COMP7104-DASC7104 2022-2023 – Advanced Database Systems

Homework 1 – SQL (over holiday villages in France)

- **SQL is case insensitive, except for string values ('P' is not equal to 'p').**
- **Try to use the SQL standard syntax (e.g., the one of SQLite is a bit too far from it)**
- **2nd page gives a simple database instance, on which results are to be computed**
- **One pdf file submission with your answers**
- **You can use an actual DBMS to run and test your queries, but this is not necessary; this is a paper&pen assignment**

1) What is the result of the following query (on the example database instance), and what is its meaning (in simple and succinct English, i.e., not reading the query back to us; example: "*Find the villages that have no cabins in their composition*") ?

```
select min (WeekPrice)
from Pricing P, Season S
where P.CodeSeason=S.CodeSeason
  and NameSeason='Full Season' and typeCabin=6;
```

2) What is the result of the following query and what is its meaning (in simple, succinct English) ?

```
select P.CodeVillage, NameVillage
from Pricing P, Season S, Village V
where P.CodeSeason = S.CodeSeason
  and V.CodeVillage = P.CodeVillage
  and NameSeason='Full Season' and typeCabin=6
  and WeekPrice= (select min (WeekPrice)
                  from Pricing P, Season S
                  where P.CodeSeason=S.CodeSeason
                    and NameSeason='Full Season'  and typeCabin=6);
```

3) What is the result of the following query, and what is its meaning (in simple, succinct English) ?

```
select C.CodeVillage, NameVillage
from CompoVillage C, Cabin Ca, Village V
where C.TypeCabin = Ca.TypeCabin
  and V.CodeVillage=C.CodeVillage and Capacity = 6
group by C.CodeVillage , NameVillage
having count(*) = (select count(*) from Cabin where Capacity = 6);
```

4) Write in SQL the following queries (nested queries may be necessary, as in the previous exercises, but temporary named results / named queries for intermediary results are not).

a) For each village, list the cabins it has in its composition (as per table CompoVillage) with a count of at least 4 units (note: expected answer is a list of village name – cabin type pairs).

b) Find the capacity of the most spacious (single) cabin (as per capacity attribute) in Prémanon.

c) Find the names of villages offering at least one activity that is more expensive than all the activities offered by the Prémanon village.

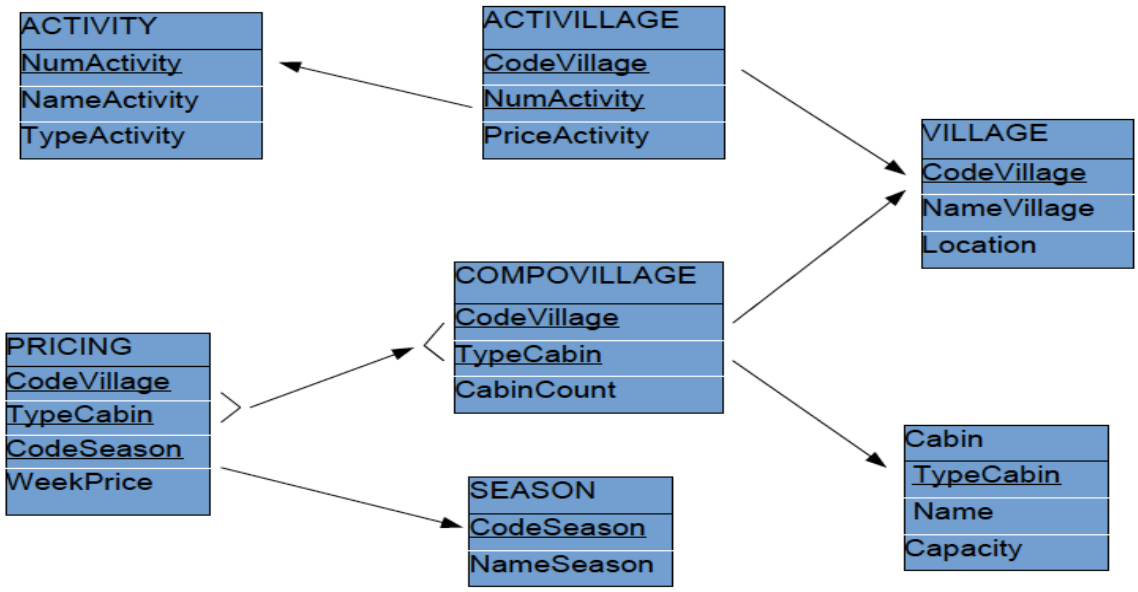
d) Find the names of villages offering more activities than the Vendes village.

e) Find the names of activities offered by at least two mountain villages.

f) Find the types of cabins that are not offered by any of the mountain villages (i.e. cabins one cannot find in the mountains).

g) For each village, find the number of activities of type Culture they offer (including 0 for those without such activities).

Holiday villages have in their composition various cabins, by which they provide accommodation. Holiday villages also provide various activities. Below is the schema and the database. Primary keys are underlined, arrows represent foreign keys.



Relational Schema – Holiday Villages

NUMACTIVITY	NAMEACTIVITY	TYPEACTIVITY
1	Swimming	Sport
2	Hiking	Culture
3	Trekking	Nature
4	Horse riding	Sport
5	Bike	Nature
6	Museum	Culture
7	Boat	Nature
8	Kayak	Sport
9	Tennis	Sport
10	Climbing	Sport

ACTIVITY

CODEVILLAGE	NAMEVILLAGE	LOCATION
1	Prémanon	NULL
2	Lélex	Mountain
3	Saint-Lary	Mountain
4	Le Grand Lioran	Mountain
5	Obernai	Plaine
6	Vendes	NULL
7	Sainte Suzanne	NULL
8	Port-Bail	Sea
9	Ars-en-Ré	Sea
10	Veules-les-Roses	Sea
11	Argol	NULL
12	Sarzeau	Sea

VILLAGE

TYPECABIN	NAME	CAPACITY
1	Evasion	2
2	Eden	4
3	Azur	4
4	Rêve	4
5	Palace	6
6	Détente	6

CABIN

CODEVILLAGE	TYPECABIN	CODESEASON	WEEKPRICE
1	3	LS	250
1	3	FS	550
2	4	LS	350
2	4	FS	550
3	6	LS	500
3	6	FS	680
4	1	LS	200
4	1	FS	370
4	6	LS	280

PRICING

CODESEASON	NAMESEASON
LS	Low Season
FS	Full Season

SEASON

CODEVILLAGE	NUMACTIVITY	PRICEACTIVIT
1	1	0
1	3	2
1	5	5
1	10	8
2	2	10
2	4	8
2	5	4
2	10	6
3	1	0
3	2	12
3	4	6
3	5	3
3	9	2
3	10	8
4	2	10
4	5	4
4	10	9
5	1	0
5	6	2
6	1	0
6	5	3
6	6	8
7	2	6
7	3	3
8	1	2
8	7	12
8	8	3
8	9	4
9	1	1
9	5	3
9	7	8
10	1	2
10	2	12
10	8	5
11	2	4
11	10	8
12	1	0
12	7	10
12	8	6
12	9	2

ACTIVILLAGE

CODEVILLAGE	TYPECABIN	CABINCOUNT
1	3	6
1	5	2
2	4	20
3	6	5
4	1	5
4	4	20
4	6	10
5	5	15
5	6	20
6	2	10
6	6	10
7	2	5
7	3	5
7	4	10
8	1	5
8	4	10
8	5	10
8	6	10
9	4	10
9	5	10
9	6	10
10	4	6
11	5	2
11	6	3
12	2	5
12	4	5
12	6	5

COMPOVILLAGE