IZ - Laboratory to the lecture:
Oracle Database - programming
Task list No. 2

Task 17. Display nicknames, rations of mice and band names for cats with a ration of mice greater than 50 which operate in FIELD area. Take into account the fact that there are cats with the right to hunt in the whole area "served" by the herd. Do not use subqueries.

Hunts in the field	Ration of mice	Band
TIGER	103	SUPERIORS
BALD	72	BLACK KNIGHTS
CAKE	67	BLACK KNIGHTS
FAST	65	BLACK KNIGHTS
TUBE	56	BLACK KNIGHTS

Task 18. Display, without using a subquery, the names and dates of joining the herd of cats that joined the herd before the cat named "JACEK". Sort the results descending by date of joining the herd.

Name	Hunts since
MELA	2008-11-01
KSAWERY	2008-07-12
BELA	2008-02-01
PUNIA	2008-01-01
PUCEK	2006-10-15
RUDA	2006-09-17
BOLEK	2006-08-15
ZUZIA	2006-07-21
KOREK	2004-03-16
CHYTRY	2002-05-05
MRUCZEK	2002-01-01

Task 19. For cats with function CAT and NICE, display the names of all their chiefs in order compatible of their hierarchy. Solve the task on three ways:

a) using only joins,
b) using a tree with CONNECT_BY_ROOT operator and pivot tables ,
c) using the tree with CONNECT_BY_ROOT operator and SYS_CONNECT_BY_PATH function.

Ad. a., Ad. b.

Name	Function	Chief 1	Chief 2	Chief 3
LUCEK	CAT	PUNIA	KOREK	MRUCZEK
RUDA	NICE	MRUCZEK		
MICKA	NICE	MRUCZEK		
SONIA	NICE	KOREK	MRUCZEK	
BELA	NICE	BOLEK	MRUCZEK	
DUDEK	CAT	PUCEK	MRUCZEK	
LATKA	CAT	PUCEK	MRUCZEK	

Ad. c.

Name	Function	Names of subsequent chiefs			
SONIA	NICE	SONIA	KOREK	MRUCZEK	
MICKA	NICE	MICKA	MRUCZEK		
LUCEK	CAT	LUCEK	PUNIA	KOREK	MRUCZEK
BELA	NICE	BELA	BOLEK	MRUCZEK	
DUDEK	CAT	DUDEK	PUCEK	MRUCZEK	
LATKA	CAT	LATKA	PUCEK	MRUCZEK	
RUDA	NICE	RUDA	MRUCZEK		

Task 20. Display the names of all the female cats who participated in the incidents after 01.01.2007. Additionally, display the names of the bands to which the female cats belong, names of their enemies along with their degree of hostility and date of the incident.

Name of female cat	Band name	Enemy name	Enemy rating	Incident date.
BELA	BLACK KNIGHTS	WILD BILL	10	2008-12-12
BELA	BLACK KNIGHTS	KAZIO	10	2009-01-07
LATKA	PINTO HUNTERS	UNRULY DYZIO	7	2011-07-14
MELA	PINTO HUNTERS	KAZIO	10	2009-02-07
PUNIA	WHITE HUNTERS	DUN	4	2010-12-14
RUDA	SUPERIORS	SLYBOOTS	5	2007-03-07
SONIA	WHITE HUNTERS	SLIM	1	2010-11-19

Task 21. Determine how many cats in each band have enemies.

Band name	Cats with enemies
BLACK KNIGHTS	5
WHITE HUNTERS	3
PINTO HUNTERS	4
SUPERIORS	3

Task 22. Find cats (with their functions) that have more than one enemy.

Function	Nickname of cat	Number of enemies
NICE	MISS	2
DIVISIVE	BOLEK	2
BOSS	TIGER	2

Task 23. Display the names of the cats that get the mice extra along with their total annual mouse consumption. Additionally, if their annual ration of mice exceeds 864, display the text "above 864", if it is 864, the text "864", if this ration is less than 864, the text "below 864". Sort the results in descending order of annual mouse dose. Use the set operator UNION for the solution of task.

Name	Annual dose	Dose
MRUCZEK	1632	above 864
BOLEK	1116	above 864
KOREK	1056	above 864
MICKA	864	864
RUDA	768	below 864
SONIA	660	below 864
BELA	624	below 864

Task 24. Find bands that don't have members. Display their numbers, names and operating areas. Solv the problem in two ways: without subqueries and set operators and using set operators.

BAND NO	NAME	SITE
5	ROCKERSI	FARM

Task 25. Find cats whose ration of mice is not less than tripled the highest ration of cats operating in ORCHARD performing the function NICE. Do not use the MAX function.

NAME	FUNCTION	RATION OF MICE
KOREK	THUG	75
MRUCZEK	BOSS	103

Task 26. Find the functions (apart from function BOSS) with which the highest and lowest average total ration of mice is associated. Do not use set operators (UNION, INTERSECT, MINUS).

Function	Average min and max mice
CAT	41
THUG	91

Task 27. Find cats occupying the first n places in terms of the total number of mice consumed (cats with the same consumption occupy the same place!). Solve the task using the following three ways:

a. using correlated subquery,
b. using the ROWNUM pseudo-column,
c. using the join operation of Cats relation with Cats relation.

Result for n=6

NICKNAME	EATS
TIGER	136
BALD	93
ZOMBIES	88
LOLA	72
CAKE	67
REEF	65
FAST	65

Task 28. Determine the years for which the number of entries to the herd is closest (from above and from below) of the average number of entries for all years (the average of the values determining the number of entries in individual years). Do not use views.

YEAR	NUMBER OF ENTRIES
2009	2
2010	2
2011	2
2002	2
Average	2.5714286
2006	4

Task 29. For male cats, for whom the total ration of mice does not exceed the average in their band, determine the following data: name of cat, his total mice consumption, number of members of his band, average of total consumption for his band. Do not use views. Solve task in three ways:

a. only with joining and without subqueries,
b. with joining and the only subquery in the FROM clause,
c. without joining and with two subqueries: one in the SELECT clause and one in the WHERE clause.

NAME	EATS	BAND NO	AVERAGE IN BAND
DUDEK	40	4	49.40
LUCEK	43	3	61.75
BARI	56	2	66.60
CHYTRY	50	1	80.50

Task. 30. Generate a list of cats containing the cats with the longest and the shortest membership in their bands. Apply a set operator.

NAME	JOIN THE HERD	
BARI	2009-09-01	<--- SHORTEST TIME IN THE BAND BLACK KNIGHTS
BELA	2008-02-01	
BOLEK	2006-08-15	
CHYTRY	2002-05-05	
DUDEK	2011-05-15	<--- SHORTEST TIME IN THE BAND PINTO HUNTERS
JACEK	2008-12-01	
KOREK	2004-03-16	<--- LONGEST TIME IN THE BAND WHITE HUNTERS
KSAWERY	2008-07-12	
LATKA	2011-01-01	
LUCEK	2010-03-01	
MELA	2008-11-01	
MICKA	2009-10-14	<--- SHORTEST TIME IN THE BAND SUPERIORS
MRUCZEK	2002-01-01	<--- LONGEST TIME IN THE BAND SUPERIORS
PUCEK	2006-10-15	<--- LONGEST TIME IN THE BAND PINTO HUNTERS
PUNIA	2008-01-01	
RUDA	2006-09-17	
SONIA	2010-11-18	<--- SHORTEST TIME IN THE BAND WHITE HUNTERS
ZUZIA	2006-07-21	<--- LONGEST TIME IN THE BAND BLACK KNIGHTS

Task. 31. Define the view choosing the following data: name of the band, average, maximum and minimum ration of mice in the band, total number of cats in the band and number of cats in the band with extra ration. Using the defined view, select the following data about the cat, whose nickname is provided interactively from the keyboard: nickname, name, function, ration of mice, minimum and maximum ration of mice in his band, and the date of joining the herd.

Contents of the view:

BAND_NAME	AVG_CONS	MAX_CONS	MIN_CONS	CAT	CAT_WITH_EXTRA
BLACK KNIGHTS	56,8	72	24	5	2
WHITE HUNTERS	49,75	75	20	4	2
SUPERIORS	50	103	22	4	3
PINTO HUNTERS	49,4	65	40	5	0

Result for the nickname CAKE:

NICKNAME	NAME	FUNCTION	EATS	CONSUMPTION LIMITS	HUNT FROM
CAKE	JACEK	CATCHING	67	OD 24 DO 72	2008-12-01

Task 32. For three cats of longest memberships in the herd from combined bands BLACK KNIGHTS and PINTO HUNTERS increase the allocation of mice by 10% of the minimum allocation in the entire herd or by 10 mice depending on whether the increase applies to a female cat or a male cat. Ration of extra mice for these cats (of both genders) ought to increase by 15% of the average ration extra in the cat's band. Display values before and after the increase and then roll back the changes.

Before update:

Nickname	Gender	Mice before pay increase	Extra before pay increase
MISS	W	24	28
FAST	W	65	0
BALD	M	72	21
LADY	W	51	0
MAN	M	51	0
REEF	M	65	0

After update:

Nickname	Gender	Mice before pay increase	Extra before pay increase
MISS	W	26	29
FAST	W	67	1
BALD	M	82	22
LADY	W	53	0
MAN	M	61	0
REEF	M	75	0

Task 33. Write a query that will calculate the sums of total mice consumption by cats performing each function, broken down by cat's bands and genders. Summarize the rations for each function. Solve the task in two ways:

a. using two (or three) SELECT queries and the DECODE function (or CASE),
b. using pivot tables.

BAND NAME	GENDER	HOW MANY	BOSS	THUG	CATCHING	CATCHER	CAT	NICE	DIVISIVE	SUM
BLACK KNIGHTS	Mele cat	3	0	93	67	56	0	0	0	216
BLACK KNIGHTS	Femele cat	2	0	0	65	0	0	52	0	117
PINTO HUNTERS	Mele cat	3	0	0	65	51	40	0	0	156
PINTO HUNTERS	Femele cat	2	0	0	0	51	40	0	0	91
SUPERIORS	Mele cat	2	136	0	0	0	0	0	0	186
SUPERIORS	Femele cat	2	0	0	0	0	0	136	0	136
WHITE HUNTERS	Mele cat	2	0	88	0	0	43	0	0	131
WHITE HUNTERS	Femele cat	2	0	0	61	0	0	55	0	116
Z Eats in total			136	181	258	158	123	243	50	1149