

## The PhiloLogic4 API and Android PhiloReader Apps

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The ARTFL Project would like to submit a proposal for a poster session to demonstrate Android PhiloReader Apps that we are building in conjunction with PhiloLogic4, our next generation corpus query and text retrieval platform for digital humanities databases. For this session, we plan to show an app built around an installation of the EEBO-TCP database. We will also have apps built around ARTFL's Frantext database and a collection of Shakespeare's plays.

A primary goal of the PhiloLogic4 project has been to allow ARTFL -- or any digital humanities group using this software -- to develop different varieties of results display and user interfaces with ease. For example, the databases ARTFL has already released in beta form under PhiloLogic4 for traditional browser access<sup>1</sup> have features such as frequency sidebars for query results, links within those sidebars for faceted browsing, and dynamic Time Series reports. ARTFL's PhiloReader Apps extend and exemplify this fundamental design goal. They take advantage of PhiloLogic4's simple set of query parameters and flexible results object formatting to enable text search and retrieval on handheld devices.

ARTFL intends these apps to serve as a lighter-weight alternative to web browser apps for interacting with the PhiloLogic4 installations of text databases on our main production servers. The interface has been designed with a focus on the reading functionality that PhiloLogic4 already offers in its web incarnation. As such, users can conduct word and/or metadata search from a toggling drawer search form with the aim of finding and reading text sections. More intensive text analysis would require the search form accessible through a web browser.

Functionally, the Android code interacts with PhiloLogic4 databases simply by sending search queries and then displaying the results PhiloLogic4 sends back over the network. From the search terms the user enters in the form, the app builds a query URI compliant with the PhiloLogic4 API, which includes parameters such as variety of search report, number of results per page, and metadata values. Hard-coded in this URI is also a request to PhiloLogic4 to encode the query results in a JSON object specifically tailored for the apps. This JSON object can contain chunks of the search result, bibliographic metadata, and a PhiloLogic id used for building further links. The Android code renders the JSON object into a string array and displays search results in a listview<sup>2</sup>. The user can then select individual list items to get fuller chunks of text. The Android code submits a second query to the PhiloLogic4 database for that specific chunk of text which is, again, returned as a JSON object and rendered for the user to read. The

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<sup>1</sup> See <http://artfl-project.uchicago.edu/>

<sup>2</sup> ListView is Android terminology for a layout that displays a vertically scrollable list. See <http://developer.android.com/guide/topics/ui/layout/listview.html>

PhiloReader code also allows users to bookmark text chunks for easy text access in later sessions.

ARTFL chose Android Java as the initial development language for these apps because of existing in-house capability. In the coming months we intend to have parallel apps developed for iPads, though we are not certain they will be ready in time to present at DHCS. Nevertheless, ARTFL believes these Android apps will demonstrate the ease and flexibility of using the PhiloLogic4 API to develop new ways of interacting with text databases.