

## Worksheet 2

In this class we will start with the interaction with Yap, to validate some concepts of deductive databases. We will make a simple prototype of a deductive database system by linking MySQL and Yap, using the respective C APIs.

If you haven't already done so, you will need to install Yap. The instructions below should produce such an installation:

```
sudo apt-get install git cmake build-essential swig libgmp-dev mpi-default-dev libgecode-dev  
libxml2-dev libraptor2-dev openjdk-11-jre openjdk-11-jdk libreadline-dev
```

```
git clone https://github.com/vscosta/yap-6.3 cd yap-6.3  
./configure --prefix=/usr  
make
```

```
sudo make install
```

### Exercise:

In a MySQL database you should download the file `dinasty_dump.sql` which has the dump of 3 tables: `person`, `marriage` and `parent`, which describe a partial family tree of the Windsor dynasty.

- a) Execute the SQL file in order to create the 3 tables in a MySQL database.
- b) Implement through a C program an export of the content of the 3 tables to Prolog predicate facts, such as:

```
person(3,'Prince George',m,'2013-07-22','NULL' ).  
marriage(3,5,6,'1981-07-01','1996-08-28').  
parent(1,5,1).
```

- c) Upload the Prolog file generated in the previous paragraph to Yap and write the following queries in Prolog/Datalog:

1. What is the name of Prince George's mother?
2. Which people have siblings?
3. What is the name of 'Zara Phillips' sister-in-law?
4. What are the names of the grandchildren of "Princess Ann"?

- d) For each of the 4 questions in the previous question, write the same queries in Relational Algebra.