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Roll No. : BTB22
Subject : Advanced Database Systems Lab

Experiment No. : 5

Implementation Range and Hash Partition

1. **Range Partition:**

   Consider a table named employees with schema emp (id int, fname varchar(25) not null, lname varchar(25) not null, store_id int not null, department_id int not null) with id as a primary key and insert 20 records with id ranges from 1 to20.

   Make 4 partitions by range:

   P0: id < 5

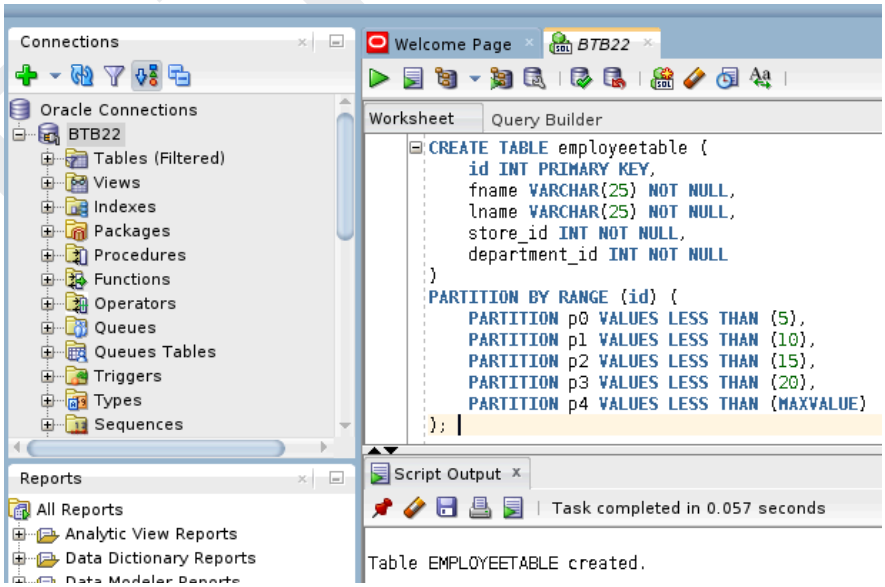
   P1: id < 10

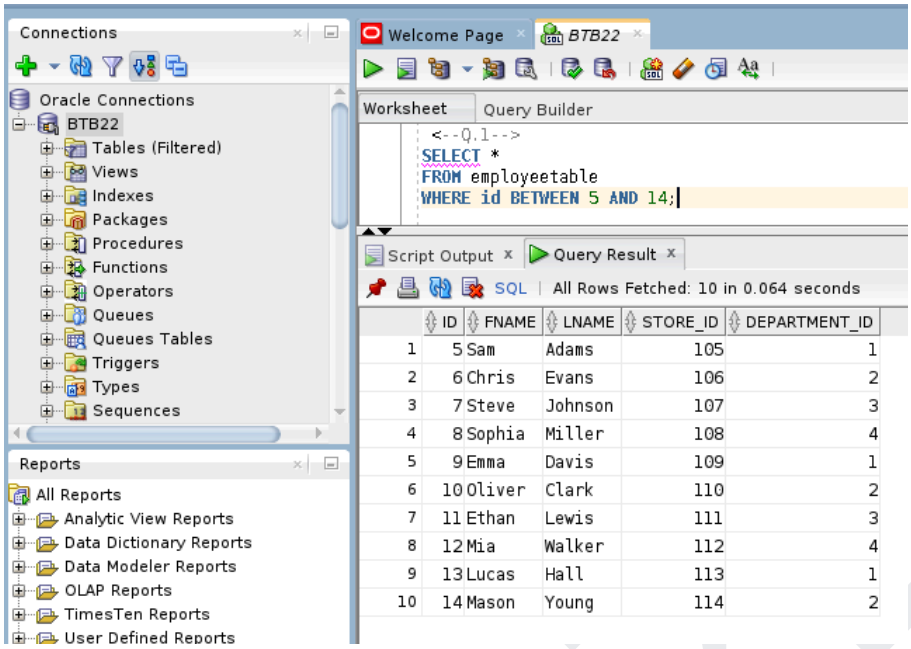
   P2: id < 15

   P3: id < 20 or Maxvalue.

   Answer following queries:

   1. Retrieve employee details from partition P1 and P2.
   2. Retrieve employee details from partition P0 and P1 where fname begin with ‘S’.
   3. Count number of employees from each department from p1, p2 and p3.

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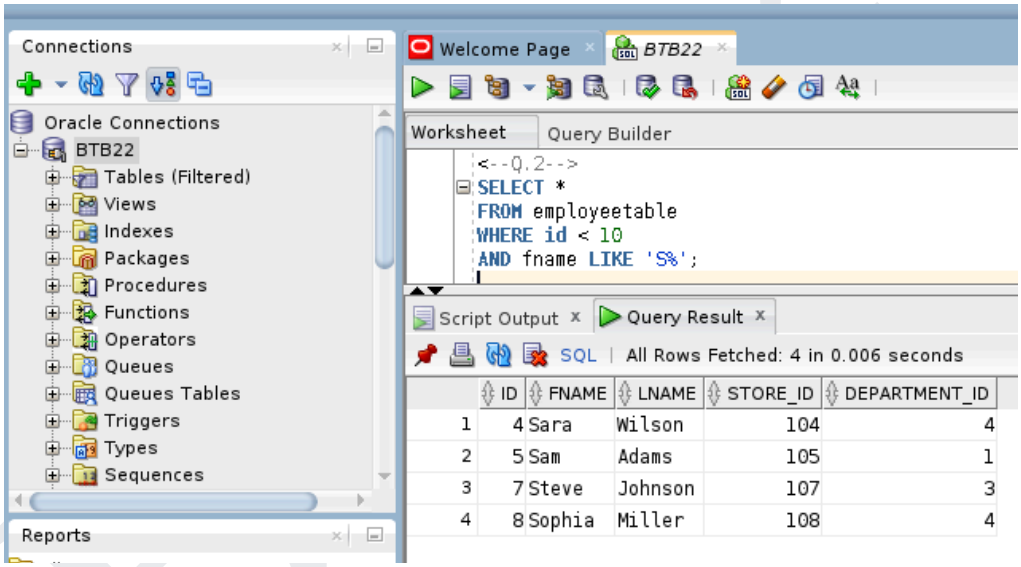
Worksheet
Query Builder
<--Q.1-->
SELECT *
FROM employeetable
WHERE id BETWEEN 5 AND 14;
Script Output
Query Result
SQL | All Rows Fetched: 10 in 0.064 seconds
ID FNAME LNAME STORE_ID DEPARTMENT_ID
1 5 Sam Adams 105 1
2 6 Chris Evans 106 2
3 7 Steve Johnson 107 3
4 8 Sophia Miller 108 4
5 9 Emma Davis 109 1
6 10 Oliver Clark 110 2
7 11 Ethan Lewis 111 3
8 12 Mia Walker 112 4
9 13 Lucas Hall 113 1
10 14 Mason Young 114 2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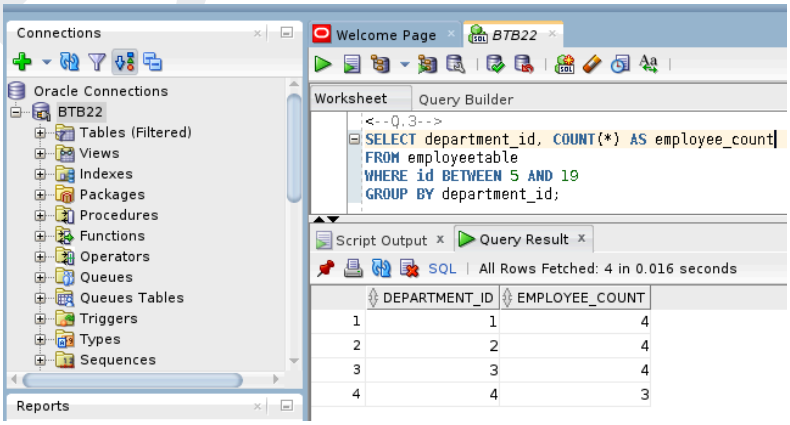
Query Builder
<--Q.2-->
SELECT *
FROM employeetable
WHERE id < 10
AND fname LIKE 'S%';
Script Output
Query Result
SQL | All Rows Fetched: 4 in 0.006 seconds
ID FNAME LNAME STORE_ID DEPARTMENT_ID
1 4 Sara Wilson 104 4
2 5 Sam Adams 105 1
3 7 Steve Johnson 107 3
4 8 Sophia Miller 108 4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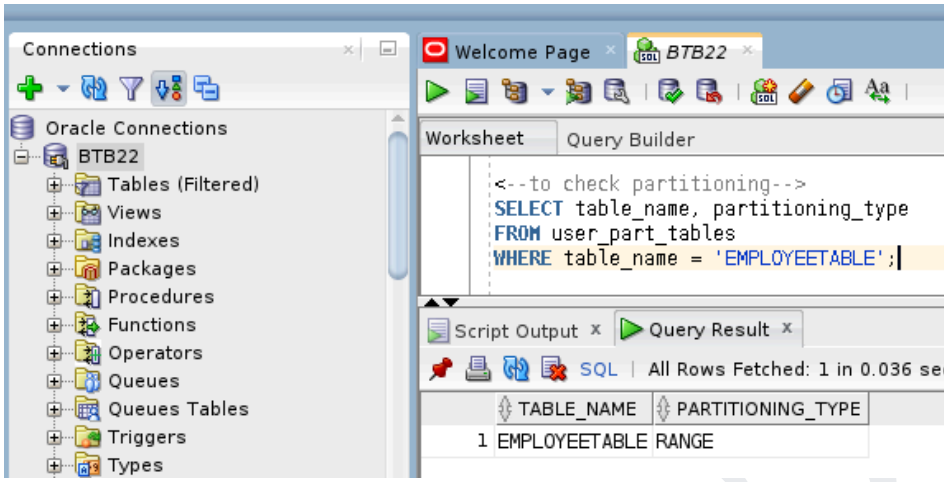
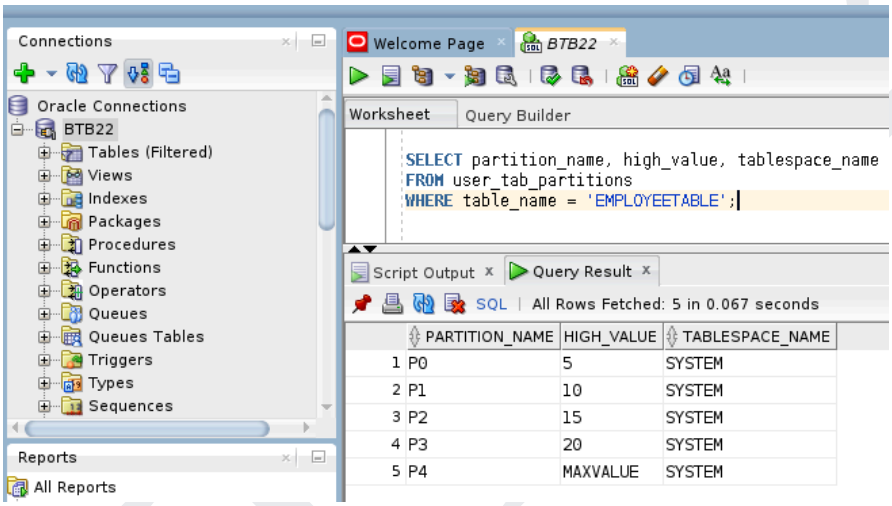
Worksheet
Query Builder
<--Q.3-->
SELECT department_id, COUNT(*) AS employee_count
FROM employeetable
WHERE id BETWEEN 5 AND 19
GROUP BY department_id;
Script Output
Query Result
SQL | All Rows Fetched: 4 in 0.016 seconds
DEPARTMENT_ID EMPLOYEE_COUNT
1 1 4
2 2 4
3 3 4
4 4 3





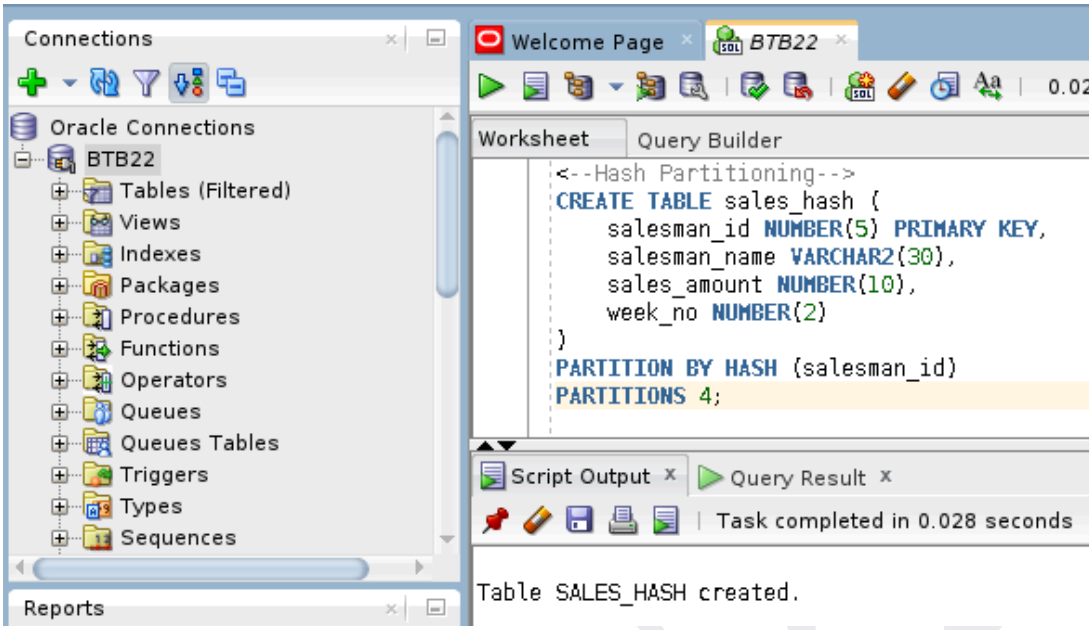
2. Hash Partition:

Consider a table named sales_hash with schema (salesman_id number(5), salesman_name varchar2(30), sales_amount number(10), week_no number(2)) with salesman_id as primary key and insert at least 10 records.

Create 4 partitions using hash partitioning.

Answer below queries.

1. Retrieve sales details from 2nd partition.
2. Retrieve name of sales mans and amount from 4th partition where sale amount between 2000 and 5000.
3. Find average sale amount per week from 3rd partition.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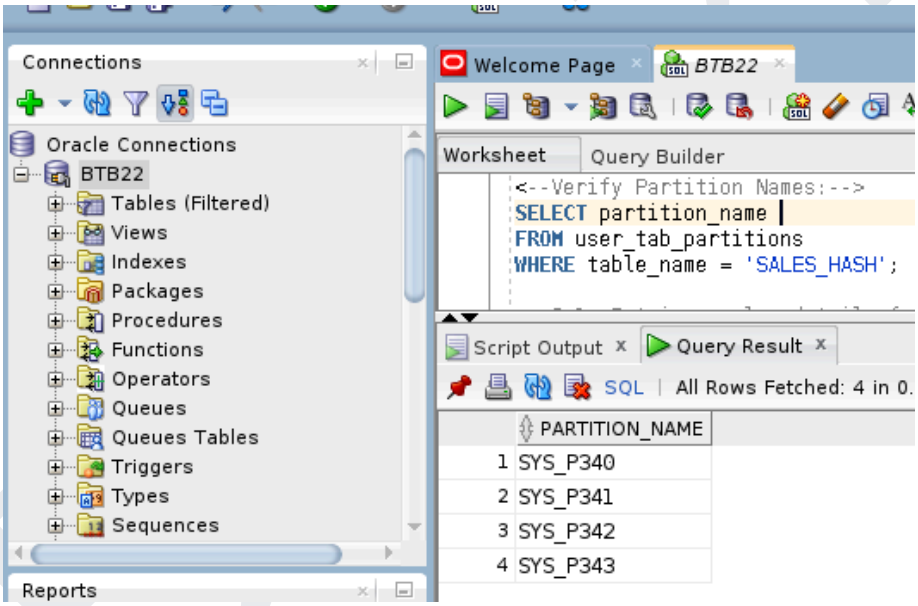
Worksheet
Query Builder
<--Hash Partitioning-->
CREATE TABLE sales_hash (
salesman_id NUMBER(5) PRIMARY KEY,
salesman_name VARCHAR2(30),
sales_amount NUMBER(10),
week_no NUMBER(2)
)
PARTITION BY HASH (salesman_id)
PARTITIONS 4;
Script Output
Query Result
Task completed in 0.028 seconds
Table SALES_HASH created.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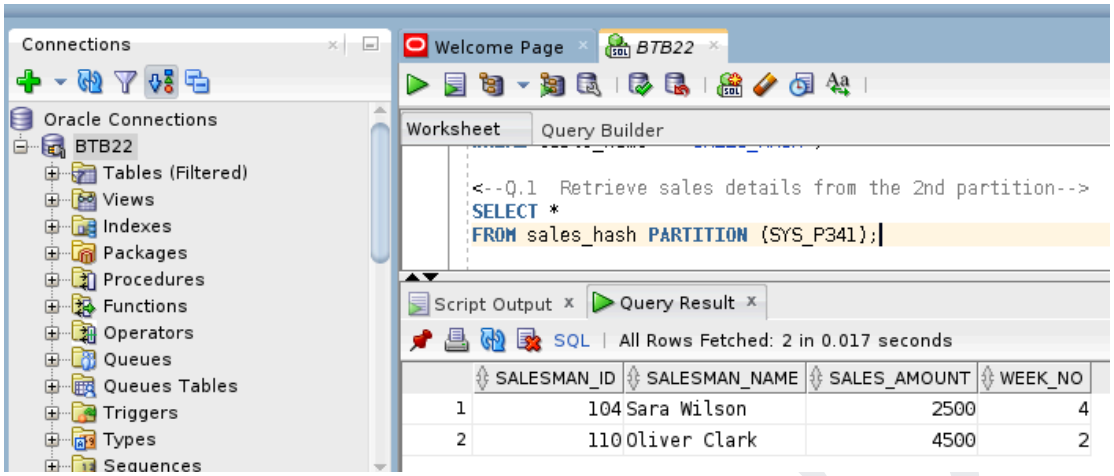
Query Builder
<--Verify Partition Names:-->
SELECT partition_name
FROM user_tab_partitions
WHERE table_name = 'SALES_HASH';
Script Output
Query Result
SQL
All Rows Fetched: 4 in 0.
PARTITION_NAME
1 SYS_P340
2 SYS_P341
3 SYS_P342
4 SYS_P343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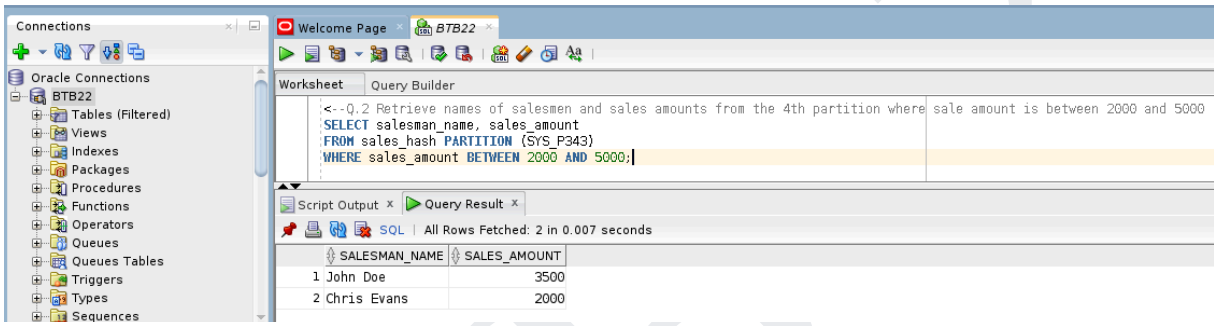
Query Builder
<--Q.1 Retrieve sales details from the 2nd partition-->
SELECT *
FROM sales_hash PARTITION (SYS_P341);
Script Output
Query Result
SQL | All Rows Fetched: 2 in 0.017 seconds
SALESMAN_ID SALESMAN_NAME SALES_AMOUNT WEEK_NO
1 104 Sara Wilson 2500 4
2 110 Oliver Clark 4500 2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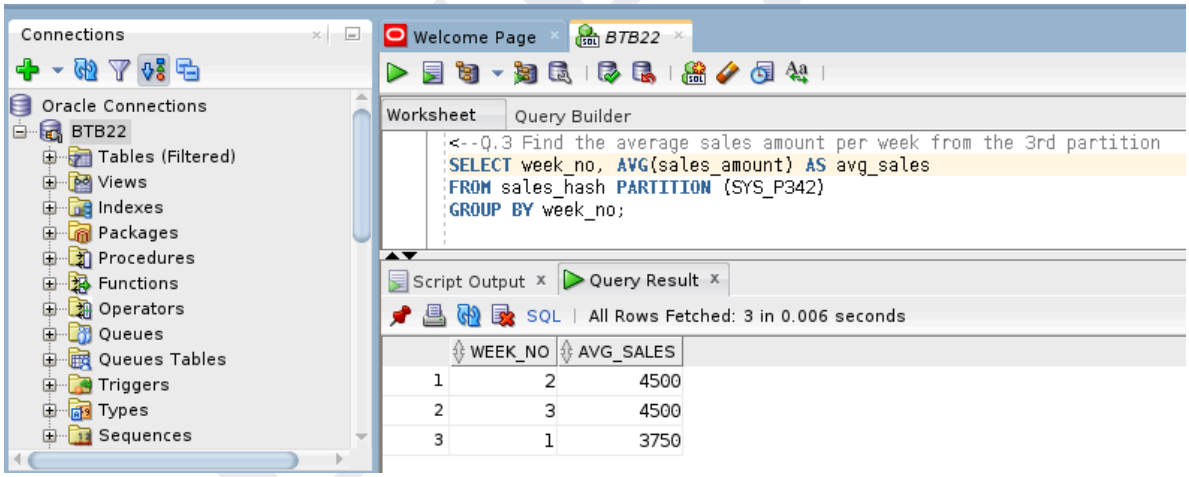
<--Q.2 Retrieve names of salesmen and sales amounts from the 4th partition where sale amount is between 2000 and 5000
SELECT salesman_name, sales_amount
FROM sales_hash PARTITION (SYS_P343)
WHERE sales_amount BETWEEN 2000 AND 5000;
Script Output
Query Result
SQL | All Rows Fetched: 2 in 0.007 seconds
SALESMAN_NAME SALES_AMOUNT
1 John Doe 3500
2 Chris Evans 2000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Query Builder
<--Q.3 Find the average sales amount per week from the 3rd partition
SELECT week_no, AVG(sales_amount) AS avg_sales
FROM sales_hash PARTITION (SYS_P342)
GROUP BY week_no;
Script Output
Query Result
SQL | All Rows Fetched: 3 in 0.006 seconds
WEEK_NO AVG_SALES
1 2 4500
2 3 4500
3 1 3750