

PostgreSQL (for beginners like me)

- Postgres = Flavor of SQL = relational database
 - Ie, specific datatypes (=a column) are stored in tables.
 - Query data to return (part of) a column (or columns)

```
CREATE TABLE myTable (
```

```
    Exp_name VARCHAR(10) NOT NULL
```

```
    Lab_name VARCHAR(10) NOT NULL
```

```
    Coll_name VARCHAR(100) NOT NULL )
```

```
INSERT INTO myTable (Exp_name, Lab_name Coll_name)
```

```
VALUES ('MIPP', 'FNAL', 'Lange')
```

```
Etc,etc.
```

Interfaces

- Postgres (www.postgres.org) comes with a C and C++ interface.
 - By default you don't compile the C++ lib. I'm worried about that. Will find out when coding...
 - Other GUIs available. Need to see if one is right for us to “view” data interactively.
- Documentation
 - At least in Silicon Valley, Postgres books are greatly outnumbered by MySQL (and Oracle)
 - MySQL is a rather trimmed down version of SQL, which likely explains this...
 - Fortunately → At least 2 postgres books are on the web

Implementation

- (no code yet)
- Definitely want to hide Postgres specific code behind abstract SQL class(es)
- SQLDatabase \leftrightarrow SQLPostgresDatabase
 - Create/get/remove a table
- SQLTable \leftrightarrow SQLPostgresTable
 - Construct a table from columns, query, deletes
- SQLColumn \leftrightarrow SQLPostgresTable
- This way it should be less painful to switch to a different SQL database product in the future (depending on how many “non-standard” features we use)

Higher level implementation

- I need some examples of use cases to decide how to proceed with the next level of needed code
 - I hope that not everyone needs to know SQL. Should be possible to have an interface class for our specific use cases.
 - 1 structure of ‘Table’ \leftrightarrow 1 C++ class
 - I don’t know if its possible to query a database to find if a table exists and if so what its structure is.
- Postgres appears to support arrays (of float/ints etc)
 - Not sure its “standard”, but I don’t think we can live without?