DBMS Lab 9
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Assignment1:

Write a trigger on insert to the 'compartment' table when a new compartment gets added to a train and make sure that total number of compartments available in the train does not exceed 4.

```
DELIMITER
    $$
CREATE TRIGGER insert_compartment BEFORE INSERT ON
    compartment_204 FOR EACH ROW
BEGIN
    DECLARE
        msg VARCHAR(255) ;
    SET
        msg =('No. of compartments>4') ; IF(
        SELECT
            COUNT(*)
        FROM
            compartment_204
        WHERE
            compartment_204.train_number = NEW.train_number
        GROUP BY
            compartment_204.train_number
    ) >= 4 THEN SIGNAL SQLSTATE '45000'
SET MESSAGE_TEXT
    = msg ;
END IF ;
END $$
DELIMITER
    ;
```

✔️ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2572 seconds.)

```
CREATE TRIGGER insert_compartment BEFORE INSERT ON compartment_204 FOR EACH ROW BEGIN DECLARE msg VARCHAR(255) ; SET msg =('No. of compartments>4')
; IF( SELECT COUNT(*) FROM compartment_204 WHERE compartment_204.train_number = NEW.train_number GROUP BY compartment_204.train_number ) >= 4 THEN
SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = msg ; END IF ; END;
```

Before inserting into compartment table

```sql
SELECT compartment_204.train_number, COUNT(*) AS 'no of compartments' FROM compartment_204 GROUP BY compartment_204.train_number;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⌄   Filter rows: Search this table

Extra options

train_number	no of compartments
25260	3
25261	5
58450	4
58451	3
62620	2
62621	5

Insert into compartment (invalid entry)

```sql
INSERT INTO compartment_204 VALUES('S03', 'I Class', 12, 2, 58450);
```

Error

SQL query: Copy

```sql
INSERT INTO compartment_204
VALUES('S03', 'I Class', 12, 2, 58450);
```

MySQL said: ⓘ

#1644 - No. of compartments>4

Insert into compartment (valid entry)

```sql
INSERT INTO compartment_204 VALUES('S03', 'I Class', 12, 2, 58451);
```

✔ 1 row inserted. (Query took 0.0011 seconds.)

```sql
INSERT INTO compartment_204 VALUES('S03', 'I Class', 12, 2, 58451);
```

Assignment2:

Create a trigger to add payment information to the backup table when we try to delete information from the 'ticket' table and create a backup table with all the attributes of ticket, ticket passenger and paymentinfo. When trigger executes during deletion on the ticket table, first fetch all data from ticket, ticket passenger, paymentinfo and add it to the backup table and then allow deletion. (Please check for referential integrity constraint, if cascade option not added during lab3 , please use an alter table for adding required constraint else trigger cannot be executed.)

Create backup table

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.6130 seconds.)

```sql
CREATE TABLE backup_table( Transaction_no INT PRIMARY KEY, Bank VARCHAR(30), Card_No VARCHAR(20), Price DECIMAL(10, 2), PNR VARCHAR(10) NOT NULL );
```

Create trigger

```sql
DELIMITER
  $$
CREATE TRIGGER delete_ticket BEFORE DELETE
ON
  ticket_204 FOR EACH ROW
BEGIN
  INSERT INTO backup_table(
    backup_table.Transaction_no,
    backup_table.Bank,
    backup_table.Card_No,
    backup_table.Price,
    backup_table.PNR
  )
SELECT
  payment_info_204.Transaction_no,
  payment_info_204.bank,
  payment_info_204.card_no,
  payment_info_204.price,
  payment_info_204.PNR
FROM
  payment_info_204
WHERE
  payment_info_204.PNR = old.PNR ;
DELETE
FROM
  payment_info_204
WHERE
  payment_info_204.PNR = old.PNR ;
DELETE
FROM
  ticket_passenger_204
WHERE
```

ticket_passenger_204.PNR = old.PNR ;
END $$
DELIMITER
        ;

```
CREATE TRIGGER delete_ticket BEFORE DELETE ON ticket_204 FOR EACH ROW BEGIN INSERT INTO backup_table( backup_table.Transaction_no,
backup_table.Bank, backup_table.Card_No, backup_table.Price, backup_table.PNR ) SELECT payment_info_204.Transaction_no, payment_info_204.bank,
payment_info_204.card_no, payment_info_204.price, payment_info_204.PNR FROM payment_info_204 WHERE payment_info_204.PNR = old.PNR ; DELETE FROM
payment_info_204 WHERE payment_info_204.PNR = old.PNR ; DELETE FROM ticket_passenger_204 WHERE ticket_passenger_204.PNR = old.PNR ; END;
```

Before deleting from ticket_204

```
SELECT * FROM ticket_204;
```

PNR	Train_No	Travel_date	Passenger_id	departure	Train_Type	compartment_type	compartment_No	arrival	departure_place	arrival_place
PNR001	62621	2022-08-07	ADM_001	16:00:00	Superfast	I Class	F01	20:30:00	Bengaluru	Chennai
PNR002	62620	2022-08-14	ADM_001	08:00:00	Superfast	I Class	F02	12:25:00	Chennai	Bengaluru
PNR003	25261	2022-08-01	ADM_003	18:00:00	Mail	III Class	G02	07:30:00	Chennai	Mangaluru
PNR004	25260	2022-08-15	ADM_003	19:15:00	Mail	II Class	S02	08:00:00	Mangaluru	Chennai
PNR005	58451	2022-08-03	USR_002	06:00:00	Fast	III Class	G01	14:00:00	Bengaluru	Mangaluru
PNR006	58450	2033-08-04	USR_002	08:00:00	Fast	II Class	S01	10:15:00	Mangaluru	Bengaluru
PNR007	62621	2022-08-07	ADM_002	18:00:00	Superfast	II Class	S01	20:30:00	Bangarpet	Chennai
PNR008	62620	2022-08-02	ADM_002	08:00:00	Superfast	I Class	F01	09:00:00	Chennai	Bangarpet
PNR010	25260	2022-08-19	USR_007	19:15:00	Mail	II Class	S01	23:15:00	Mangaluru	Kannur
PNR011	62621	2022-08-22	USR_008	19:00:00	Superfast	I Class	F01	20:30:00	Katapadi	Chennai
PNR012	58451	2022-08-11	USR_009	11:00:00	Fast	I Class	F01	14:00:00	Subramanya	Mangaluru
PNR014	25260	2022-08-17	USR_010	23:15:00	Mail	II Class	S01	04:30:00	Kannur	Palakkad
PNR015	25260	2022-08-05	USR_012	04:30:00	Mail	II Class	S01	08:00:00	Palakkad	Chennai
PNR021	62621	2021-10-22	USR_008	16:00:00	Superfast	I Class	F01	20:30:00	Bengaluru	Chennai

Delete row from ticket table

```
DELETE FROM ticket_204 WHERE ticket_204.PNR = 'PNR006';
```

Payment info after deletion

```
SELECT * FROM `payment_info_204`
```

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☐ Show all | Number of rows: 25 ⌄ Filter rows: Search this table

Extra options

Transaction_no	price	card_no	bank	PNR
243535	640.20	2436470000000000	UNION BANK	PNR012
342344	1665.20	5623570000000000	IOB	PNR001
354364	352.00	5768790000000000	CANARA BANK	PNR014
576768	392.85	7563560000000000	ICICI	PNR007
676756	1660.60	7367560000000000	CANARA BANK	PNR002
746745	667.00	2545640000000000	KOTAK	PNR008
758900	208.00	2432660000000000	UNION BANK	PNR015
867546	419.20	4657690000000000	UNION BANK	PNR010
867547	393.00	7466350000000000	SBI	PNR011
978776	1058.20	154978597435874	UNION BANK	PNR003

Ticket after deleting row

```
SELECT * FROM `ticket_204`
```

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☐ Show all | Number of rows: 25 ⌄ Filter rows: Search this table

Extra options

PNR	Train_No	Travel_date	Passenger_id	departure	Train_Type	compartment_type	compartment_No	arrival	departure_place	arrival_place
PNR001	62621	2022-08-07	ADM_001	16:00:00	Superfast	I Class	F01	20:30:00	Bengaluru	Chennai
PNR002	62620	2022-08-14	ADM_001	08:00:00	Superfast	I Class	F02	12:25:00	Chennai	Bengaluru
PNR003	25261	2022-08-01	ADM_003	18:00:00	Mail	III Class	G02	07:30:00	Chennai	Mangaluru
PNR007	62621	2022-08-07	ADM_002	18:00:00	Superfast	II Class	S01	20:30:00	Bangarpet	Chennai
PNR008	62620	2022-08-02	ADM_002	08:00:00	Superfast	I Class	F01	09:00:00	Chennai	Bangarpet
PNR010	25260	2022-08-19	USR_007	19:15:00	Mail	II Class	S01	23:15:00	Mangaluru	Kannur
PNR011	62621	2022-08-22	USR_008	19:00:00	Superfast	I Class	F01	20:30:00	Katapadi	Chennai
PNR012	58451	2022-08-11	USR_009	11:00:00	Fast	I Class	F01	14:00:00	Subramanya	Mangaluru
PNR014	25260	2022-08-17	USR_010	23:15:00	Mail	II Class	S01	04:30:00	Kannur	Palakkad
PNR015	25260	2022-08-05	USR_012	04:30:00	Mail	II Class	S01	08:00:00	Palakkad	Chennai
PNR021	62621	2021-10-22	USR_008	16:00:00	Superfast	I Class	F01	20:30:00	Bengaluru	Chennai

Ticket passenger table after deletion

SELECT * FROM `ticket_passenger_204`

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☐ Show all | Number of rows: 25 ⌄

Extra options

seat_No	Name	age	PNR
F01-3	Saideepak Reddy	27	PNR001
F01-4	Sheela Reddy	25	PNR001
F02-11	SaiDeepak Reddy	27	PNR002
F02-12	Sheela Reddy	25	PNR002
G01-50	Anwar Hussein	32	PNR003
G01-51	Karishma Husein	12	PNR003
S01-14	Christon D Souza	27	PNR007
F01-8	Christon D Souza	27	PNR008
S01-25	Samanta Prabhu	21	PNR010
S01-26	Rakshita Prabhu	21	PNR010
F01-7	Sheela Seth	33	PNR011
F01-13	Ramya R	45	PNR012
S01-2	Shradha Nayar	20	PNR014
S01-29	Khushi Jha	18	PNR015

Backup table output

```
SELECT * FROM `backup_table`
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⌄   Filter rows: Search this table

Extra options

←T→				Transaction_no	Bank	Card_No	Price	PNR
☐	🖉 Edit	Copy	⊖ Delete	146445	HDFC	1234330000000000	967.68	PNR006