Report

Laboratory Work 6

Dmitry Ladutsko

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1. Prerequisites Task Information

1.1. Passwords Index

Password Group	Login Name	Password
Operation System	root	“rootadmin”
	oracle	“oracleadmin”
Oracle System	sys	“sysadmin”
	system	“sysadmin”
Oracle Users	All DB users	“%PWD%”

1.2. Folder Paths Index

Path Group	Path Description	Path
Operation System	Oracle RDBMS – BIN	/oracle/app/oracle
	Oracle Inventory	/oracle/app/oraInventory
	Oracle Database Storage	/oracle/oradata
	Oracle Install Directory	/oracle/install
Oracle	ORACLE_BASE	/oracle/app/oracle
	ORACLE_HOME	$ORACLE_BASE/product/11.2
FTP	ftp Incoming Folder	/ftp/incoming

2. Analytic Functions - Basic

2.1. Task 01: Create Ad Hoc SQL FIRST_VALUE, LAST_VALUE

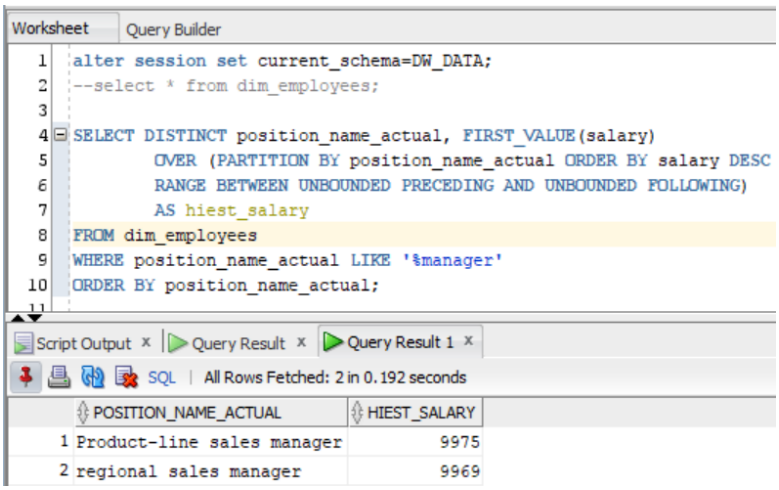
The Main Task is to create ad hoc SQL, which will analyze measurement using Analytic Functions

Required points:

Use Analytic Function:

- FIRST_VALUE, LAST_VALUE

Note. Firs_value() is a function which shows the first value in selected partition
So, lets see the highest salary in managers position



```
16  SELECT DISTINCT product_name, LAST_VALUE(price)
17          OVER (PARTITION BY product_name ORDER BY price DESC
18          RANGE BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING)
19          AS lowest_price_product
20  FROM dim_products
21  WHERE product_name IN('Iphone')
22  ORDER BY product_name;
```

Script Output | Query Result | Query Result 1 | Query Result 2

Task completed in 0.082 seconds

PRODUCT_NAME	LOWEST_PRICE_PRODUCT
Iphone	599

Note. Here we used Last_value() function to see the minimum price for iPhone

2.2. Task 02: Create Ad Hoc SQL RANK, DENSE_RANK, ROWNUM

The Main Task is to create ad hoc SQL, which will split rows of data by Groups using Analytic Functions

Required points:

Use Analytic Function:

- RANK, DENSE_RANK, ROWNUM

```
4
5  select FIRST_NAME_EMPLOYEE,
6         salary,
7         RANK() OVER (PARTITION BY POSITION_NAME_ACTUAL ORDER BY salary) SALARY_RANK
8    from dim_employees
9   where POSITION_NAME_ACTUAL = 'Manager';
```

Script Output | Query Result

SQL | Fetched 250 rows in 0.13 seconds

	FIRST_NAME_EMPLOYEE	SALARY	SALARY_RANK
1	Ali	1012	1
2	Anibal	1021	2
3	Maxim	1053	3
4	Stasy	1083	4
5	Sara	1135	5
6	Abrigel	1222	6
7	Salamon	1296	7
8	Abrigel	1370	8
9	Samuel	1402	9
10	Sandy	1514	10
11	Mohammed	1527	11
12	Vika	1535	12
13	Sara	1623	13
14	Kumill	1636	14

Note. Here we use **RANK** analytic function to see ranked employees salaries

```
11  ----------DENSE_RANK----------
12
13  select FIRST_NAME_EMPLOYEE,
14         salary,
15         DENSE_RANK() OVER (PARTITION BY POSITION_NAME_ACTUAL ORDER BY salary) SALARY_RANK
16    from dim_employees
17   where POSITION_NAME_ACTUAL = 'Manager';
18
```

Script Output | Query Result

SQL | Fetched 100 rows in 0.049 seconds

	FIRST_NAME_EMPLOYEE	SALARY	SALARY_RANK
1	Ali	1012	1
2	Anibal	1021	2
3	Maxim	1053	3
4	Stasy	1083	4
5	Sara	1135	5
6	Abrigel	1222	6
7	Salamon	1296	7
8	Abrigel	1370	8
9	Samuel	1402	9
10	Sandy	1514	10
11	Mohammed	1527	11
12	Vika	1535	12

Note. Here we use **DENSE_RANK** analytic function to see **DENSE**_ranked employees' salaries

Note. The difference between this two analytic functions is that **RANK** function may return a **non-consecutive ranking** if the values being tested **are the same**. Whereas, the **DENSE_RANK** function will always result in a **sequential ranking**.

2.3. Task 03: Create Ad Hoc SQL AGGREAGATE FUNCS

The Main Task is to create ad hoc SQL, which will analyze measurement using Analytic Functions

Required points:

Use Analytic Function:

- AGGREAGATE FUNCS (MAX, MIN, AVG)

```
2  ----------SUM----------
3  SELECT SUM(salary) AS TOTAL_SALARIES
4  FROM dim_employees
5  WHERE position_name_actual LIKE '%manager';
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.031 seconds

	TOTAL_SALARIES
1	2849501

Note. Here we can see what **amount of money** have we paid to all of our Manages

```
7  ----------------------------AVG---------------------------------
8  SELECT POSITION_NAME_ACTUAL AS DEPARTAMENT, trunc(AVG(salary)) AS AVERAGE_SALARY
9  FROM dim_employees
10 GROUP BY POSITION_NAME_ACTUAL;
```

Script Output × | Query Result × | Query Result 1 ×

SQL | All Rows Fetched: 4 in 0.023 seconds

	DEPARTAMENT	AVERAGE_SALARY
1	Manager	5723
2	Sales Manager	5479
3	Product-line sales manager	5735
4	regional sales manager	5843

Note. Here we can see **AVERAGE** salary we paid to our employees grouped by departments

```
11 ----------------------------MIN---------------------------------
12 SELECT trunc(MIN(salary)) AS MINIMAL_SALARY
13 FROM dim_employees;
```

Script Output × | Query Result × | Query Result 1 ×

SQL | All Rows Fetched: 1 in 0.022 seconds

	MINIMAL_SALARY
1	1012

Note. Here we can see **MINIMAL** salary we paid in company

```
15 ----------------------------MAX---------------------------------
16 SELECT trunc(MAX(salary)) AS min_salary_in_company
17 FROM dim_employees;
```

Script Output × | Query Result × | Query Result 1 ×

SQL | All Rows Fetched: 1 in 0.014 seconds

	MIN_SALARY_IN_COMPANY
1	9995

Note. Here we can see **MAXIMUM** salary we paid in company

Laboratory Work Summary: At this laboratory work we practised usage of analytic and aggregative functions, such as:

- SUM
- AVG
- MAX
- MIN
- FIRST_VALUE
- LAST_VALUE
- RANK
- DENSE_RANK
- ROWNUM