SQL Tutorial -- Part 1

The tutorials are all written in standard **ANSI SQL**
Vendor DBMS's, such as SQL Server, DB2, Oracle and MySQL are pretty close implementations of the standard.
All programs given here run in MySQL.
MS Access is a substantial variant of the SQL standard, much weaker and incomplete in many aspects.

The DDL (Data Definition Language) is part of the standard. It is usually easier to use the dbms GUI to create and load a table, instead of SQL.
In this course you are permitted to do that, but you are still required to learn the DDL.

create a new database named MyUniv for the university database

To use MySQL for this start the MySQL Command Line Client and execute:

```
create database MyUniv;
```

create a new database table for professor data

```
create table prof
(pnum char(9) primary key, /* fixed length string */
lastname varchar(12) not null, /* varying length string */
firstname varchar(12),
dept char(4),
office char(6),
rank char(1),
date_emp date not null,
salary decimal(8,2),
manager char(9));
```

append data to professor table on-line

```
insert into prof (pnum,lastname,firstname,dept,office,rank,date_emp,
salary,manager)
values ('123456789','Bush','George','GOVT','1600PA','P',
'2001-01-20',10000.00,'123456789');
```

delete rows: remove all professors whose manager's ID is 123456789

```
delete
from prof
where manager = '123456789';
```

remove all records from a table

```
delete
from prof;
```

remove a table from the database

```
drop table prof;
```

add a new column to an existing database table

```
alter table
prof
add birthdate date;
```

display the columns in a table

```
show columns
from prof;
```

update one or more rows of a database table

```
update prof
set salary = salary / 10
where lastname = 'Bush';
```

Information retrieval from a single database table

list the entire profs table

```
select *
from prof;
```

find the names of all professors

```
select lastname, firstname
from prof;
```

make a list of all departments (without duplicates)

```
select distinct dept
from prof;
```

find the last names and ID's of all Computer Science professors

```
select lastname, pnum, dept
from prof
where dept = 'CS';
```

list the names and manager ID's of all profs who make more than 60K

```
select lastname, manager, salary
from prof
where salary > 60000;
```

find the name and date employed of all profs whose manager ID is 987654321 and whose salary is more than 50K

```
select lastname, manager, date_emp, salary
from prof
where manager = '837524163'
and salary > 50000;
```