

BASE X



BaseX Introduction

- A light-weight, high-performance and scalable **XML Database** engine and **XPath/XQuery Processor**.
- Interactive and user-friendly **GUI frontend**
- Different programming APIs to connect to BaseX XML database
 - REST-Style Web API
 - Variety of Client APIs for different programming languages
 - See <http://docs.basex.org/wiki/Developing>
- **YOUR ACTION:** Download Core Package Java BaseX to your laptop or your U: drive or to D: drive on PC (<http://basex.org/products/download/all-downloads>)



BaseX: Database functionality

Creating Database

Open Database

Buttons for Different Visualisations of XML
that is in the Database

The screenshot shows the BaseX XQuerySample application interface. The title bar reads "X 7.7.1 - XQuerySample". The top toolbar contains icons for creating a new database, opening a database, and various visualization options (tree, table, etc.). The "Command" field is empty. Below the toolbar is a section labeled "Editor" containing a text area with the XQuery `//entry`. To the right of the editor is a "3 Results" indicator and a filter icon. Below the editor is a section labeled "Result" displaying the XML output. The XML is shown in a tree view, with the root element being `reviews`. It contains three `entry` elements, each with `title`, `price`, and `review` children. The `review` text is highlighted in blue. The bottom of the interface shows the raw XML text:

```
<entry>
  <title>Data on the Web</title>
  <price>34.95</price>
  <review>A very good discussion of semi-structured database
    systems and XML.</review>
</entry>
<entry>
```

Note that when XML is loaded in the database, you no longer need `doc("filename")` in the XQuery



Step 1: Create Database with some XML file

Creating
Database

The screenshot shows the BaseX 7.7.1 - XQuerySample application interface. A black arrow points to the 'File' menu icon in the top toolbar. The 'Command' field is empty. The 'Editor' pane shows the XQuery `//entry`. The 'Result' pane displays the XML structure and its corresponding text output.

XML Structure Diagram:

```
graph TD
    reviews[reviews] --> entry1[entry]
    reviews --> entry2[entry]
    reviews --> entry3[entry]
    entry1 --> title1[title]
    entry1 --> price1[price]
    entry1 --> review1[review]
    entry2 --> title2[title]
    entry2 --> price2[price]
    entry2 --> review2[review]
    entry3 --> title3[title]
    entry3 --> price3[price]
    entry3 --> review3[review]
```

XML Text Output:

```
<entry>
  <title>Data on the Web</title>
  <price>34.95</price>
  <review>A very good discussion of semi-structured database
    systems and XML.</review>
</entry>
<entry>
```



Step 3: Open Database

Open Database

The screenshot shows the BaseX 7.7.1 - XQuerySample application window. An arrow points to the 'Open Database' button in the toolbar. The interface is divided into three main sections: Editor, Diagram, and Result.

Editor: Contains the XQuery `//entry`.

Diagram: A tree diagram showing the structure of the XML data. It has a root node 'reviews' with three children 'entry'. Each 'entry' node has three children: 'title', 'price', and 'review'. Each of these nodes has a 'text()' child.

Result: Displays the XML output of the query:

```
<entry>
  <title>Data on the Web</title>
  <price>34.95</price>
  <review>A very good discussion of semi-structured database
    systems and XML.</review>
</entry>
<entry>
```

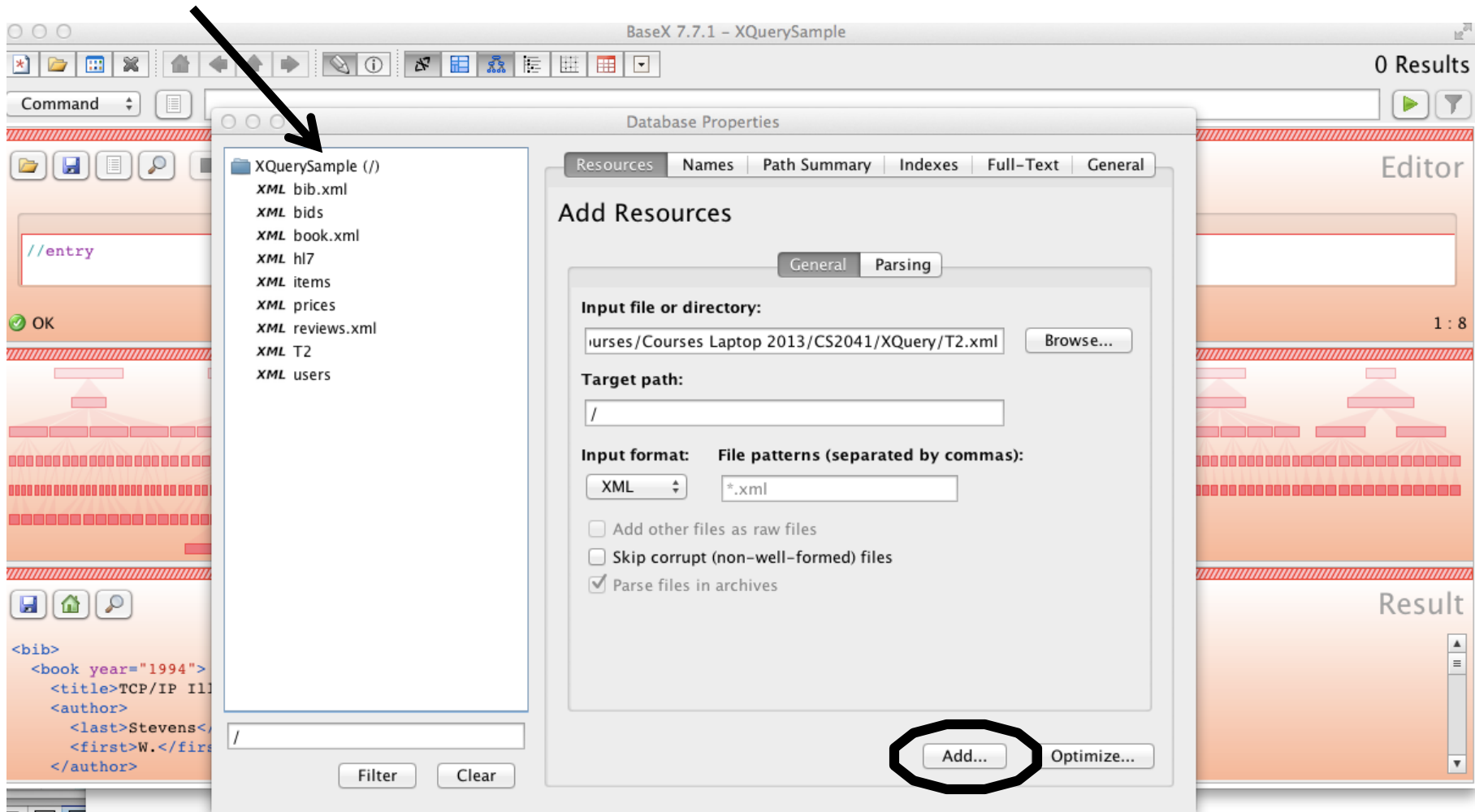
Note that when XML is loaded in the database, you no longer need `doc("filename")` in the XQuery



Step 4: Add more XML files

Menu "Database" then item "Properties"

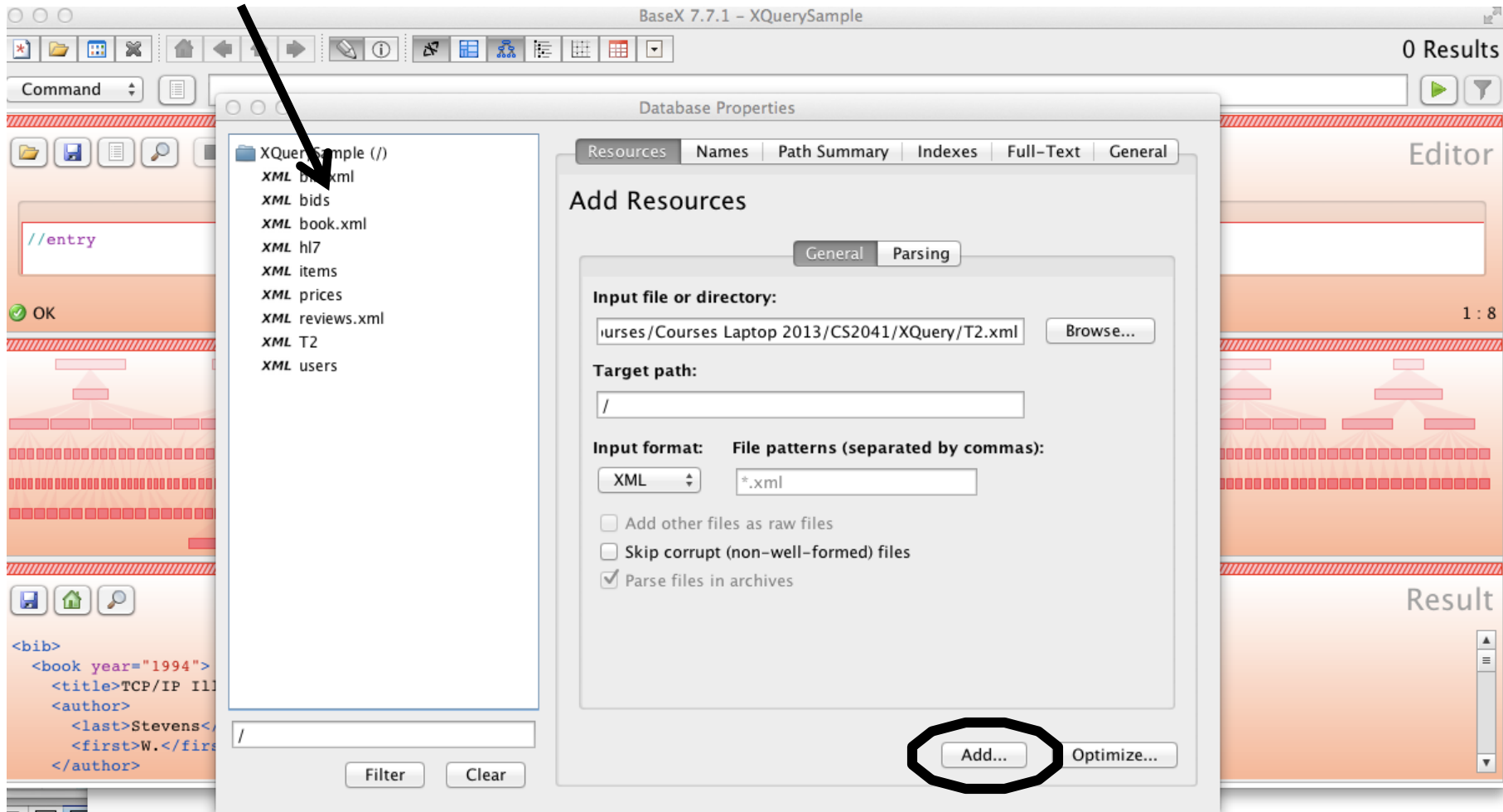
XML files that were added to the Database using Add button below



Note that when XML is loaded in the database, any changes to XML file has to be RELOADED

To Delete XML file from database so you can load new version

Select XML file, right click, select Delete



Note that when XML is loaded in the database, any changes to XML file has to be RELOADED

Step 5: Visualise Data

Buttons for Different Visualisations of XML
that is in **THIS** Database



The screenshot displays the XQuerySample application window. The title bar reads "X 7.7.1 - XQuerySample". The toolbar at the top contains various icons, with a group of five icons (representing different visualization types) circled in black. Below the toolbar is a "Command" input field. The main area is divided into three sections: "Editor", "Result", and "Diagram". The "Editor" section shows a query: `//entry`. The "Result" section shows the XML output:

```
<entry>
  <title>Data on the Web</title>
  <price>34.95</price>
  <review>A very good discussion of semi-structured database
    systems and XML.</review>
</entry>
<entry>
```

. The "Diagram" section shows a tree structure of the XML data, with three "entry" nodes branching into "title", "price", and "review" nodes, each containing a "text()" value.

