

The *attica* database system

version 1.5

(see also <http://www.inf.ed.ac.uk/teaching/courses/adbs/attica>)

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Overview

- Experimental DBMS written in Java
- Uses SQL as query language
- Single user only
- Three main components
 - attica front-end (you will not have to touch this)
 - attica storage manager (you may touch this)
 - attica query engine (you will touch this)

Downloading attica

- Source code
 - www.inf.ed.ac.uk/teaching/courses/adbs/attica/attica-src.zip
- Binary
 - www.inf.ed.ac.uk/teaching/courses/adbs/attica/attica-build.zip
- Source code documentation (javadoc)
 - www.inf.ed.ac.uk/teaching/courses/adbs/attica/attica-doc.zip

Building attica with ant

- **Recommended way** of building the system (works fine with most IDEs too)
- Download the source tree and save it in some directory
- Use `build.xml` as the buildfile

Copy attica-src.zip to some location, change to that location

```
$ unzip attica-src.zip
```

```
$ ant build
```

- Distribution directories
 - `src/`: Java source files
 - `build/`: Java class files
 - `dist/docs/`: Javadoc documents
 - `dist/attica.jar`: attica jarfile/executable

Alternative build targets

- `ant build`: compile the source code
- `ant javadoc`: generate the documentation
- `ant jar`: create the jar file under `dist/`
- `ant dist`: produces both jar file and documentation
- `ant clean`: remove the build directories
- `ant cleanDatabase`: removes the database directories
- `ant cleanAll`: removes both the build and database directories

Running attica

- Add attica **classes** to the Java **classpath**
 - `$ export CLASSPATH=$CLASSPATH:/path/to/attica/build`
 - add to your `~/ .bashrc` file for permanent effect
- Create a Java **properties file** (e.g., `attica.properties`)

```
# The attica server directory
attica.directory=/home/sviglas/attica/db
# The attica temporary directory
attica.temp.directory=/home/sviglas/attica/tmp
# The number of pages in the buffer pool
attica.buffersize=50
```
- The **first time only** run in initialization mode
 - `$ java org.dejave.attica.server.Database --properties path/to/attica.properties --init`
- Exit by typing `exit;`

Running from the jar file

- No need to change your `$CLASSPATH` for this one
 - `java -jar attica.jar <attica arguments>`
- Create the properties file (as before)
- **Only the first time** run in initialisation mode
 - `$ java -jar attica.jar --properties path/to/attica.properties --init`

attica SQL

- Typical SQL implementation of data definition and manipulation
- Examples
 - aSQL > `create table` tablename (attr1 type1, ..., attrN typeN);
 - aSQL > `insert into` tablename `values` (attr1_val, ..., attrN_val);
 - aSQL > `select` tablename.attrX, tablename.attrY `from` tablename `where` tablename.attrZ < 42;

Full example

- 1 `create table employee (id integer, name string, address string, salary integer);`
- 2 `describe table employee;`
- 3 `catalog;`
- 4 `insert into employee values (1, 'Bill Gates', 'Redmond WA', 60000);`
- 5 `insert into employee values (2, 'Steve Jobs', 'Cupertino CA', 40000);`
- 6 `insert into employee values (3, 'Theman Withaplan', 'Edinburgh UK', 80000);`
- 7 `select employee.name, employee.address from employee where employee.salary > 70000;`