

Experiment 2

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Aim: Implementation of dimension tables and fact tables of an electronic store's sales data

Star schema:

DDL Queries:

```
CREATE DATABASE dwm_exp2_star;
CREATE TABLE `sales` (
    time_id INT,
    item_id INT,
    location_id INT,
    branch_id INT,
    sale_id INT PRIMARY KEY AUTO_INCREMENT,
    total_items_sold INT,
    total_sale_amt INT,
    total_discount INT,
    FOREIGN KEY (`time_id`) REFERENCES `time`(`time_id`),
    FOREIGN KEY (`item_id`) REFERENCES `item`(`item_id`),
    FOREIGN KEY (`location_id`) REFERENCES `location`(`location_id`),
    FOREIGN KEY (`branch_id`) REFERENCES `branch`(`branch_id`)
);

CREATE TABLE `time` (
    time_id INT PRIMARY KEY AUTO_INCREMENT,
    day INT,
    month INT,
    year INT,
    quarter TINYINT
);

CREATE TABLE `item` (
    item_id INT PRIMARY KEY AUTO_INCREMENT,
    brand VARCHAR(50),
    name VARCHAR(50),
    category VARCHAR(50),
    price INT,
    discounted_price INT
);
```

```
CREATE TABLE `location` (
  location_id INT PRIMARY KEY AUTO_INCREMENT,
  country VARCHAR(50),
  state VARCHAR(50),
  city VARCHAR(50),
  district VARCHAR(50)
);
```

```
CREATE TABLE `branch` (
  branch_id INT PRIMARY KEY AUTO_INCREMENT,
  name VARCHAR(100),
  address VARCHAR(100)
);
```

Result:

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0355 seconds.)

```
CREATE TABLE `time` ( time_id INT PRIMARY KEY AUTO_INCREMENT, day INT, month INT, year INT, quarter TINYINT )
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0407 seconds.)

```
CREATE TABLE `item` ( item_id INT PRIMARY KEY AUTO_INCREMENT, brand VARCHAR(50), name VARCHAR(50), category VARCHAR(50), price INT, discounted_price INT )
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0607 seconds.)

```
CREATE TABLE `location` ( location_id INT PRIMARY KEY AUTO_INCREMENT, country VARCHAR(50), state VARCHAR(50), city VARCHAR(50), district VARCHAR(50) )
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0598 seconds.)

```
CREATE TABLE `branch` ( branch_id INT PRIMARY KEY AUTO_INCREMENT, name INT, address VARCHAR(100) )
```

[\[Edit inline\]](#) [\[Edit\]](#) [\[Create PHP code\]](#)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0429 seconds.)

```
CREATE TABLE `sales` ( time_id INT, item_id INT, location_id INT, branch_id INT, sale_id INT PRIMARY KEY AUTO_INCREMENT, total_items_sold INT, total_sale_amt INT, total_discount INT, CONSTRAINT FK_SalesTime FOREIGN KEY (`time_id`) REFERENCES `time`(`time_id`), CONSTRAINT FK_SalesItem FOREIGN KEY (`item_id`) REFERENCES `item`(`item_id`), CONSTRAINT FK_SalesLocation FOREIGN KEY (`location_id`) REFERENCES `location`(`location_id`), CONSTRAINT FK_SalesBranch FOREIGN KEY (`branch_id`) REFERENCES `branch`(`branch_id`) )
```

DQL Query:

```
SELECT * FROM `sales`;
```

Result:

✓ Showing rows 0 - 3 (4 total, Query took 0.0017 seconds.)

```
SELECT * FROM `sales`
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		time_id	item_id	location_id	branch_id	sale_id	total_items_sold	total_sale_amt	total_discount
<input type="checkbox"/>	Edit Copy Delete	1	1	2	3	1	345	450000	230000
<input type="checkbox"/>	Edit Copy Delete	2	1	2	3	2	456	56700	25500
<input type="checkbox"/>	Edit Copy Delete	4	1	1	1	3	332	76899	5600
<input type="checkbox"/>	Edit Copy Delete	3	1	2	2	4	6540	6750000	578333

DQL Query:

```
SELECT * FROM `item`;
```

Result:

✓ Showing rows 0 - 4 (5 total, Query took 0.0011 seconds.)

```
SELECT * FROM `item`
```

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		item_id	brand	name	category	price	discounted_price
<input type="checkbox"/>	Edit Copy Delete	1	Levi's	501 Jeans	Clothing	1999	1799
<input type="checkbox"/>	Edit Copy Delete	2	Society	Tea powder	Food	30	30
<input type="checkbox"/>	Edit Copy Delete	3	Lenovo	Ideapad 330S-15IKB	Electronics	23899	20699
<input type="checkbox"/>	Edit Copy Delete	4	Logitech	MK225 Silent Mouse	Electronics	1999	1799
<input type="checkbox"/>	Edit Copy Delete	5	TCL	32 inch HD ready TV	Electronics	12999	9999

DQL Query:

```
SELECT * FROM `location`;
```

Result:

✓ Showing rows 0 - 4 (5 total, Query took 0.0016 seconds.)

```
SELECT * FROM `location`
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key:

+ Options

		location_id	country	state	city	district
<input type="checkbox"/>	Edit Copy Delete	1	India	Maharashtra	Mumbai	Mumbai Suburban
<input type="checkbox"/>	Edit Copy Delete	2	India	Maharashtra	Nagpur	Ramtek
<input type="checkbox"/>	Edit Copy Delete	3	India	Goa	Mapusa	Bardez
<input type="checkbox"/>	Edit Copy Delete	4	India	Goa	Tiswadi	Panaji
<input type="checkbox"/>	Edit Copy Delete	5	India	Kerela	Vasco da Gama	Mormugao

DQL Query:

```
SELECT * FROM `branch`;
```

Result:

✓ Showing rows 0 - 2 (3 total, Query took 0.0012 seconds.)

```
SELECT * FROM `branch`
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		branch_id	name	address
<input type="checkbox"/>	Edit Copy Delete	1	South Bombay	332 St, Cumbala Hill, Mumbai 400001
<input type="checkbox"/>	Edit Copy Delete	2	Andheri	231, Andheri MIDC, Near Marol Bus Depot, Mumbai 40...
<input type="checkbox"/>	Edit Copy Delete	3	Kandivali	675, Near Huma Cinemas, Mumbai 400028

DQL Query:

```
SELECT * FROM `time`;
```

Result:

✓ Showing rows 0 - 3 (4 total, Query took 0.0017 seconds.)

SELECT * FROM `time`

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

				time_id	day	month	year	quarter
<input type="checkbox"/>	Edit	Copy	Delete	1	3	8	2020	3
<input type="checkbox"/>	Edit	Copy	Delete	2	1	2	2021	1
<input type="checkbox"/>	Edit	Copy	Delete	3	2	3	2021	4
<input type="checkbox"/>	Edit	Copy	Delete	4	1	10	2021	2

Snowflake schema:

DDL Queries:

```
CREATE DATABASE dwm_exp2_snowflake;

CREATE TABLE `sales` (
    time_id INT,
    item_id INT,
    location_id INT,
    branch_id INT,
    sale_id INT PRIMARY KEY AUTO_INCREMENT,
    total_items_sold INT,
    total_sale_amt INT,
    total_discount INT,
    FOREIGN KEY (`time_id`) REFERENCES `time`(`time_id`),
    FOREIGN KEY (`item_id`) REFERENCES `item`(`item_id`),
    FOREIGN KEY (`location_id`) REFERENCES `location`(`location_id`),
    FOREIGN KEY (`branch_id`) REFERENCES `branch`(`branch_id`)
);

CREATE TABLE `time` (
    time_id INT PRIMARY KEY AUTO_INCREMENT,
    day INT,
    month INT,
    year INT,
    quarter TINYINT
);

CREATE TABLE `brand` (
    brand_id INT PRIMARY KEY AUTO_INCREMENT,
    name VARCHAR(100)
);

CREATE TABLE `category` (
    category_id INT PRIMARY KEY AUTO_INCREMENT,
    name VARCHAR(100),
    code INT
);
```

```
CREATE TABLE `item` (  
    item_id INT PRIMARY KEY AUTO_INCREMENT,  
    brand_id INT,  
    name VARCHAR(50),  
    category_id INT,  
    price INT,  
    discounted_price INT,  
    FOREIGN KEY (`category_id`) REFERENCES `category`(`category_id`),  
    FOREIGN KEY (`brand_id`) REFERENCES `brand`(`brand_id`)
```

```
);
```

```
CREATE TABLE `country` (  
    country_id INT PRIMARY KEY AUTO_INCREMENT,  
    name VARCHAR(50),  
    code INT
```

```
);
```

```
CREATE TABLE `location` (  
    location_id INT PRIMARY KEY AUTO_INCREMENT,  
    country_id INT,  
    state VARCHAR(50),  
    city VARCHAR(50),  
    district VARCHAR(50),  
    FOREIGN KEY (`country_id`) REFERENCES `country`(`country_id`)
```

```
);
```

```
CREATE TABLE `branch` (  
    branch_id INT PRIMARY KEY AUTO_INCREMENT,  
    name INT,  
    address VARCHAR(100)
```

```
);
```

Result:

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0324 seconds.)

```
CREATE TABLE `time` ( time_id INT PRIMARY KEY AUTO_INCREMENT, day INT, month INT, year INT, quarter TINYINT )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0408 seconds.)

```
CREATE TABLE `brand` ( brand_id INT PRIMARY KEY AUTO_INCREMENT, name VARCHAR(100) )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0308 seconds.)

```
CREATE TABLE `category` ( category_id INT PRIMARY KEY AUTO_INCREMENT, name VARCHAR(100), code INT )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0357 seconds.)

```
CREATE TABLE `item` ( item_id INT PRIMARY KEY AUTO_INCREMENT, brand_id INT, name VARCHAR(50), category_id INT, price INT, discounted_price INT,
CONSTRAINT FK_ItemCategory FOREIGN KEY (`category_id`) REFERENCES `category`(`category_id`), CONSTRAINT FK_ItemBrand FOREIGN KEY (`brand_id`)
REFERENCES `brand`(`brand_id`) )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0300 seconds.)

```
CREATE TABLE `country` ( country_id INT PRIMARY KEY AUTO_INCREMENT, name VARCHAR(50), code INT )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0299 seconds.)

```
CREATE TABLE `location` ( location_id INT PRIMARY KEY AUTO_INCREMENT, country_id INT, state VARCHAR(50), city VARCHAR(50), district VARCHAR(50),
CONSTRAINT FK_LocationCountry FOREIGN KEY (`country_id`) REFERENCES `country`(`country_id`) )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0301 seconds.)

```
CREATE TABLE `branch` ( branch_id INT PRIMARY KEY AUTO_INCREMENT, name INT, address VARCHAR(100) )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0482 seconds.)

```
CREATE TABLE `sales` ( time_id INT, item_id INT, location_id INT, branch_id INT, sale_id INT PRIMARY KEY AUTO_INCREMENT, total_items_sold INT,
total_sale_amt INT, total_discount INT, CONSTRAINT FK_SalesTime FOREIGN KEY (`time_id`) REFERENCES `time`(`time_id`), CONSTRAINT FK_SalesItem
FOREIGN KEY (`item_id`) REFERENCES `item`(`item_id`), CONSTRAINT FK_SalesLocation FOREIGN KEY (`location_id`) REFERENCES `location`(`location_id`),
CONSTRAINT FK_SalesBranch FOREIGN KEY (`branch_id`) REFERENCES `branch`(`branch_id`) )
```

[\[Edit inline\]](#) [\[Edit \]](#) [\[Create PHP code \]](#)

DQL Query:

```
SELECT * FROM `sales`;
```

Result:

✓ Showing rows 0 - 3 (4 total, Query took 0.0010 seconds.)

```
SELECT * FROM `sales`
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [C]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		time_id	item_id	location_id	branch_id	sale_id	total_items_sold	total_sale_amt	total_discount
<input type="checkbox"/>	Edit Copy Delete	1	1	2	3	1	345	450000	230000
<input type="checkbox"/>	Edit Copy Delete	2	1	2	3	2	456	56700	25500
<input type="checkbox"/>	Edit Copy Delete	4	1	1	1	3	332	76899	5600
<input type="checkbox"/>	Edit Copy Delete	3	1	2	2	4	6540	6750000	578333

DQL Query:

```
SELECT * FROM `branch`;
```

Result:

✓ Showing rows 0 - 2 (3 total, Query took 0.0017 seconds.)

```
SELECT * FROM `branch`
```

☐ Profiling

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		branch_id	name	address
<input type="checkbox"/>	Edit Copy Delete	1	0	332 St, Cumbala Hill, Mumbai 400001
<input type="checkbox"/>	Edit Copy Delete	2	0	231, Andheri MIDC, Near Marol Bus Depot, Mumbai 40...
<input type="checkbox"/>	Edit Copy Delete	3	0	675, Near Huma Cinemas, Mumbai 400028

↑ ☐ Check all With selected: Edit Copy Delete Export

DQL Query:

```
SELECT * FROM `brand`;
```

Result:

✓ Showing rows 0 - 4 (5 total, Query took 0.0024 seconds.)

SELECT * FROM `brand`

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

			brand_id	name
<input type="checkbox"/>	Edit	Copy	Delete	1 Levi's
<input type="checkbox"/>	Edit	Copy	Delete	2 Society
<input type="checkbox"/>	Edit	Copy	Delete	3 Lenovo
<input type="checkbox"/>	Edit	Copy	Delete	4 Logitech
<input type="checkbox"/>	Edit	Copy	Delete	5 TCL

DQL Query:

```
SELECT * FROM `category`;
```

Result:

✓ Showing rows 0 - 2 (3 total, Query took 0.0018 seconds.)

SELECT * FROM `category`

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

				category_id	name	code
<input type="checkbox"/>	Edit	Copy	Delete	1	Clothing	43
<input type="checkbox"/>	Edit	Copy	Delete	2	Food	67
<input type="checkbox"/>	Edit	Copy	Delete	3	Electronics	134

DQL Query:

```
SELECT * FROM `country`;
```

Result:

Showing rows 0 - 1 (2 total, Query took 0.0011 seconds.)

```
SELECT * FROM `country`
```

☐ Show all

Number of rows:

25

Filter rows:

Search this table

+ Options

				country_id	name	code
<input type="checkbox"/>	Edit	Copy	Delete	1	India	91
<input type="checkbox"/>	Edit	Copy	Delete	2	The United States of America	1

DQL Query:

```
SELECT * FROM `item`;
```

Result:

✓ Showing rows 0 - 4 (5 total, Query took 0.0010 seconds.)

```
SELECT * FROM `item`
```

☐ Profiling [\[Edit in\]](#)

☐ Show all | Number of rows: 25 ▼ Filter rows: Sort by key:

+ Options

				item_id	brand_id	name	category_id	price	discounted_price
<input type="checkbox"/>	Edit	Copy	Delete	1	1	501 Jeans	1	1999	1799
<input type="checkbox"/>	Edit	Copy	Delete	2	2	Tea powder	2	30	30
<input type="checkbox"/>	Edit	Copy	Delete	3	3	Ideapad 330S-15IKB	3	23899	20699
<input type="checkbox"/>	Edit	Copy	Delete	4	4	MK225 Silent Mouse	3	1999	1799
<input type="checkbox"/>	Edit	Copy	Delete	5	5	32 inch HD ready TV	3	12999	9999

DQL Query:

```
SELECT * FROM `location`;
```

Result:

✓ Showing rows 0 - 4 (5 total, Query took 0.0012 seconds.)

SELECT * FROM `location`

☐ Profile

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	location_id	country_id	state	city	district
<input type="checkbox"/> Edit Copy Delete	1	1	Maharashtra	Mumbai	Mumbai Suburban
<input type="checkbox"/> Edit Copy Delete	2	1	Maharashtra	Nagpur	Ramtek
<input type="checkbox"/> Edit Copy Delete	3	1	Goa	Mapusa	Bardez
<input type="checkbox"/> Edit Copy Delete	4	1	Goa	Tiswadi	Panaji
<input type="checkbox"/> Edit Copy Delete	5	1	Kerala	Vasco da Gama	Mormugao

DQL Query:

```
SELECT * FROM `time`;
```

Result:

✓ Showing rows 0 - 3 (4 total, Query took 0.0011 seconds.)

SELECT * FROM `time`

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

+ Options

	time_id	day	month	year	quarter
<input type="checkbox"/> Edit Copy Delete	1	3	8	2020	3
<input type="checkbox"/> Edit Copy Delete	2	1	2	2021	1
<input type="checkbox"/> Edit Copy Delete	3	2	3	2021	4
<input type="checkbox"/> Edit Copy Delete	4	1	10	2021	2