

```
create database demo_db;
```

```
use demo_db;
```

```
CREATE TABLE Sales (  
    cust_id INT NOT NULL,  
    name VARCHAR(40),  
    store_id VARCHAR (20) NOT NULL,  
    bill_no INT NOT NULL,  
    bill_date DATE PRIMARY KEY NOT NULL,  
    amount DECIMAL (8,2) NOT NULL  
)
```

```
select * from sales;
```

```
CREATE TABLE Sales_partition_based (  
    cust_id INT NOT NULL,  
    name VARCHAR(40),  
    store_id VARCHAR (20) NOT NULL,  
    bill_no INT NOT NULL,  
    bill_date DATE PRIMARY KEY NOT NULL,  
    amount DECIMAL (8,2) NOT NULL)  
PARTITION BY RANGE (year(bill_date))  
(  
    partition p1 VALUES LESS THAN (2016),  
    partition p2 VALUES LESS THAN (2017),  
    partition p3 VALUES LESS THAN (2018),  
    partition p4 VALUES LESS THAN (2019),  
    partition p5 VALUES LESS THAN (2020)  
);
```

```
INSERT INTO Sales_partition_based VALUES  
(1, 'Mike', 'S001', 101, '2015-01-02', 125.56),  
(2, 'Robert', 'S003', 103, '2015-01-25', 476.50),  
(3, 'Peter', 'S012', 122, '2016-02-15', 335.00),  
(4, 'Joseph', 'S345', 121, '2016-03-26', 787.00),  
(5, 'Harry', 'S234', 132, '2017-04-19', 678.00),  
(6, 'Stephen', 'S743', 111, '2017-05-31', 864.00),  
(7, 'Jacson', 'S234', 115, '2018-06-11', 762.00),  
(8, 'Smith', 'S012', 125, '2019-07-24', 300.00),  
(9, 'Adam', 'S456', 119, '2019-08-02', 492.20);
```

```
select * from sales;
```

```
SELECT TABLE_NAME, PARTITION_NAME, TABLE_ROWS, AVG_ROW_LENGTH,  
DATA_LENGTH
```

```
FROM INFORMATION_SCHEMA.PARTITIONS
WHERE TABLE_SCHEMA = 'demo_db' AND TABLE_NAME = 'Sales';
```

```
CREATE TABLE Stores_list (
  cust_name VARCHAR(40),
  bill_no VARCHAR (20) NOT NULL,
  store_id INT PRIMARY KEY NOT NULL,
  bill_date DATE NOT NULL,
  amount DECIMAL(8,2) NOT NULL
)
PARTITION BY LIST(store_id) (
  PARTITION PEast VALUES IN (101, 103, 105),
  PARTITION PWest VALUES IN (102, 104, 106),
  PARTITION pNorth VALUES IN (107, 109, 111),
  PARTITION PSouth VALUES IN (108, 110, 112));
```

```
INSERT INTO Stores_list VALUES
( 'Mike', 'S001', 101, '2015-01-02', 125.56),
( 'Robert', 'S003', 103, '2015-01-25', 476.50),
( 'Peter', 'S012', 105, '2016-02-15', 335.00),
( 'Joseph', 'S345', 109, '2016-03-26', 787.00),
( 'Harry', 'S234', 111, '2017-04-19', 678.00),
( 'Stephen', 'S743', 102, '2017-05-31', 864.00),
( 'Jacson', 'S234', 112, '2018-06-11', 762.00),
( 'Smith', 'S012', 106, '2019-07-24', 300.00),
( 'Adam', 'S456', 104, '2019-08-02', 492.20);
```

```
SELECT TABLE_NAME, PARTITION_NAME, TABLE_ROWS, AVG_ROW_LENGTH,
DATA_LENGTH
FROM INFORMATION_SCHEMA.PARTITIONS
WHERE TABLE_SCHEMA = 'demo_db' AND TABLE_NAME = 'Stores_list';
```

```
CREATE TABLE Stores_hash (
  cust_name VARCHAR(40),
  bill_no VARCHAR (20) NOT NULL,
  store_id INT PRIMARY KEY NOT NULL,
  bill_date DATE NOT NULL,
  amount DECIMAL(8,2) NOT NULL
)
PARTITION BY HASH(store_id)
PARTITIONS 4;
```

```
INSERT INTO Stores_hash VALUES
( 'Mike', 'S001', 101, '2015-01-02', 125.56),
( 'Robert', 'S003', 103, '2015-01-25', 476.50),
```

```
( 'Peter', 'S012', 105, '2016-02-15', 335.00),
( 'Joseph', 'S345', 109, '2016-03-26', 787.00),
( 'Harry', 'S234', 111, '2017-04-19', 678.00),
( 'Stephen', 'S743', 102, '2017-05-31', 864.00),
( 'Jacson', 'S234', 112, '2018-06-11', 762.00),
( 'Smith', 'S012', 106, '2019-07-24', 300.00),
( 'Adam', 'S456', 104, '2019-08-02', 492.20);
```

```
SELECT TABLE_NAME, PARTITION_NAME, TABLE_ROWS, AVG_ROW_LENGTH,
DATA_LENGTH
FROM INFORMATION_SCHEMA.PARTITIONS
WHERE TABLE_SCHEMA = 'demo_db' AND TABLE_NAME = 'Stores_hash';
```

#index Demo

```
CREATE INDEX idx_first_name ON names(first_name);
```

```
EXPLAIN SELECT * FROM names WHERE first_name='shivank';
```

#####Indexes#####

```
CREATE TABLE `names` (
  `id` int(11) unsigned NOT NULL AUTO_INCREMENT,
  `first_name` varchar(50) CHARACTER SET latin1 DEFAULT NULL,
  `last_name` varchar(50) CHARACTER SET latin1 DEFAULT NULL,
  PRIMARY KEY (`id`)
);
```

```
INSERT INTO names VALUES (1, 'shivank', 'agrawal');
INSERT INTO names VALUES (2, 'shiva', 'agrawal');
INSERT INTO names VALUES (3, 'shi', 'agrawal');
INSERT INTO names VALUES (4, 'sh', 'agrawal');
INSERT INTO names VALUES (5, 'shivank1', 'agrawal');
INSERT INTO names VALUES (6, 'shivank', 'agrawal');
```

```
select * from names;
```

```
EXPLAIN SELECT * FROM names WHERE first_name='shivank';
```