

Heaven's Light is Our Guide
Rajshahi University of Engineering and Technology



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Database Systems Sessional

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Lab Report 6: Creating a database with primary and foreign keys and doing operations on it with MySQL using JOIN.

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Contents

1	Tools Used	3
2	Process	3
2.1	Previous lab's problems using join.	3
2.1.1	Find the customer name who are given highest commission. . .	3
2.1.2	Find the amount of total commission given by salesman_id = "5001".	3
2.1.3	Find the salesman name whose customer's grade is lowest. . .	4
2.1.4	Find the total order number,ner from 5-9-2016 to 17-10-216 from the given table.	4
2.2	New data.	5
2.2.1	Find the domestic & international sales for each movie.	6
2.2.2	Show the sales number for each movie that did better inter- nationally rather than domestically.	6
2.2.3	List all the movies by their ratings in descending order.	6
2.2.4	Find the movie ID, name of the movies that the highest length movie of each director.	7
2.2.5	Find the local domestic sales of movies by John Lasseter so far.	7
3	Output	8

1 Tools Used

- MySQL
- VS Code - as an IDE to use SQL
- MacTeX -L^AT_EX compiler
- VS Code with LaTeX workshop extension as a text editor

2 Process

SQL Codes:

2.1 Previous lab's problems using join.

2.1.1 Find the customer name who are given highest commission.

Code:

```
1 SELECT
2     c.customer_name as "Customer Name",
3     s.commission as Commission
4 FROM
5     Relations.Customer c
6     JOIN Relations.salesman s ON c.salesman_id = s.salesman_id
7 ORDER BY
8     s.commission DESC
9 LIMIT
10    1;
```

2.1.2 Find the amount of total commission given by salesman_id = "5001".

Code:

```
1 SELECT
2     s.name as "Salesman Name",
3     SUM(o.purchase_amount * s.commission) as "Total Commission"
```

```

4 FROM
5     Relations.Order o
6     JOIN Relations.salesman s ON o.salesman_id = s.salesman_id
7 WHERE
8     o.salesman_id = 5001;

```

2.1.3 Find the salesman name whose customer's grade is lowest.

Code:

```

1 SELECT
2     s.name as "Salesman Name"
3 FROM
4     Relations.salesman s
5     JOIN Relations.Customer c ON s.salesman_id = c.salesman_id
6 WHERE
7     c.grade = (
8         SELECT
9             MIN(grade)
10            FROM
11                Relations.Customer
12        );

```

2.1.4 Find the total order number,ner from 5-9-2016 to 17-10-216 from the given table.

Code:

```

1 SELECT
2     COUNT(o.order_no) as "Total Order"
3 FROM
4     Relations.Order o
5     JOIN Relations.Customer c ON o.customer_id = c.customer_id
6 WHERE
7     o.order_date BETWEEN '2016-09-05'
8     AND '2016-10-17';

```

2.2 New data.

Creating the new tables and inserting data.

Code:

```
1  CREATE DATABASE IF NOT
   ↳ EXISTS movie;
2
3  CREATE TABLE IF NOT EXISTS
   ↳ movie.movies(
4      id INT AUTO_INCREMENT
   ↳ PRIMARY KEY,
5      title VARCHAR(50),
6      director VARCHAR(50),
7      year INT,
8      length_minutes INT
9  );
10
11 CREATE TABLE
   ↳ movie.box_office(
12     movie_id INT,
13     rating DECIMAL(3, 1),
14     domestic_sales BIGINT,
15     international_sales
   ↳ BIGINT,
16     CONSTRAINT box2movies
   ↳ FOREIGN KEY
   ↳ (movie_id)
   ↳ REFERENCES
   ↳ movie.movies(id)
17 );
18
19 INSERT INTO
20     movie.movies (title,
   ↳ director, year,
   ↳ length_minutes)
21 VALUES
22     ('Toy Story', 'John
   ↳ Lasseter', 1995, 81),
23     ('A Bugs Life', 'John
   ↳ Lasseter', 1998, 95),
24     ('Toy Story 2', 'John
   ↳ Lasseter', 1999, 93),
25     ('Monsters, Inc.', 'Pete
   ↳ Docter', 2001, 92),
26     ('Finding Nemo', 'Andrew
   ↳ Stanton', 2003, 107),
27     ('The Incredibles',
   ↳ 'Brad Bird', 2004,
   ↳ 116),
28     ('Cars', 'John
   ↳ Lasseter', 2006,
   ↳ 117),
29     ('Ratatouille', 'Brad
   ↳ Bird', 2007, 115),
30     ('WALL-E', 'Andrew
   ↳ Stanton', 2008, 104),
31     ('Up', 'Pete Docter',
   ↳ 2009, 101),
32     ('Toy Story 3', 'Lee
   ↳ Unkrich', 2010, 103),
33     ('Cars 2', 'John
   ↳ Lasseter', 2011,
   ↳ 120),
34     ('Brave', 'Brenda
   ↳ Chapman', 2012, 102),
35     ('Monsters University',
   ↳ 'Dan Scanlon', 2013,
   ↳ 110);
36
37 INSERT INTO
38     movie.box_office (
39         movie_id,
40         rating,
41         domestic_sales,
42         international_sales
43     )
44 VALUES
45     (5, 8.2, 380843261,
   ↳ 555900000),
46     (14, 7.4, 268492764,
   ↳ 475066843),
47     (8, 8, 206445654,
   ↳ 417277164),
48     (12, 6.4, 191452396,
   ↳ 368400000),
```

49 (3, 7.9, 245852179, ↪ 239163000), 50 (6, 8, 261441092, ↪ 370001000), 51 (9, 8.5, 223808164, ↪ 297503696), 52 (11, 8.4, 415004880, ↪ 648167031), 53 (7, 8.3, 191796233, ↪ 170162503),	54 (10, 8.3, 293004164, ↪ 438338580), 55 (4, 8.1, 289916256, ↪ 272900000), 56 (2, 7.2, 162798565, ↪ 200600000), 57 (13, 7.2, 237283207, ↪ 301700000);
--	--

2.2.1 Find the domestic & international sales for each movie.

Code:

```

1  SELECT
2      title as Title,
3      FORMAT(domestic_sales, 'N') as "Domestic Sales",
4      FORMAT(international_sales, 'N') as "International Sales"
5  FROM
6      movie.movies m
7      JOIN movie.box_office b ON b.movie_id = m.id;
```

2.2.2 Show the sales number for each movie that did better internationally rather than domestically.

Code:

```

1  SELECT
2      title as Title,
3      FORMAT(domestic_sales, 'N') as "Domestic Sales",
4      FORMAT(international_sales, 'N') as "International Sales"
5  FROM
6      movie.movies m
7      JOIN movie.box_office b ON b.movie_id = m.id
8  WHERE
9      international_sales > domestic_sales;
```

2.2.3 List all the movies by their ratings in descending order.

Code:

```

1  SELECT
2      title as Title,
```

```

3      rating as Rating
4  FROM
5      movie.movies m
6      JOIN movie.box_office b ON b.movie_id = m.id
7  ORDER BY
8      rating DESC;

```

2.2.4 Find the movie ID, name of the movies that the highest length movie of each director.

Code:

```

1  SELECT
2      m.id AS "Movie ID",
3      m.title as Title,
4      m.director as Director,
5      m.length_minutes as "Length(Minutes)"
6  FROM
7      movie.movies m
8  WHERE
9      (m.director, m.length_minutes) IN (
10         SELECT
11             director,
12             MAX(length_minutes) AS max_length
13         FROM
14             movie.movies
15         GROUP BY
16             director
17     );

```

2.2.5 Find the local domestic sales of movies by John Lasseter so far.

Code:

```

1  SELECT
2      director as Director,
3      FORMAT(SUM(domestic_sales), 'N') as "Total Domestic Sales"
4  FROM
5      movie.movies m
6      JOIN movie.box_office b ON m.id = b.movie_id
7  WHERE
8      director = 'John Lasseter';

```

3 Output

customer_id	customer_name	city	grade	salesman_id
Filter...	Filter...	Filter...	Filter...	Filter...
3001	Brad Guzan	London	NULL	NULL
3002	Nick Romando	New York	100	5001
3003	Jozy Altidor	Moscow	200	5007
3004	Fabian Johnson	Paris	300	5006
3005	Graham Zusi	California	200	5002
3007	Brad Davis	New York	200	5001
3008	Julian Green	London	300	5002
3009	Geoff Cameron	Berlin	100	NULL

The complete Customer table.

order_no	purchase_amo...	order_date	customer_id	salesman_id
Filter...	Filter...	Filter...	Filter...	Filter...
70001	150.50	2012-10-05	3005	5002
70002	65.26	2016-10-05	3002	5001
70003	2480.40	2012-10-10	3009	5003
70004	110.50	2012-08-17	3009	5003
70005	2400.60	2012-07-27	3007	5001
70007	948.50	2012-09-10	3005	5002
70008	5760.00	2012-09-10	3002	5001
70009	270.65	2012-09-10	3001	5005
70010	1983.43	2012-10-10	3004	5006
70011	75.29	2012-08-17	3003	5007
70012	250.45	2012-06-27	3008	5002
70013	3045.60	2012-04-25	3002	5001

The complete Order table.

salesman_id	name	city	commission
Filter...	Filter...	Filter...	Filter...
5001	James Hoog	New York	0.15
5002	Nail Knite	Paris	0.13
5003	Lauson Hen	NULL	0.12
5005	Pit Alex	London	0.11
5006	Mc Lyon	New York	0.14
5007	Pal Adam	Rome	0.13

The complete Salesman table.

Customer Name	Commission
Filter...	Filter...
Nick Romando	0.15

Customer who are given highest commission.

Salesman Name	Total Commission
Filter...	Filter...
James Hoog	1690.7190

Amount of total commission given by salesman_id = "5001"

Salesman Name
Filter...
James Hoog

Salesman name whose customer's grade is lowest.

Total Order
Filter...
1

Total order number from 5-9-2016 to 17-10-2016

id	title	director	year	length_minutes
Filter...	Filter...	Filter...	Filter...	Filter...
1	Toy Story	John Lasseter	1995	81
2	A Bugs Life	John Lasseter	1998	95
3	Toy Story 2	John Lasseter	1999	93
4	Monsters, Inc.	Pete Docter	2001	92
5	Finding Nemo	Andrew Stanton	2003	107
6	The Incredibles	Brad Bird	2004	116
7	Cars	John Lasseter	2006	117
8	Ratatouille	Brad Bird	2007	115
9	WALL-E	Andrew Stanton	2008	104
10	Up	Pete Docter	2009	101
11	Toy Story 3	Lee Unkrich	2010	103
12	Cars 2	John Lasseter	2011	120
13	Brave	Brenda Chapman	2012	102
14	Monsters University	Dan Scanlon	2013	110

The complete Movies table.

movie_id	rating	domestic_sales	international_s...
Filter...	Filter...	Filter...	Filter...
5	8.2	380843261	555900000
14	7.4	268492764	475066843
8	8.0	206445654	417277164
12	6.4	191452396	368400000
3	7.9	245852179	239163000
6	8.0	261441092	370001000
9	8.5	223808164	297503696
11	8.4	415004880	648167031
7	8.3	191796233	170162503
10	8.3	293004164	438338580
4	8.1	289916256	272900000
2	7.2	162798565	200600000
13	7.2	237283207	301700000

The complete Box Office table.

Title	Domestic Sales	International S...
Filter...	Filter...	Filter...
Finding Nemo	380,843,261	555,900,000
Monsters University	268,492,764	475,066,843
Ratatouille	206,445,654	417,277,164
Cars 2	191,452,396	368,400,000
Toy Story 2	245,852,179	239,163,000
The Incredibles	261,441,092	370,001,000
WALL-E	223,808,164	297,503,696
Toy Story 3	415,004,880	648,167,031
Cars	191,796,233	170,162,503
Up	293,004,164	438,338,580
Monsters, Inc.	289,916,256	272,900,000
A Bugs Life	162,798,565	200,600,000
Brave	237,283,207	301,700,000

Title	Domestic Sales	International S...
Filter...	Filter...	Filter...
Finding Nemo	380,843,261	555,900,000
Monsters University	268,492,764	475,066,843
Ratatouille	206,445,654	417,277,164
Cars 2	191,452,396	368,400,000
The Incredibles	261,441,092	370,001,000
WALL-E	223,808,164	297,503,696
Toy Story 3	415,004,880	648,167,031
Up	293,004,164	438,338,580
A Bugs Life	162,798,565	200,600,000
Brave	237,283,207	301,700,000

Domestic & international sales for each movie.

Sales for each movie that did better internationally rather than domestically.

Title	Rating
abc Filter...	abc Filter...
WALL-E	8.5
Toy Story 3	8.4
Cars	8.3
Up	8.3
Finding Nemo	8.2
Monsters, Inc.	8.1
Ratatouille	8.0
The Incredibles	8.0
Toy Story 2	7.9
Monsters University	7.4
A Bugs Life	7.2
Brave	7.2
Cars 2	6.4

List of all the movies by their ratings in descending order.

Movie ID	Title	Director	Length(Minutes)
abc Filter...	abc Filter...	abc Filter...	abc Filter...
5	Finding Nemo	Andrew Stanton	107
6	The Incredibles	Brad Bird	116
10	Up	Pete Docter	101
11	Toy Story 3	Lee Unkrich	103
12	Cars 2	John Lasseter	120
13	Brave	Brenda Chapman	102
14	Monsters University	Dan Scanlon	110

Movie ID, Name of the movies that the highest length movie of each director.

Director	Total Domestic ...
abc Filter...	abc Filter...
John Lasseter	791,899,373

Local domestic sales of movies by John Lasseter so far.