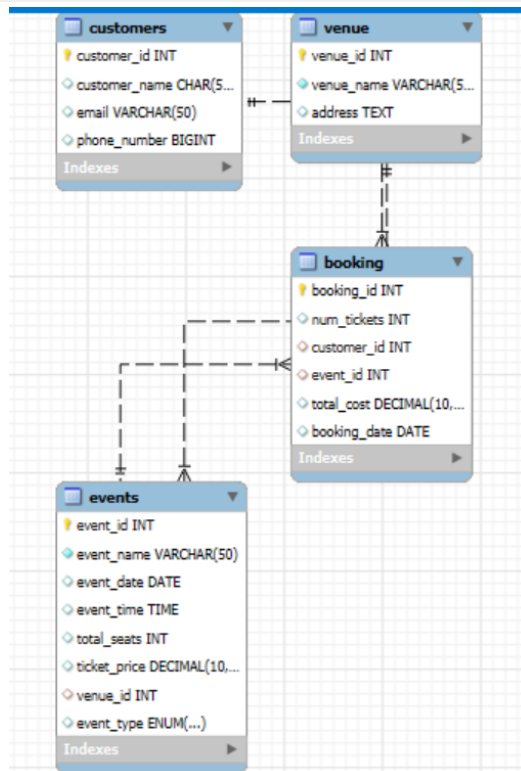
```

```

create table booking (
booking_id int primary key,
num_tickets int,
customer_id int,
event_id int,
total_cost decimal(10,2),
booking_date date,
foreign key (event_id) references events(event_id),
foreign key (customer_id) references customers(customer_id));

```

-- 3. Create an ERD (Entity Relationship Diagram) for the database.



-- 4. Create appropriate Primary Key and Foreign Key constraints for referential integrity.

-- answer included in answer 2

```
create table venue (  
venue_id int primary key,  
venue_name varchar(50) not null,  
address text  
);  
-- venue_id is primary key
```

```
create table events (  
event_id int primary key,  
event_name varchar(50) not null,  
event_date date,  
event_time time,  
total_seats int,  
ticket_price decimal(10,2),  
venue_id int,  
event_type enum('Movie', 'Sports', 'Concert'),  
foreign key (venue_id) references venue(venue_id));  
-- event_id is primary key and venue_id is the foreign key
```

```
create table customers (  
customer_id int primary key,  
customer_name char(50),  
email varchar(50) unique,  
phone_number bigint  
);  
-- customer_id is primary key
```

```
create table booking (  
booking_id int primary key,  
num_tickets int,  
customer_id int,  
event_id int,  
total_cost decimal(10,2),  
booking_date date,  
foreign key (event_id) references events(event_id),  
foreign key (customer_id) references customers(customer_id));  
-- has booking_id as primary key and event_id and customer_id as foreign key
```

Task 2.

-- 1. Write a SQL query to insert at least 10 sample records into each table.

insert into venue values

```
(101, 'Stadium A', 'Civil Lines'),  
(102, 'Concert Hall B', 'Manish Nagar'),  
(103, 'Arena C', 'IT Park'),  
(104, 'Ground D', 'Kalmeshwar Road'),  
(105, 'Theater E', 'Shankar Nagar'),  
(106, 'Park F', 'Walkers Street'),  
(107, 'Stadium G', 'Varora'),  
(108, 'Club H', 'JP Street'),  
(109, 'Expo Center I', 'Mankapur'),  
(110, 'Auditorium J', 'Dragonn Palace');
```

insert into events values

(1, 'Cricket Cup', '2025-04-15', '18:00:00', 20000, 1500.00, 101, 'Sports'),
(2, 'Rock Concert', '2025-05-01', '20:00:00', 12000, 2500.00, 102, 'Concert'),
(3, 'Football Local Cup', '2025-04-20', '19:30:00', 18000, 1800.00, 103, 'Sports'),
(4, 'Drama Night', '2025-04-25', '21:00:00', 3000, 800.00, 104, 'Movie'),
(5, 'Jazz Concert', '2025-04-30', '20:30:00', 5000, 2200.00, 105, 'Concert'),
(6, 'Movie Gala', '2025-05-03', '19:00:00', 4000, 1000.00, 106, 'Movie'),
(7, 'Boxing Show', '2025-05-05', '18:30:00', 6000, 1300.00, 107, 'Sports'),
(8, 'Music Fest', '2025-05-07', '20:00:00', 10000, 2100.00, 108, 'Concert'),
(9, 'Comedy Night', '2025-05-09', '19:00:00', 3500, 900.00, 109, 'Movie'),
(10, 'Tech Expo', '2025-05-11', '11:00:00', 15000, 2000.00, 110, 'Movie');

insert into customers values

(1, 'Aman', 'aman52@google.com', 987650000),
(2, 'Daksha', 'daksha322@google.com', 987651091),
(3, 'Vedant', 'vedant222@yahoo.com', 987652112),
(4, 'Sanjit', 'Sanjit786@yahoo.com', 987653033),
(5, 'Megha', 'megha21@google.com', 987654444),
(6, 'Satyam', 'satyam331@bing.com', 987655235),
(7, 'Gracey', 'gracey21@google.com', 987656696),
(8, 'Praneet', 'praneet2020@bing.com', 987657557),
(9, 'Vaibhav', 'vaibhav5012@google.com', 987656888),
(10, 'Shreya', 'shreya212@google.com', 9876590010);

insert into booking values

(1, 5, 1, 1, 7500.00, '2025-04-01'),
(2, 2, 2, 2, 5000.00, '2025-04-02'),
(3, 6, 3, 3, 10800.00, '2025-04-03'),
(4, 3, 4, 4, 2400.00, '2025-04-04'),
(5, 1, 5, 5, 2200.00, '2025-04-05'),
(6, 4, 6, 6, 4000.00, '2025-04-06'),
(7, 7, 7, 7, 9100.00, '2025-04-07'),
(8, 2, 8, 8, 4200.00, '2025-04-08'),
(9, 5, 9, 9, 4500.00, '2025-04-09'),
(10, 9, 10, 10, 18000.00, '2025-04-10');

update booking set booking_date = '2025-01-15' where booking_id = 1;
update booking set booking_date = '2025-02-20' where booking_id = 2;
update booking set booking_date = '2025-03-10' where booking_id = 3;
update booking set booking_date = '2024-12-25' where booking_id = 4;
update booking set booking_date = '2024-11-05' where booking_id = 5;
update booking set booking_date = '2025-04-01' where booking_id = 6;
update booking set booking_date = '2025-04-05' where booking_id = 7;
update booking set booking_date = '2025-03-25' where booking_id = 8;
update booking set booking_date = '2025-02-28' where booking_id = 9;
update booking set booking_date = '2025-01-02' where booking_id = 10;

```
-- 2. Write a SQL query to list all Events.
```

```
select * from events;
```

[illegible]

```
-- 3. Write a SQL query to select events with available tickets.
```

```
select *,total_seats as available_tickets from events where total_seats >0;
```

[illegible]


```
-- 7. Write a SQL query to retrieve events with available tickets that also have "Concert" in their name.
select *,total_seats as available_tickets from events
where total_seats >0 and event_name like '%concert%' ;
```

	event_id	event_name	event_date	event_time	total_seats	ticket_price	venue_id	event_type	available_tickets
▶	2	Rock Concert	2025-05-01	20:00:00	12000	2500.00	102	Concert	12000
	5	Jazz Concert	2025-04-30	20:30:00	5000	2200.00	105	Concert	5000
•	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
-- 8. Write a SQL query to retrieve users in batches of 5, starting from the 6th user.
select * from customers
limit 5 offset 5
```

	customer_id	customer_name	email	phone_number
▶	6	Satyam	satyam331@bing.com	987655235
	7	Gracey	gracey21@google.com	987656696
	8	Praneet	praneet2020@bing.com	987657557
	9	Vaibhav	vaibhav5012@google.com	987656888
	10	Shreya	shreya212@google.com	9876590010
•	NULL	NULL	NULL	NULL

```
-- 8. Write a SQL query to retrieve users in batches of 5, starting from the 6th user.
select * from customers
limit 5 offset 5
```

	customer_id	customer_name	email	phone_number
▶	6	Satyam	satyam331@bing.com	987655235
	7	Gracey	gracey21@google.com	987656696
	8	Praneet	praneet2020@bing.com	987657557
	9	Vaibhav	vaibhav5012@google.com	987656888
	10	Shreya	shreya212@google.com	9876590010
•	NULL	NULL	NULL	NULL


```
-- 12. Write a SQL query to select events name not start with 'x', 'y', 'z'
select * from events
where event_name not like 'x%'
      and event_name not like 'y%'
      and event_name not like 'z%';
```

	event_id	event_name	event_date	event_time	total_seats	ticket_price	venue_id	event_type
▶	1	Cricket Cup	2025-04-15	18:00:00	20000	1500.00	101	Sports
	2	Rock Concert	2025-05-01	20:00:00	12000	2500.00	102	Concert
	3	Football Local Cup	2025-04-20	19:30:00	18000	1800.00	103	Sports
	4	Drama Night	2025-04-25	21:00:00	3000	800.00	104	Movie
	5	Jazz Concert	2025-04-30	20:30:00	5000	2200.00	105	Concert
	6	Movie Gala	2025-05-03	19:00:00	4000	1000.00	106	Movie
	7	Boxing Show	2025-05-05	18:30:00	6000	1300.00	107	Sports
	8	Music Fest	2025-05-07	20:00:00	10000	2100.00	108	Concert
	9	Comedy Night	2025-05-09	19:00:00	3500	900.00	109	Movie
	10	Tech Expo	2025-05-11	11:00:00	15000	2000.00	110	Movie
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Task 3.

```
-- 1. Write a SQL query to List Events and Their Average Ticket Prices.
select event_name,avg(ticket_price) as avg_ticketprice
from events
group by event_name
```

	event_name	avg_ticketprice
▶	Cricket Cup	1500.000000
	Rock Concert	2500.000000
	Football Local Cup	1800.000000
	Drama Night	800.000000
	Jazz Concert	2200.000000
	Movie Gala	1000.000000
	Boxing Show	1300.000000
	Music Fest	2100.000000
	Comedy Night	900.000000
	Tech Expo	2000.000000

```
-- 2. Write a SQL query to Calculate the Total Revenue Generated by Events.
select event_id,sum(total_cost) as totalrevenue
from booking
group by event_id
```

	event_id	totalrevenue
▶	1	7500.00
	2	5000.00
	3	10800.00
	4	2400.00
	5	2200.00
	6	4000.00
	7	9100.00
	8	4200.00
	9	4500.00
	10	18000.00

-- 3. Write a SQL query to find the event with the highest ticket sales.

```
select e.event_name,max(num_tickets) as most_tickets
from events e
join booking b on e.event_id = b.event_id
group by event_name
order by most_tickets desc
limit 1
```

	event_name	most_tickets
▶	Tech Expo	9

-- 4. Write a SQL query to Calculate the Total Number of Tickets Sold for Each Event.

```
select e.event_name,sum(num_tickets) as total_sold
from events e,booking b
where e.event_id = b.event_id
group by e.event_id
```

	event_name	total_sold
▶	Cricket Cup	5
	Rock Concert	2
	Football Local Cup	6
	Drama Night	3
	Jazz Concert	1
	Movie Gala	4
	Boxing Show	7
	Music Fest	2
	Comedy Night	5
	Tech Expo	9

```
-- 5. Write a SQL query to Find Events with No Ticket Sales.
select event_id, event_name
from events
where event_id not in (select distinct event_id from booking);
```

	event_id	event_name
•	NULL	NULL

```
-- 6. Write a SQL query to Find the User Who Has Booked the Most Tickets.
select c.customer_name,b.customer_id ,max(num_tickets) as most_bought
from booking b
join customers c on c.customer_id=b.customer_id
group by customer_id
order by most_bought desc
limit 1
```

	customer_name	customer_id	most_bought
▶	Shreya	10	9

```
-- 7. Write a SQL query to List Events and the total number of tickets sold for each month.
select e.event_name,month(b.booking_date) as booking_month,sum(b.num_tickets)as total_tickets
from events e
join booking b on e.event_id = b.event_id
group by e.event_name,booking_month
order by booking_month
```

	event_name	booking_month	total_tickets
►	Cricket Cup	1	5
	Tech Expo	1	9
	Rock Concert	2	2
	Comedy Night	2	5
	Football Local Cup	3	6
	Music Fest	3	2
	Movie Gala	4	4
	Boxing Show	4	7
	Jazz Concert	11	1
	Drama Night	12	3

-- 8. Write a SQL query to calculate the average Ticket Price for Events in Each Venue.

```
select venue_name,avg(ticket_price) as avgticketprice
from events e
join venue v on e.venue_id=v.venue_id
group by venue_name
order by avgticketprice
```

	venue_name	avgticketprice
►	Ground D	800.000000
	Expo Center I	900.000000
	Park F	1000.000000
	Stadium G	1300.000000
	Stadium A	1500.000000
	Arena C	1800.000000
	Auditorium J	2000.000000
	Club H	2100.000000
	Theater E	2200.000000
	Concert Hall B	2500.000000

-- 9. Write a SQL query to calculate the total Number of Tickets Sold for Each Event Type.

```
select e.event_type, SUM(b.num_tickets) as total_tickets
from events e
join booking b on e.event_id = b.event_id
group by e.event_type;
```

	event_type	total_tickets
►	Sports	18
	Concert	5
	Movie	21

-- 10. Write a SQL query to calculate the total Revenue Generated by Events in Each Year.

```
select year(booking_date) as year,sum(total_cost) as revenue
from booking
group by year
```

	year	revenue
▶	2025	63100.00
	2024	4600.00

-- 11. Write a SQL query to list users who have booked tickets for multiple events.

```
select c.customer_name,count(distinct event_id) as event_count
from customers c
join booking b on c.customer_id = b.customer_id
group by c.customer_id
having event_count > 1;
```

	customer_name	event_count
--	---------------	-------------

-- 12. Write a SQL query to calculate the Total Revenue Generated by Events for Each User.

```
select c.customer_name ,sum(b.total_cost) as total_revenue
from customers c
join booking b on c.customer_id=b.customer_id
group by c.customer_name,c.customer_id
```

	customer_name	total_revenue
▶	Aman	7500.00
	Daksha	5000.00
	Vedant	10800.00
	Sanjit	2400.00
	Megha	2200.00
	Satyam	4000.00
	Gracey	9100.00
	Praneet	4200.00
	Vaibhav	4500.00
	Shreya	18000.00

-- 13. Write a SQL query to calculate the Average Ticket Price for Events in Each Category and Venue.

```
select e.event_type,v.venue_name,avg(ticket_price)as avgticketprice
from events e
join venue v on e.venue_id=v.venue_id
group by e.event_type,v.venue_id
```

	event_type	venue_name	avgticketprice
▶	Sports	Stadium A	1500.000000
	Concert	Concert Hall B	2500.000000
	Sports	Arena C	1800.000000
	Movie	Ground D	800.000000
	Concert	Theater E	2200.000000
	Movie	Park F	1000.000000
	Sports	Stadium G	1300.000000
	Concert	Club H	2100.000000
	Movie	Expo Center I	900.000000
	Movie	Auditorium J	2000.000000

/*14. Write a SQL query to list Users and the Total Number of Tickets They've Purchased in the Last 30 Days.*/

```
select c.customer_name, sum(num_tickets) as last30days_tickets
from customers c
join booking b on c.customer_id=b.customer_id
where b.booking_date >= curdate() - interval 30 day
group by c.customer_name
```

	customer_name	last30days_tickets
▶	Satyam	4
	Gracey	7
	Praneet	2

Task 4.

-- 1. Calculate the Average Ticket Price for Events in Each Venue Using a Subquery.

```
select v.venue_name, (select avg(ticket_price)
                      from events e
                      where e.venue_id=v.venue_id) as avgticketprice
from venue v
```

	venue_name	avgticketprice
▶	Stadium A	1500.000000
	Concert Hall B	2500.000000
	Arena C	1800.000000
	Ground D	800.000000
	Theater E	2200.000000
	Park F	1000.000000
	Stadium G	1300.000000
	Club H	2100.000000
	Expo Center I	900.000000
	Auditorium J	2000.000000

-- 2.Find Events with More Than 50% of Tickets Sold using subquery.

```
select event_name
from events
where event_id IN (
    select e.event_id
    from events e
    join booking b on e.event_id = b.event_id
    group by e.event_id, e.total_seats
    having sum(b.num_tickets) > 0.5 * e.total_seats
):
```

	event_name

-- 3.Calculate the Total Number of Tickets Sold for Each Event.

```
select e.event_name,(select sum(num_tickets)
                      from booking b
                      where e.event_id=b.event_id) as total_ticketssold
from events e
```

	event_name	total_ticketssold
►	Cricket Cup	5
	Rock Concert	2
	Football Local Cup	6
	Drama Night	3
	Jazz Concert	1
	Movie Gala	4
	Boxing Show	7
	Music Fest	2
	Comedy Night	5
	Tech Expo	9

```
-- 4. Find Users Who Have Not Booked Any Tickets Using a NOT EXISTS Subquery.
select customer_name
from customers c
where not exists (select * from booking b where b.customer_id=c.customer_id);
-- every customer booked a ticket
```

	customer_name

```
-- 5. List Events with No Ticket Sales Using a NOT IN Subquery.
select event_name
from events
where event_id not in ( select distinct event_id
                        from booking);
-- every event has sold some tickets
```

	event_name

```
-- 6. Calculate the Total Number of Tickets Sold for Each Event Type Using a Subquery in the FROM Clause.
select event_type ,sum(total_tickets) as tickets_sold
from (
    select e.event_type,b.num_tickets as total_tickets
    from booking b
    join events e on e.event_id=b.event_id)as sub
group by event_type;
```

	event_type	tickets_sold
▶	Sports	18
	Concert	5
	Movie	21

```

/* 7. Find Events with Ticket Prices Higher Than the Average Ticket Price Using a Subquery in the
WHERE Clause.*/
select event_name,ticket_price
from events
where ticket_price > (
    select avg(ticket_price)
    from events);

```

	event_name	ticket_price
▶	Rock Concert	2500.00
	Football Local Cup	1800.00
	Jazz Concert	2200.00
	Music Fest	2100.00
	Tech Expo	2000.00

-- 8. Calculate the Total Revenue Generated by Events for Each User Using a Correlated Subquery.

```

select c.customer_name,(select sum(total_cost)
    from booking b
    where c.customer_id=b.customer_id) as Total_revenue
from customers c

```

	customer_name	Total_revenue
▶	Aman	7500.00
	Daksha	5000.00
	Vedant	10800.00
	Sanjit	2400.00
	Megha	2200.00
	Satyam	4000.00
	Gracey	9100.00
	Praneet	4200.00
	Vaibhav	4500.00
	Shreya	18000.00

-- 9. List Users Who Have Booked Tickets for Events in a Given Venue Using a Subquery in the WHERE Clause.

```
select customer_name
from customers
where customer_id in (
    select b.customer_id
    from booking b
    join events e on e.event_id=b.event_id
    where venue_id=102);
```

	customer_name
▶	Daksha

-- 10. Calculate the Total Number of Tickets Sold for Each Event Category Using a Subquery with GROUP BY.

```
select event_type ,sum(total_tickets) as Total_ticketssold
from(select e.event_type,b.num_tickets as total_tickets
    from booking b
    join events e on e.event_id = b.event_id) as sub
group by event_type
```

	event_type	Total_ticketssold
▶	Sports	18
	Concert	5
	Movie	21

-- 11.Find Users Who Have Booked Tickets for Events in each Month Using a Subquery with DATE_FORMAT.

```
select c.customer_name,date_format(b.booking_date,'%Y-%m')as booking_month
from customers c
join booking b on c.customer_id=b.customer_id
```

	customer_name	booking_month
▶	Aman	2025-01
	Daksha	2025-02
	Vedant	2025-03
	Sanjit	2024-12
	Megha	2024-11
	Satyam	2025-04
	Gracey	2025-04
	Praneet	2025-03
	Vaibhav	2025-02
	Shreya	2025-01

-- 12.Calculate the Average Ticket Price for Events in Each Venue Using a Subquery

```
select v.venue_name,(select avg(e.ticket_price)
from events e
where v.venue_id=e.venue_id) as avgticketprice
from venue v
```

	venue_name	avgticketprice
▶	Stadium A	1500.000000
	Concert Hall B	2500.000000
	Arena C	1800.000000
	Ground D	800.000000
	Theater E	2200.000000
	Park F	1000.000000
	Stadium G	1300.000000
	Club H	2100.000000
	Expo Center I	900.000000
	Auditorium J	2000.000000