Système d'informations et applications web – TD

Semestre 4

Toulouse, le 27 mars 2013

Table des matières

Première partie

Base de données

Rappel sur le SQL – LDD/LMD

```
1  create table PROJET(
2    NP varchar(4),
3    nomP varchar(32),
4    ne varchar(4),
5    pbudget decimal(16),
6    constraint pk_projet PRIMARY KEY(np),
7    constraint fk_projet_ne FOREIGN KEY(ne) REFERENCES equipe(ne),
8    constraint ck_projet_pbudget CHECK(ne >= 0)
9  );
```

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

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

```
1  alter table EQUIPE ADD (
2    np decimal(3),
3    bt decimal(3),
4    constraint ck_equipe_bt check(bt >= 0),
5    constraint ck_equipe_np check(np >= 0)
6  );
7
8  update equipe e1 set np = (select count(*) from projets WHERE projets.ne=e1.ne),
9            bt = (select sum(pbudget) from projets where projets.ne=e1.ne);
```

Projection – Sélection – Agrégation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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.

```sql
(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')
)
);
```

Antoine de ROQUEMAUREL

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

XHTML

```
1  <body>
2    <table>
3      <tr>
4        <td>Nom</td>
5        <td>Prénom</td>
6        <td>Site web</td>
7        <td>E-mail</td>
8      </tr>
9      <tr>
10       <td>de Roquemaurel</td>
11       <td>Antoine</td>
12       <td><a href="http://ici.fr">Site Web</a></td>
13       <td><a href="mailto:blabla@ici.com">E-mail</a></td>
14    </table>
15 </body>
```

```
1  <body>
2    <h1>Principes de base</h1>
3    <ul>
4      <li>
5        Certaines balises possèdent des attributs qui offrent diverses options
6        <ul>
7          <li>Exemple: attribut <em>method</em> de la balise <em>form</em></li>
8        </ul>
9      </li>
10     <li>
11       Il est possible d'avoir plusieurs attributs
12       <ul>
13         <li>Ordre sans importance</li>
14         <li><em>Attribut="valeur"</em></li>
15       </ul>
16     </li>
17
18 </body>
```

```
1  <form method="post" action"traitement.php" >
2    <input type="text"  name="operandeGauche" />
3    <select name="operation">
4      <option value="+">+</option>
5      <option value="-">-</option>
6      <option value="*">*</option>
7    </select>
8    <input type="text"  name="operandeDroite" /><br />
9    <input type="submit" value="envoyer" />
10   <input type="reset" value="vider" />
11 </form>
```

CSS

Troisième partie

PHP et MySQL

PHP

7.1   Affichage de la table de multiplication par 9

```php
<table>
  <?php
    $valeur = 9;
    echo 'Table de multiplication par '.$valeur.'<br/>';
    echo '<tr>';
    echo '<td>'.$valeur.'*</td>';
    for($i=0 ; $i < 9 ; ++$i) {
       echo '<td>'.$i.'</td>';
    }
    echo '</tr>';
    echo '<tr>';
    echo '<td>=</td>';
    for($j=0 ; $j < 9 ; ++$j) {
       echo '<td>'.$i*$valeur.'</td>';
    }
    echo '</tr>';
  ?>
</table>
```