

Experiment 05

Partitioning in Oracle

Range Partitioning:

```
CREATE TABLE employees (  
    id INT PRIMARY KEY,  
    fname VARCHAR(25) NOT NULL,  
    lname VARCHAR(25) NOT NULL,  
    store_id INT NOT NULL,  
    department_id INT NOT NULL  
)  
PARTITION BY RANGE (id) (  
    PARTITION p0 VALUES LESS THAN (5),  
    PARTITION p1 VALUES LESS THAN (10),  
    PARTITION p2 VALUES LESS THAN (15),  
    PARTITION p3 VALUES LESS THAN (20)  
);  
  
INSERT INTO employees VALUES (0, 'Sumit', 'More', 2541, 101);  
INSERT INTO employees VALUES (1, 'Jay', 'Bansode', 2251, 101);  
INSERT INTO employees VALUES (2, 'Sujay', 'Gangan', 2541, 101);  
INSERT INTO employees VALUES (3, 'Aryan', 'Mangrule', 2642, 101);  
INSERT INTO employees VALUES (4, 'Tanmay', 'Vidwans', 2645, 102);  
INSERT INTO employees VALUES (5, 'Soham', 'Sadolkar', 2415, 102);  
INSERT INTO employees VALUES (6, 'Somnath', 'Kumbhar', 2524, 103);  
INSERT INTO employees VALUES (7, Zyed, 'Mulla', 2251, 104);  
INSERT INTO employees VALUES (8, 'Aditya', 'Belkude', 2541, 105);  
INSERT INTO employees VALUES (9, 'Pavan', 'Rajmane', 2642, 105);  
INSERT INTO employees VALUES (10, 'Shreyas', 'Bansode', 2645, 106);  
INSERT INTO employees VALUES (11, 'Sourabh', 'Shinde', 2415, 107);  
INSERT INTO employees VALUES (12, 'Sourabh', 'Jadhav', 2524, 108);  
INSERT INTO employees VALUES (13, 'Samarth', 'Jadhav', 2251, 105);  
INSERT INTO employees VALUES (14, 'Prasanna', 'Patil', 2541, 104);  
INSERT INTO employees VALUES (15, 'Vivek', 'Patil', 2642, 103);  
INSERT INTO employees VALUES (16, 'Shreyas', 'Patil', 2645, 104);  
INSERT INTO employees VALUES (17, 'Shreyas', 'Shinde', 2415, 107);  
INSERT INTO employees VALUES (18, 'Pranav', 'Chavan', 2524, 105);  
INSERT INTO employees VALUES (19, 'Atharva', 'Patil', 2251, 107);
```

1. Retrieve employee details from partition p1 and p2:

```
SELECT *  
FROM employees PARTITION (p1)  
UNION  
SELECT *  
FROM employees PARTITION (p2);
```

ID	FNAME	LNAME	STORE_ID	DEPARTMENT_ID
5	Soham	Sadolkar	2415	102
6	Somnath	Kumbhar	2524	103
7	Zyed	Mulla	2251	104
8	Aditya	Belkude	2541	105
9	Pavan	Rajmane	2642	105
10	Shreyas	Bansode	2645	106
11	Sourabh	Shinde	2415	107
12	Sourabh	Jadhav	2524	108
13	Samarth	Jadhav	2251	105
14	Prasanna	Patil	2541	104

2. Retrieve employee details from partition p0 and p1 where fname begin with 'S'

```
SELECT *  
FROM employees PARTITION (p0)  
WHERE fname LIKE 'S%'  
UNION  
SELECT *  
FROM employees PARTITION (p1)  
WHERE fname LIKE 'S%';
```

ID	FNAME	LNAME	STORE_ID	DEPARTMENT_ID
0	Sumit	More	2541	101
2	Sujay	Gangan	2541	101
5	Soham	Sadolkar	2415	102
6	Somnath	Kumbhar	2524	103

3. Count number of employees from each department from p1, p2, p3:

```
SELECT department_id, COUNT(*) AS Number_of_Employees
FROM (
    SELECT *
    FROM employees
    MINUS
    SELECT *
    FROM employees PARTITION (p0)
)
GROUP BY department_id;
```

DEPARTMENT_ID	NUMBER_OF_EMPLOYEES
107	3
108	1
105	4
104	3
103	2
102	1
106	1

Hash Partitioning:

```
CREATE TABLE sales_hash (  
    salesman_id    NUMBER(5) PRIMARY KEY,  
    salesman_name  VARCHAR2(30),  
    sales_amount   NUMBER(10),  
    week_no        NUMBER(2)  
)  
PARTITION BY HASH (salesman_id)  
PARTITIONS 4;  
  
INSERT INTO sales_hash VALUES (1, 'Jay', 2251, 1);  
INSERT INTO sales_hash VALUES (2, 'Sujay', 2541, 1);  
INSERT INTO sales_hash VALUES (3, 'Aryan', 2642, 2);  
INSERT INTO sales_hash VALUES (4, 'Tanmay', 2645, 1);  
INSERT INTO sales_hash VALUES (5, 'Soham', 2415, 1);  
INSERT INTO sales_hash VALUES (6, 'Somnath', 2524, 3);  
INSERT INTO sales_hash VALUES (7, 'Zyed', 2251, 1);  
INSERT INTO sales_hash VALUES (8, 'Aditya', 2541, 2);  
INSERT INTO sales_hash VALUES (9, 'Pavan', 2642, 3);  
INSERT INTO sales_hash VALUES (10, 'Shreyas', 2645, 3);
```

Query for getting the hash values of each partition

```
SELECT table_name,  
       partition_name  
FROM   all_tab_partitions  
WHERE  table_name = 'SALES_HASH'  
ORDER BY table_name, partition_name;
```

TABLE_NAME	PARTITION_NAME
SALES_HASH	SYS_P645685
SALES_HASH	SYS_P645686
SALES_HASH	SYS_P645687
SALES_HASH	SYS_P645688

```
SELECT * FROM sales_hash PARTITION (SYS_P645688);
```

SALESMAN_ID	SALESMAN_NAME	SALES_AMOUNT	WEEK_NO
1	Jay	2251	1
3	Aryan	2642	2
4	Tanmay	2645	1
7	Zyed	2251	1

2. Retrieve name of salesman & amount from partition 4 where sales amount between 2000 & 5000:

```
SELECT salesman_name,  
       sales_amount  
FROM   sales_hash PARTITION (SYS_P645688)  
WHERE  sales_amount BETWEEN 2000 AND 5000;
```

SALESMAN_NAME	SALES_AMOUNT
Jay	2251
Aryan	2642
Tanmay	2645
Zyed	2251

3. Find average sale amount per week from 3rd partition:

```
SELECT week_no,  
       AVG(sales_amount) AS avg_sales_amount  
FROM   sales_hash PARTITION (SYS_P645688)  
GROUP  BY week_no  
ORDER  BY week_no;
```

[illegible]