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DataBase 1: Sales Description

Database Schema

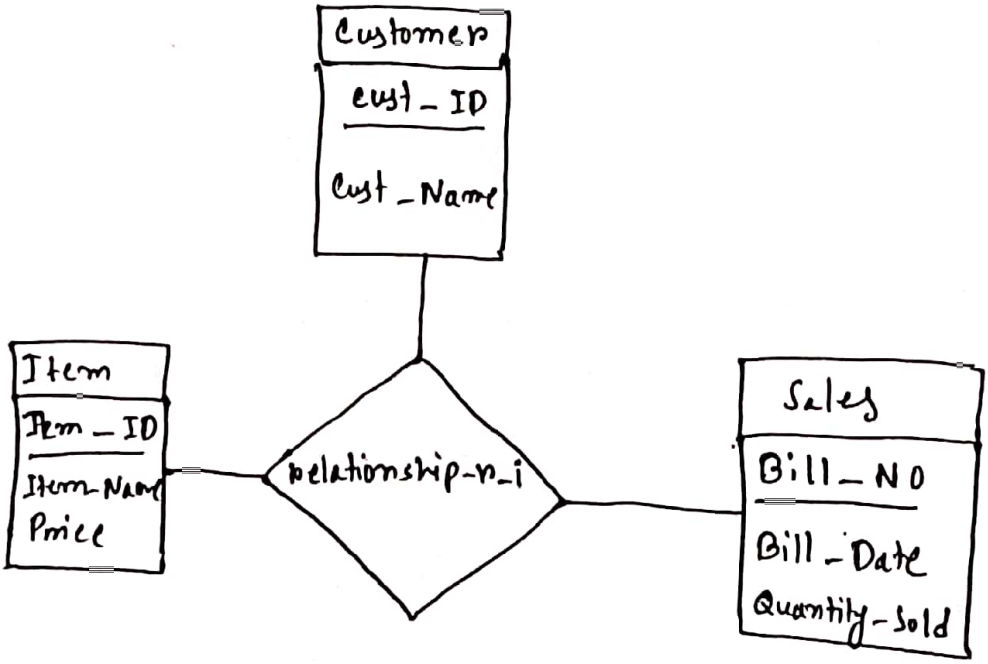
Customer (cust_id : int , cust_name : string)

relation_n_i (cust_id, item_id , bill_no)

Item (item_id: int , item_name: string , price: int)

Sale (bill_no : int, bill_date : date, qty_sod : int)

Entity Relationship Model



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Submitted Queries

⇒
```
CREATE TABLE Customer (
        Cust_ID  int NOT NULL,
        Cust-Name  varchar(30),
        PRIMARY KEY (CUST_ID)
);
```

⇒
```
CREATE TABLE ITEM (
        ITEM_ID  int NOT_NULL,
        Item_Name  varchar(30),
        price int,
        PRIMARY KEY (Item_ID)
);
```

⇒
```
CREATE TABLE Sales (
        Bill_No int NOT NULL,
        Bill_Date Date,
        Quantity_Sold int,
        PRIMARY KEY (Bill_No)
);
```

⇒
```
CREATE TABLE Relationship_R_I (
        cust-ID int NOT_NULL,
        Item_ID int NOT_NULL,
        Bill_NO int NOT NULL
);
```

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Customer Table

Cust_ID	Cust_Name
1	NAim
2	Antor
3	Sohan
4	Yeasir
5	Abid
6	Soumik
7	Fariz
8	Sadaf
9	Jion
10	Asif

Item Table

Item_ID	Item_Name	price
1	Jersey	1000
2	Trouser	1500
3	Boot	2000
4	Sock	100
5	Guards	300
6	Football	400
7	Shorts	200
8	Goalposts	3000
9	Corner Flags	1500
10	Whistle	100

Sales Table

Bill_NO	Bill_Date	Quantity_Sold
1	2021-07-01	5
2	2021-07-02	5
3	2021-07-03	10
4	2021-07-04	10
5	2021-07-05	5
6	2021-07-06	15
7	2021-07-07	10
8	2021-07-08	5
9	2021-07-09	5
10	2021-07-10	10
11	2021-07-11	5
12	2021-07-12	5
13	2021-07-13	5
14	2021-07-14	10
15	2021-07-15	5
16	2021-07-16	5
17	2021-07-17	5
18	2021-07-18	5
19	2021-07-19	5
20	2021-07-20	10
21	2021-07-21	5
22	2021-07-22	5
23	2021-07-23	5
24	2021-07-24	5
25	2021-07-25	5
26	2021-07-26	10
27	2021-07-27	5
28	2021-07-28	5
29	2021-07-29	5
30	2021-07-30	10
31	2021-07-31	5

Relationship_r_i

Cust_ID	Item_ID	Bill_NO
1	3	5
2	4	6
3	5	7
4	6	8
5	7	9
6	8	10
7	9	11
8	10	12
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	1	15
8	2	16
9	3	17
10	4	18
1	5	19
2	6	20
3	7	21
4	8	22
5	8	23
6	9	24
7	7	25
8	8	26
9	9	27
10	10	28
10	10	29
10	10	30
3	5	31

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iii. Give a count of how many items have been purchased by each customer in different bill number:

```
SELECT Bill_NO, Cust_ID, Cust_Name, COUNT(Item_ID) as
NUM_OF_Items
FROM customer
NATURAL JOIN relationship_n_i
NATURAL JOIN item
NATURAL JOIN Sales
GROUP BY (Bill_NO)
```

Bill_NO	Cust_ID	Cust_Name	Num_Of_Items
1	1	NAim	1
2	2	Antor	1
3	3	Sohan	1
4	4	Yeasir	1
5	1	NAim	2
6	2	Antor	2
7	3	Sohan	1
8	4	Yeasir	1
9	5	Abid	1
10	6	Soumik	1
11	7	Fariz	1
12	8	Sadaf	1
15	7	Fariz	1
16	8	Sadaf	1
17	9	Jion	1
18	10	Asif	1
19	1	NAim	1
20	2	Antor	1
21	3	Sohan	1
22	4	Yeasir	1
23	5	Abid	1
24	6	Soumik	1
25	7	Fariz	1
26	8	Sadaf	1
27	9	Jion	1
28	10	Asif	1
29	10	Asif	1
30	10	Asif	1
31	3	Sohan	1

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iv. List the total bill amount with the quantity sold, total price of the items:

```
SELECT Item_ID, Item_Name, price, Quantity_Sold,
(price * Quantity_Sold) as Total_Amount, Bill_Date
FROM item
NATURAL JOIN relationship_n_i
NATURAL JOIN sales
ORDER BY Item_ID, Bill_Date
```

Item_ID ▲ 1	Item_Name	price	Quantity_Sold	Total_Amount	Bill_Date ▲ 2
1	Jersey	1000	5	5000	2021-07-01
1	Jersey	1000	5	5000	2021-07-15
2	Trouser	1500	5	7500	2021-07-02
2	Trouser	1500	5	7500	2021-07-16
3	Boot	2000	10	20000	2021-07-03
3	Boot	2000	5	10000	2021-07-05
3	Boot	2000	5	10000	2021-07-17
4	Sock	100	10	1000	2021-07-04
4	Sock	100	15	1500	2021-07-06
4	Sock	100	5	500	2021-07-18
5	Guards	300	5	1500	2021-07-05
5	Guards	300	10	3000	2021-07-07
5	Guards	300	5	1500	2021-07-19
5	Guards	300	5	1500	2021-07-31
6	Football	400	15	6000	2021-07-06
6	Football	400	5	2000	2021-07-08
6	Football	400	10	4000	2021-07-20
7	Shorts	200	5	1000	2021-07-09
7	Shorts	200	5	1000	2021-07-21
7	Shorts	200	5	1000	2021-07-25
8	Goalposts	3000	10	30000	2021-07-10
8	Goalposts	3000	5	15000	2021-07-22
8	Goalposts	3000	5	15000	2021-07-23
8	Goalposts	3000	10	30000	2021-07-26
9	Corner Flags	1500	5	7500	2021-07-11
9	Corner Flags	1500	5	7500	2021-07-24
9	Corner Flags	1500	5	7500	2021-07-27
10	Whistle	100	5	500	2021-07-12
10	Whistle	100	5	500	2021-07-28
10	Whistle	100	5	500	2021-07-29
10	Whistle	100	10	1000	2021-07-30

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v. Determine the total sold of a particular item in the month July 2021:

```
SELECT Item_ID, Item_Name, price, SUM(Quantity_Sold) AS
Total_Sold, SUM(price * Quantity_Sold) as Total_Amount
FROM item
NATURAL JOIN relationship_p_i
NATURAL JOIN sale
WHERE Bill_DATE LIKE '2021-07-__'
GROUP BY Item_ID
```

Item_ID	Item_Name	price	Total_Sold	Total_Amount
1	Jersey	1000	10	10000
2	Trouser	1500	10	15000
3	Boot	2000	20	40000
4	Sock	100	30	3000
5	Guards	300	25	7500
6	Football	400	30	12000
7	Shorts	200	15	3000
8	Goalposts	3000	30	90000
9	Corner Flags	1500	15	22500
10	Whistle	100	25	2500

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vi. Produce 20% less bill for a customer who have bill more than BDT 3000:

```
SELECT Bill_Date, Cust_ID, cust_Name, Item_Name, price
Quantity_Sold As Bought, (price * Quantity_Sold) AS Total_Bill,
CASE
   WHEN (price* Quantity_Sold) >3000 THEN (SELECT (price* Quantity_Sold)
   - ((price* Quantity_Sold)* 0.20))
   ELSE (price * Quantity Sold)
END AS Discount_Bill
FROM customer
NATURAL JOIN relationship_r_i
NATURAL JOIN item
NATURAL JOIN sales
ORDER BY Bill_DATE
```

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Bill_Date ▲ 1	Cust_ID	Cust_Name	Item_Name	price	Bought	Total_Bill	Disount_Bill
2021-07-01	1	NAim	Jersey	1000	5	5000	4000.00
2021-07-02	2	Antor	Trouser	1500	5	7500	6000.00
2021-07-03	3	Sohan	Boot	2000	10	20000	16000.00
2021-07-04	4	Yeasir	Sock	100	10	1000	1000.00
2021-07-05	5	Abid	Guards	300	5	1500	1500.00
2021-07-05	1	NAim	Boot	2000	5	10000	8000.00
2021-07-06	2	Antor	Sock	100	15	1500	1500.00
2021-07-06	6	Soumik	Football	400	15	6000	4800.00
2021-07-07	3	Sohan	Guards	300	10	3000	3000.00
2021-07-08	4	Yeasir	Football	400	5	2000	2000.00
2021-07-09	5	Abid	Shorts	200	5	1000	1000.00
2021-07-10	6	Soumik	Goalposts	3000	10	30000	24000.00
2021-07-11	7	Fariz	Corner Flags	1500	5	7500	6000.00
2021-07-12	8	Sadaf	Whistle	100	5	500	500.00
2021-07-15	7	Fariz	Jersey	1000	5	5000	4000.00
2021-07-16	8	Sadaf	Trouser	1500	5	7500	6000.00
2021-07-17	9	Jion	Boot	2000	5	10000	8000.00
2021-07-18	10	Asif	Sock	100	5	500	500.00
2021-07-19	1	NAim	Guards	300	5	1500	1500.00
2021-07-20	2	Antor	Football	400	10	4000	3200.00
2021-07-21	3	Sohan	Shorts	200	5	1000	1000.00
2021-07-22	4	Yeasir	Goalposts	3000	5	15000	12000.00
2021-07-23	5	Abid	Goalposts	3000	5	15000	12000.00
2021-07-24	6	Soumik	Corner Flags	1500	5	7500	6000.00
2021-07-25	7	Fariz	Shorts	200	5	1000	1000.00
2021-07-26	8	Sadaf	Goalposts	3000	10	30000	24000.00
2021-07-27	9	Jion	Corner Flags	1500	5	7500	6000.00
2021-07-28	10	Asif	Whistle	100	5	500	500.00
2021-07-29	10	Asif	Whistle	100	5	500	500.00
2021-07-30	10	Asif	Whistle	100	10	1000	1000.00
2021-07-31	3	Sohan	Guards	300	5	1500	1500.00

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Database 2: Design Tour

Database Schema

- Bus (Bus_NO NOT NULL int(6), Source-Place varchar(20), Destination varchar(20), Coach-Type varchar(10), Fair int(4)
- Reservation (Pnr_NO, int(9), No-of-Seats int(8), Address varchar(50), contact-NO int(10), status char(3))
- Ticket (Ticket_NO NOT NULL int(9), Age int(4), Sex NOT NULL char(4), source-Place varchar(20), Destination varchar(20), Dep_Time varchar(4), Journey-Date Date)
- Rse Passenger (Ticket_No NOT NULL int(9), Name varchar(40), Age int(4), Sex not null char(4), contact_NO int(10), Foreign key Ticket_NO)
- Cancellation (Pnr_no, int(9), No_of_Seats int(8), Address varchar(50), contact_No int(10), Status char(3), Foreign key Pnr_no, contact_no)
- bus_pnr (Bus_NO NOT NULL int(5), Pnr-NO int(9)
- bus_tic (Bus_NO NOT NULL int(5), Ticket_NO NOTNULL int(9))

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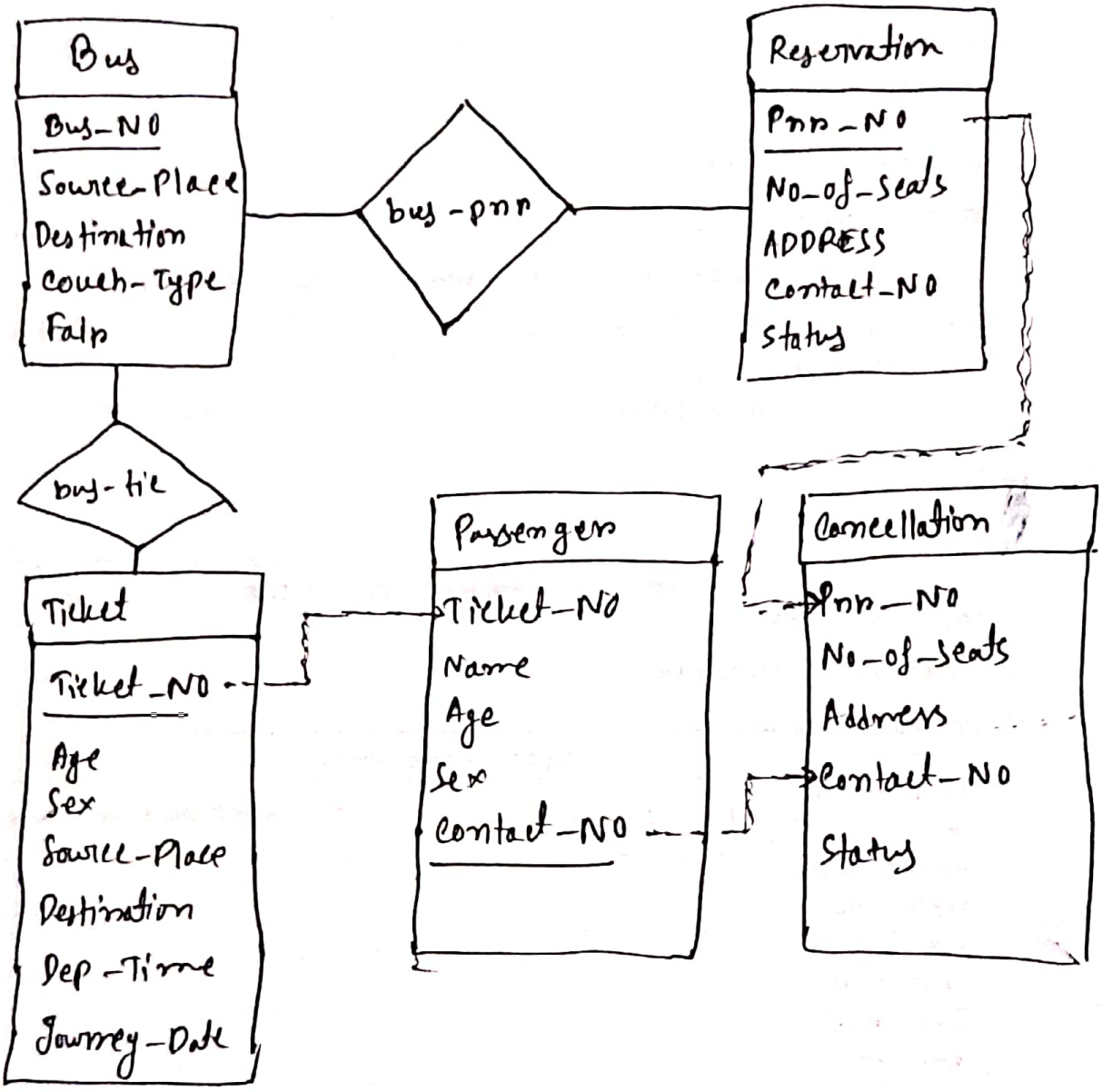
Entity Model Relationship



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Saifur

Submitted Queries

⇒ Create Table Bus (

Bus_NO int(5) NOT NULL,
Source_Place varchar(20),
Destination varchar(20),
Coach-Type varchar(10),
Fair int(4),
PRIMARY KEY (Bus_NO)

);

⇒ CREATE TABLE Reservation (

Pnr_NO int(9) NOT NULL,
No_of_Seats int(8),
Address varchar(50),
Contact_NO int(10),
Status_Is char(3),
PRIMARY KEY (Pnr_NO)

);

⇒ CREATE TABLE Ticket (

Ticket_NO int(9) NOT NULL,
Age int(4),
Sex char(4) NOT NULL,
Source_Place varchar(20),
Destination varchar(20),
Dep_Time varchar(4),
Journey_Date Date, PRIMARY KEY(Ticket_NO));

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```
CREATE TABLE Passenger(
    Ticket_NO int(9) NOT NULL,
    Name varchar(40),
    Age int(4),
    Sex char(4) NOT NULL,
    Contact_NO int(10),
    Primary key (contact_NO),
    foreign key (Ticket_NO) References Ticket (Ticket_NO)
);
```

```
⇒ CREATE TABLE Cancellation(
    Pnr_NO int(9) NOT NULL,
    NO_of_seats int(8),
    Address varchar(50),
    Contact_NO int(10),
    Status_IS char(3),
    Foreign key (Pnr_no) references Reservation (Pnr_NO)
    Foreign key (contact_NO) references Passenger (contact_NO)
);
```

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Bus Table

Bus_NO	Source_Place	Destination	Couch_Type	Fair
1	Rajshahi	Dhaka	AC	1050
2	Rajshahi	Khulna	AC	1050
3	Rajshahi	Chattogram	AC	2100
4	Rajshahi	Sylhet	AC	1500
5	Rajshahi	Natore	AC	100
6	Rajshahi	Sirajgonj	AC	500
7	Rajshahi	Pabna	AC	300
8	Rajshahi	Chapai	AC	200
9	Rajshahi	Noagaon	AC	400
10	Rajshahi	Bogura	AC	600
11	Rajshahi	Dhaka	Non AC	750
12	Rajshahi	Khulna	Non AC	750
13	Rajshahi	Chattogram	Non AC	1500
14	Rajshahi	Sylhet	Non AC	1200
15	Rajshahi	Natore	Non AC	80
16	Rajshahi	Sirajgonj	Non AC	350
17	Rajshahi	Pabna	Non AC	200
18	Rajshahi	Chapai	Non AC	150
19	Rajshahi	Noagaon	Non AC	250
20	Rajshahi	Bogura	Non AC	400
21	Dhaka	Rajshahi	AC	1050
22	Rajshahi	Dhaka	AC	1000

Passenger Table

Ticket_NO	Name	Age	Sex	Contact_NO
7	Jion	18	M	1738612345
5	Yeasir	15	M	1738661234
2	Antor	14	M	1738663123
3	Susmita	12	F	1738663456
1	NAim	18	M	1738663624
4	Sohan	13	M	1738663789
6	Abid	16	M	1738665678
8	Soumik	19	M	1738678912

Cancellation Table

Pnr_NO	No_Of_Seats	Address	Contact_NO	Status_IS
1000005	2	Khulipara, Rajshahi	1738661234	YES
1000006	1	Sobjipara, Rajshahi	1738665678	YES
1000007	9	Padma Abashik, Rajshahi	1738612345	YES
1000008	10	Reshom Potti, Rajshahi	1738678912	YES

Relationship bus_pnr

Bus_NO	Pnr_NO
1	1000001
22	1000002
22	1000003
22	1000004
21	1000005
21	1000006
21	1000007
19	1000008

Reservation Table

Pnr_NO	No_Of_Seats	Address	Contact_NO	Status_IS
1000001	3	Seroil, Rajshahi	1738663624	YES
1000002	4	Dargapara, Rajshahi	1738663123	YES
1000003	5	Dhanmondi, Dhaka	1738663456	YES
1000004	6	Machuyapara, Rajshahi	1738663789	YES
1000005	2	Khulipara, Rajshahi	1738661234	YES
1000006	1	Sobjipara, Rajshahi	1738665678	YES
1000007	9	Padma Abashik, Rajshahi	1738612345	YES
1000008	10	Reshom Potti, Rajshahi	2147483647	YES

Ticket Table

Ticket_NO	Age	Sex	Source_Place	Destination	Dep_Time	Journey_Date
1	18	M	Dhaka	Rajshahi	1200	2021-07-01
2	14	M	Rajshahi	Dhaka	1200	2021-07-01
3	12	F	Rajshahi	Dhaka	1200	2021-07-01
4	13	M	Rajshahi	Dhaka	1200	2021-07-01
5	15	M	Dhaka	Rajshahi	0100	2021-07-01
6	16	M	Dhaka	Chattogram	1200	2021-07-02
7	18	M	Rajshahi	Chattogram	1200	2021-07-03
8	19	M	Rajshahi	Dhaka	0100	2021-07-04
9	20	M	Rajshahi	Noagaon	0100	2021-07-05
10	40	M	Dhaka	Rajshahi	1200	2021-07-06

Relationship bus_tic

Bus_NO	Ticket_NO
1	8
22	2
22	3
22	4
21	1
21	5
21	10
19	9

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1. How many passengers booked tickets for bus no 22 which is scheduled to run from Rajshahi to Dhaka on 1st July 21 at 12:00 PM:

```
Select Sum(No_of_Seats) AS Total_Ticket_Booked
FROM Reservation
NATURAL JOIN bus_pnr
NATURAL JOIN bus
NATURAL JOIN bus_tic
NATURAL JOIN ticket
WHERE Bus_NO = 22 AND Source_Place = 'Rajshahi' AND
Destination = 'Dhaka' AND Journey_Date = '2021-07-01' AND
Dep_Time = '1200'
```

Total_Ticket_Booked
45

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2. How many tickets have been cancelled in the month of July 2021:

```
Select Count (Ticket_NO) AS cancelled_Tickets
FROM Cancellation
NATURAL Join bus_pnr
NATURAL JOIN bus_tic
NATURAL JOIN ticket
WHERE Journey_Date like '2021-07-__'
```

cancelled_Tickets
10

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Safwa

3. List the details of the customer who are travelling under age of 18 in bus no 22 on 1st July 2021 at 12:00PM.

```
Select Name, Sex, Age, Contact_NO FROM Passenger
NATURAL JOIN Ticket
NATURAL JOIN bus_tic
NATURAL JOIN bus
WHERE Bus_NO = 22 AND Journey_Date = '2021-07-01' AND
Dep_Time = '1200' AND Age < 18
```

Name	Sex	Age	Contact_NO
Anton	M	14	1738663123
Sushmita	F	12	1738663456
Sohan	M	13	1738663789

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