Université Toulouse III – Paul sabatier
L2 Informatique

# Système d'informations et applications web – TD

Semestre 4

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# Table des matières

# Première partie

# Base de données

Chapitre 1

# Rappel sur le SQL – LDD/LMD

```sql
create table PROJET(
  NP varchar(4),
  nomP varchar(32),
  ne varchar(4),
  pbudget decimal(16),
  constraint pk_projet PRIMARY KEY(np),
  constraint fk_projet_ne FOREIGN KEY(ne) REFERENCES equipe(ne),
  constraint ck_projet_pbudget CHECK(ne >= 0)
);
```

```sql
update PROJET set pbudget = pbudget * 0.80;
update PROJET set pbudget = pbudget + 5000 where ne='e1';
```

```sql
delete from AFF where nc=(select nc from chercheur where nomc='Jean');
```

```sql
alter table EQUIPE ADD (
  np decimal(3),
  bt decimal(3),
  constraint ck_equipe_bt check(bt >= 0),
  constraint ck_equipe_np check(np >= 0)
);

update equipe e1 set np = (select count(*) from projets WHERE projets.ne=e1.ne),
          bt = (select sum(pbudget) from projets where projets.ne=e1.ne);
```

Chapitre 2

# Projection – Sélection – Agrégation

1. $R = \Pi_{ne}\ equipe$ $R[ne]$

```
select distinct NE from equipe;
```

2. $R = \Pi_{nomP,\ pBudget}(\sigma_{Ne='e1'}\ equipe)$ $R[nomp,\ pbudget]$

```
select distinct nomp, pbudget from projet where ne='e1';
select distinct nomp, pbudget from (select * from projets where ne='e1');
```

3. $R = \Pi_{nomC,\ nc}(\sigma_{nomc\ like\ '\%a\%'}\ chercheur)$ $R[nomc]$

```
select distinct nomc from chercheur where nomC like '%a%';
select distinct nomc from (select * from chercheur where nomC like '%a%');
```

4. $R = \texttt{COUNT}(projet,\ ne,\ np)$ $R[ne,\ count(np)]$

```
select ne, count(np) as COUNT_NP from projet group by ne;
```

5. $R = \texttt{COUNT}(aff,\ np,\ nc)$ $R[np,\ count(nc)]$

```
select np, count(nc) as COUNT_NC from aff group by np;
```

6. $R = \texttt{SUM}(projet,\ ne,\ pBudget)$ $R[ne,\ count(pBudget)]$

```
select ne, sum(pBudget) as SUM_PBUDGET from projet group by ne;
```

7. $R = \texttt{COUNT}(aff,\ nc;\ ;\ count(np) = 2)$ $R[nc]$

```
select nc from aff group by nc having count(np) = 2;
```

Chapitre 3

# Imbrication – Ensembliste

**R** Interdiction d'utiliser les jointures

1. $R = \Pi_{nome}(\sigma_{ne \in (\Pi_{ne}\ Projet)})$

```
select distinct nome from equipe e1
where e1.ne in (select distinct ne from projet);
```

2. $R = \Pi_{nomc}(\sigma_{nc \in (\Pi_{nc}(\sigma_{np='p1'}aff)}Chercheur)$

```
select distinct nomc from chercheur
where nc in (select distinct nc from aff where np='p1');
```

3.

$$\begin{aligned} R &= \Pi_{nomc}(\sigma_{nc \in R_1} chercheur) \\ R_1 &= \Pi_{nc}(\sigma_{np \in R_2} aff) \\ R_2 &= \Pi_{np}(\sigma_{ne='e1'} Projet) \end{aligned}$$

```
select distinct nomc from chercheur
where nc IN (select nc from aff
             where np in (select np from projet where ne = 'e1'));
```

4. $\Pi_{nomc}(\sigma_{nc \in (\Pi_{nc}\ aff)}chercheur)$

```
select distinct nomc from chercheur where nc in (select distinct n from aff);
```

5. $\Pi_{nomc}(\sigma_{nc \notin (\Pi_{nc}\ aff)}chercheur)$

```
select distinct nomc from chercheur where nc not in (select distinct n from aff);
```

6.

**R** À partir de cette question la notation algébrique n'est pas indispensable. L'utilisation des opérateurs ensembliste est indispensable, chercher ensuite une requete non ensembliste

```
select nomc from chercheur where nc in (
  select ne from aff
  where np in(select np from projet where nomp = 'SRI')
)
intersect
select nomc from chercheur where nc in (
  select ne from aff
  where np in(select np from projet where nomp = 'BIG')
)
```

7.

```
(select nomc from chercheur where nc in (
  select ne from aff
  where np in(select np from projet where nomp = 'SRI')
)
intersect
select nomc from chercheur where nc in (
  select ne from aff
  where np in(select np from projet where nomp = 'BIG')
))
except
(select nomc from chercheur where nc in (
  select ne from aff
  where np in(select np from projet where nomp <> 'SRI' and nomp <> 'BIG')
)
);
```

Chapitre 4

# Jointure

1.
```
select ne, nome, pbudget from equipe, projet
where equipe.ne = projet.ne and equipe.ne = 'e1';
```

2. $R = \Pi_{nomc,nome}(((chercheur \bowtie_{nc=nc}) \bowtie_{np=np} projet) \bowtie_{ne=ne} equipe)$

```
select nomc, nome from equipe, chercheur, aff
where aff.nc = chercheur.nc and aff.ne = equipe.ne and aff.np = projet.np;
```

3. $R = count((\Pi_{ne,nc}(aff \bowtie_{np=np} projet)) \bowtie_{ne=ne} equipe, nome, nc);$

```
select nome, count(nc)
from equipe, aff a, projet p
where a.np = p.np and p.ne = a.ne group by nome;
```

4.

$$\begin{aligned} R_1 &= \Pi_{numc,nomc}((chercheur \bowtie_{nc=nc} aff) \bowtie_{np=np} (\sigma_{nomp='sri'} projet)) \\ R_2 &= \Pi_{numc,nomc}((chercheur \bowtie_{nc=nc} aff) \bowtie_{np=np} (\sigma_{nomp='big'} projet)) \\ R &= R_1 \cap R_2 \end{aligned}$$

```
(select nc, nomc
from chercheur c, aff a, projet p
where p.nomp = 'SRI'
and c.nc = aff.nc
and aff.np = p.np )
  intersect
(select nc, nomc
from chercheur c, aff a, projet p
where p.nomp = 'BIG'
  and c.nc = aff.nc
  and aff.np = p.np )
```

5.

```
select nomc, count(np)
from chercheur c, aff a, projet p
where c.nc = a.nc and a.np = p.np
group by nomc;
```

6.

```
select nomc, avg(pbudge)
from chercheur c, aff a, projet
where c.nc = a.nc and a.np = p.np
group by nomc
```

# Deuxième partie

# XHTML et CSS

Chapitre 5

# XHTML

```html
<body>
  <table>
    <tr>
      <td>Nom</td>
      <td>Prénom</td>
      <td>Site web</td>
      <td>E-mail</td>
    </tr>
    <tr>
      <td>de Roquemaurel</td>
      <td>Antoine</td>
      <td><a href="http://ici.fr">Site Web</a></td>
      <td><a href="mailto:blabla@ici.com">E-mail</a></td>
  </table>
</body>
```

```html
<body>
  <h1>Principes de base</h1>
  <ul>
    <li>
      Certaines balises possèdent des attributs qui offrent diverses options
      <ul>
        <li>Exemple: attribut <em>method</em> de la balise <em>form</em></li>
      </ul>
    </li>
    <li>
      Il est possible d'avoir plusieurs attributs
      <ul>
        <li>Ordre sans importance</li>
        <li><em>Attribut="valeur"</em></li>
      </ul>
    </li>

</body>
```

```html
<form method="post" action"traitement.php" >
  <input type="text"  name="operandeGauche" />
  <select name="operation">
    <option value="+">+</option>
    <option value="-">-</option>
    <option value="*">*</option>
  </select>
  <input type="text"  name="operandeDroite" /><br />
  <input type="submit" value="envoyer" />
  <input type="reset" value="vider" />
</form>
```

Chapitre 6

# CSS

# Troisième partie

# PHP et MySQL