|  |
| --- |
| EPAM Systems, RD Dep. |
| MTN.BI.07 Partitioning |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| REVISION HISTORY | | | | | |
| Ver. | Description of Change | Author | Date | Approved | |
| Name | Effective Date |
| 1.0 | Initial status | Olga\_Hilko | 13-Nov-2017 |  |  |

Contents

[1. Hands-On Task 3](#_Toc383292320)

[2. Data Modeling Task 3](#_Toc383292321)

[3. Analytical task 3](#_Toc383292322)

[3.1. Partitioning 3](#_Toc383292323)

[3.2. Business 3](#_Toc383292324)

[4. Results 3](#_Toc383292325)

# Hands-On Task

Создаём новую таблицу:

CREATE TABLE Date\_Part (

date\_key\_column date PRIMARY KEY,

string\_col VARCHAR2(20),

real\_col number(8,2)

)

PARTITION BY RANGE (date\_key\_column)

(

PARTITION pr1 VALUES LESS THAN (TO\_DATE('01-01-2017', 'DD-MM-YYYY')),

PARTITION pr2 VALUES LESS THAN (TO\_DATE('01-01-2018', 'DD-MM-YYYY')),

PARTITION pr3 VALUES LESS THAN (MAXVALUE)

);

Заполняем её:

declare

cnt INT := 0;

begin

FOR cnt IN 0..1000 LOOP

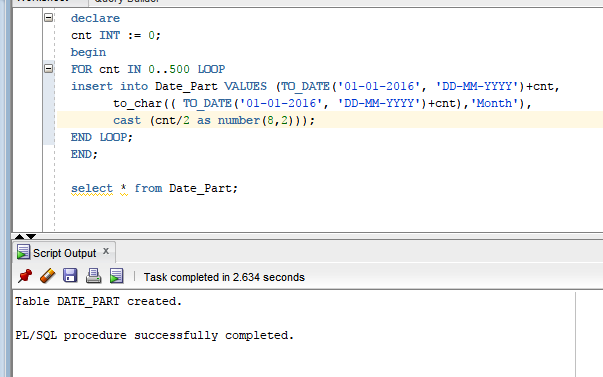
insert into Date\_Part VALUES (TO\_DATE('01-01-2016', 'DD-MM-YYYY')+cnt,

to\_char(( TO\_DATE('01-01-2016', 'DD-MM-YYYY')+cnt),'Month'),

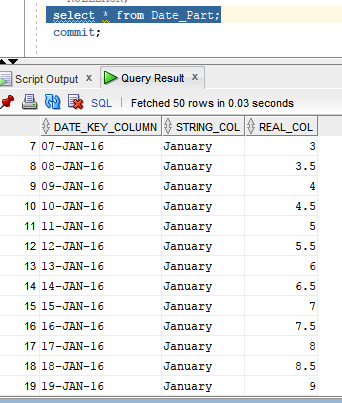
cast (cnt/2 as number(8,2)));

END LOOP;

END;



Результат проверяем, делаем commit

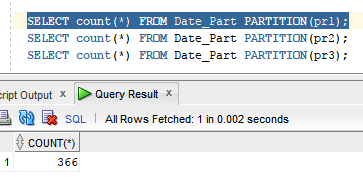
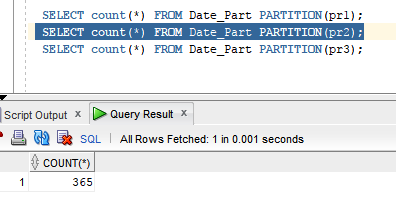
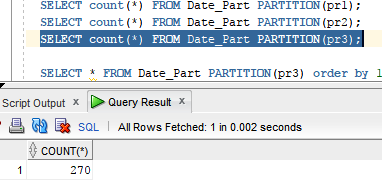


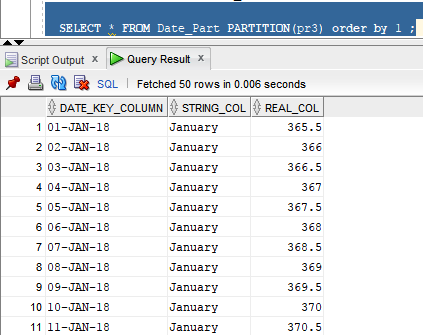
Проверка записей в таблице:

SELECT count(\*) FROM Date\_Part PARTITION(pr1); --2016 – високосный год

SELECT count(\*) FROM Date\_Part PARTITION(pr2);

SELECT count(\*) FROM Date\_Part PARTITION(pr3);

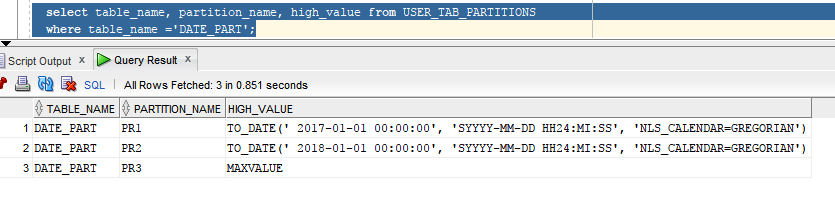
  Данные из последней партиции



Проверка:

* select table\_name, partition\_name, high\_value from USER\_TAB\_PARTITIONS

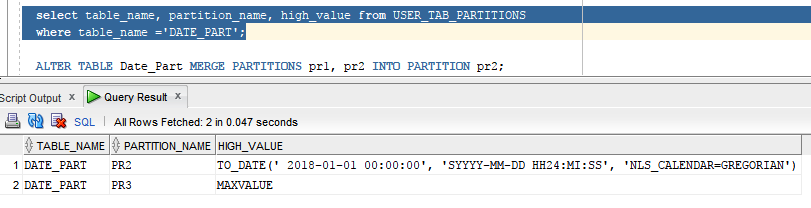
where table\_name ='DATE\_PART';



Merging partition:

ALTER TABLE Date\_Part MERGE PARTITIONS pr1, pr2 INTO PARTITION pr2;

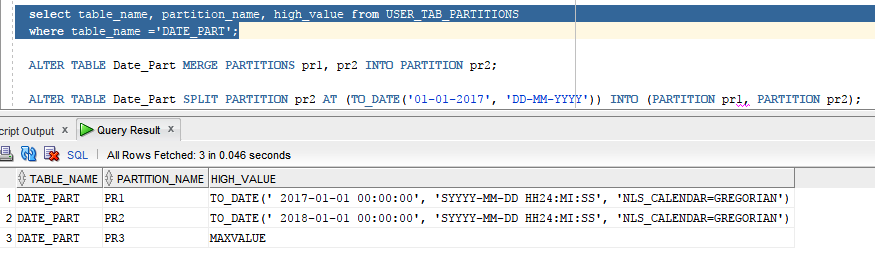
Проверка:



Splitting partition:

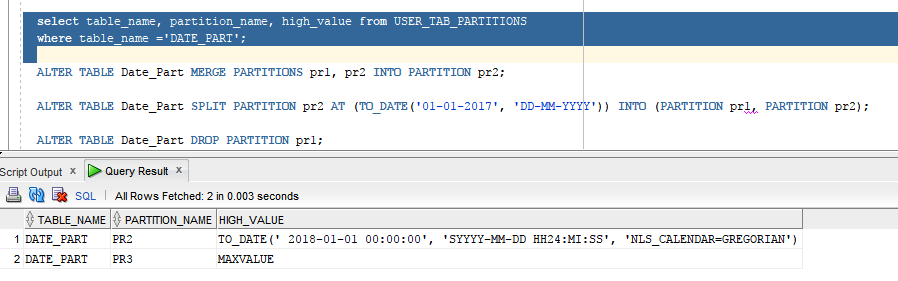
ALTER TABLE Date\_Part SPLIT PARTITION pr2 AT (TO\_DATE('01-01-2017', 'DD-MM-YYYY')) INTO (PARTITION pr1, PARTITION pr2);

Разделили партицию pr2 на pr1(до 01-01-2017) и pr2

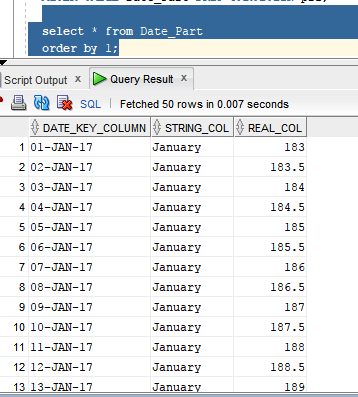


Удаление партции pr2

ALTER TABLE Date\_Part DROP PARTITION pr1;



После удаления партиции, данные хранившиеся в ней теряются (все данные до 2017 были удалены).



Создаём новыую таблицу с HASH партиционирование

CREATE TABLE Date\_Part\_Hash (

date\_key\_column date PRIMARY KEY,

string\_col VARCHAR2(20),

real\_col number(8,2)

)

PARTITION BY HASH (date\_key\_column)

(

PARTITION pr1,

PARTITION pr2,

PARTITION pr3

);

И её заполняем

declare

cnt INT := 0;

begin

FOR cnt IN 0..1000 LOOP

insert into Date\_Part\_Hash VALUES (TO\_DATE('01-01-2016', 'DD-MM-YYYY')+cnt,

to\_char(( TO\_DATE('01-01-2016', 'DD-MM-YYYY')+cnt),'Month'),

cast (cnt/2 as number(8,2)));

END LOOP;

END;

Проверка данных по партициям та же

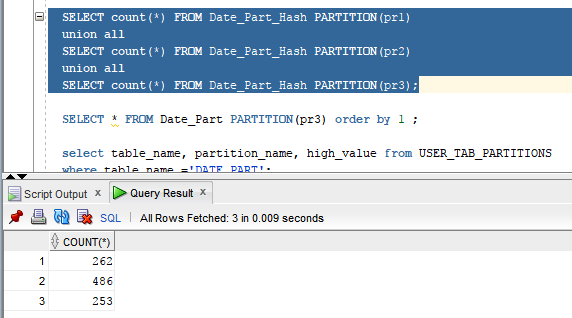
SELECT count(\*) FROM Date\_Part\_Hash PARTITION(pr1)

union all

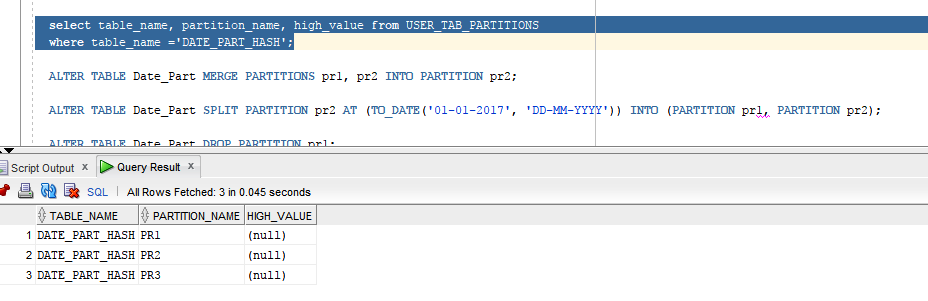
SELECT count(\*) FROM Date\_Part\_Hash PARTITION(pr2)

union all

SELECT count(\*) FROM Date\_Part\_Hash PARTITION(pr3);

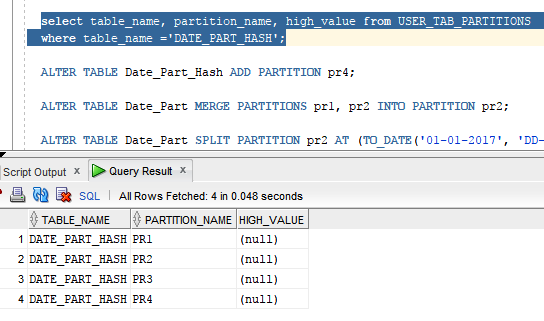


Партиции для новой таблицы

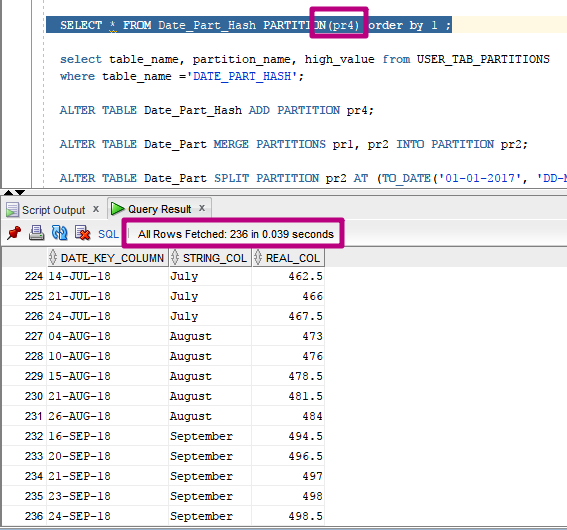


Результат добавления новой партиции

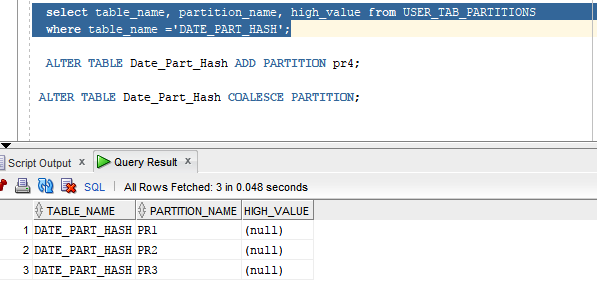
ALTER TABLE Date\_Part\_Hash ADD PARTITION pr4;



Данные из таблицы заного были разбиты на партиции



Coalescing partition

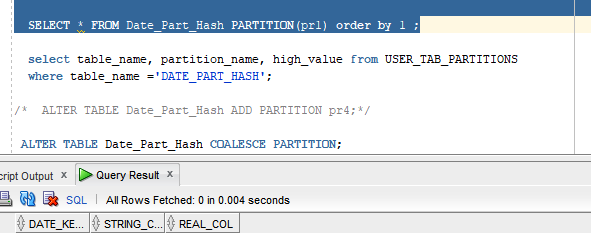
ALTER TABLE Date\_Part\_Hash COALESCE PARTITION; 

Truncating partition

ALTER TABLE Date\_Part\_Hash TRUNCATE PARTITION(pr1);

* select table\_name, partition\_name, high\_value from USER\_TAB\_PARTITIONS

where table\_name ='DATE\_PART\_HASH' – дает то же результат, но данные были удаленны.



# 

# Analytical task

## Partitioning

Add chapter on describing Fact table partitioning strategy, which fields will it be based on and why (use composite partitioning).

## Business

Create a report layout of the task you are trying to solve with your DWH (e.g. 'I want to analyze my sales on month and customers' region location and product type'). It could be done in Excel (just some headers, colors, dummy numbers, and little description) or any other tool of your preference. This would help to understand what task we are trying to solve.

# Results

Result of this lab work should be:

* Screenshots and description of partitioning maintenance operations.
* Chapter in document about advantages of partitioning the fact table in described way.
* Chapter in a document describing needed reports with possible layouts.