

# Introduction to Archivists' Toolkit Version 2.0.0 (update 5)

**\*\* DRAFT \*\***

## Background

Archivists' Toolkit (AT) is an open source archival data management system. The AT project is a collaboration of the University of California San Diego Libraries, the New York University Libraries, and the Five Colleges, Inc. Libraries, and is funded by The Andrew W. Mellon Foundation. More information on the AT project and AT software is available at the AT project website at <http://www.archiviststoolkit.org/>.

Archivists' Toolkit consists of a Java desktop client communicating with AT database located on MySQL, SQL Server, or Oracle database server. AT's current version is Version 2.0.0 (Update 5), released in April 2010.

## Product installation

An 'empty' (no user created tables) database on MySQL, SQL Server, or Oracle is required before installation of AT. An admin logon with DBO access must be set up in the database for use by the AT application. Java Virtual Machine must be installed on client computer before or at the time of installation of AT. AT client is a Java desktop application available for Mac OS, Windows, and Linux operating systems.

AT is a client-only application, without any server component. Its installation is brief, easy and involves only a few prompts. AT client uses AT database located on database server. JDBC database connection URL, admin user id, and password are specified to facilitate communication between AT client and database server.

## Initial Configuration

After successful installation of AT, the AT database maintenance program must be run to initialize/update the AT database. Database connection URL, database admin user id, and password are specified for identifying the AT database. Next, repository information is entered. Finally, AT super user id and password are entered to set up the AT super user. The resulting client application user will be a "super user" with all access privileges within AT.

Now the AT administrator can run the AT client and finish initial configuration/setup. All configuration/set up activities can be performed through AT's Setup menu. Use database connection data (connection URL, server type, database admin user id and password) and AT super user data (super user id and password) mentioned above. Next, create user ids for AT users and grant them access class as required. AT supports five access classes—Super User, Repository Manager, Project Manager, Advance Data Entry, and Beginning Data Entry. Other items that can be setup/configured are: repositories, rapid data entry screens, lookup lists, notes, and date format. In addition to these AT data tables and fonts can also be configured.

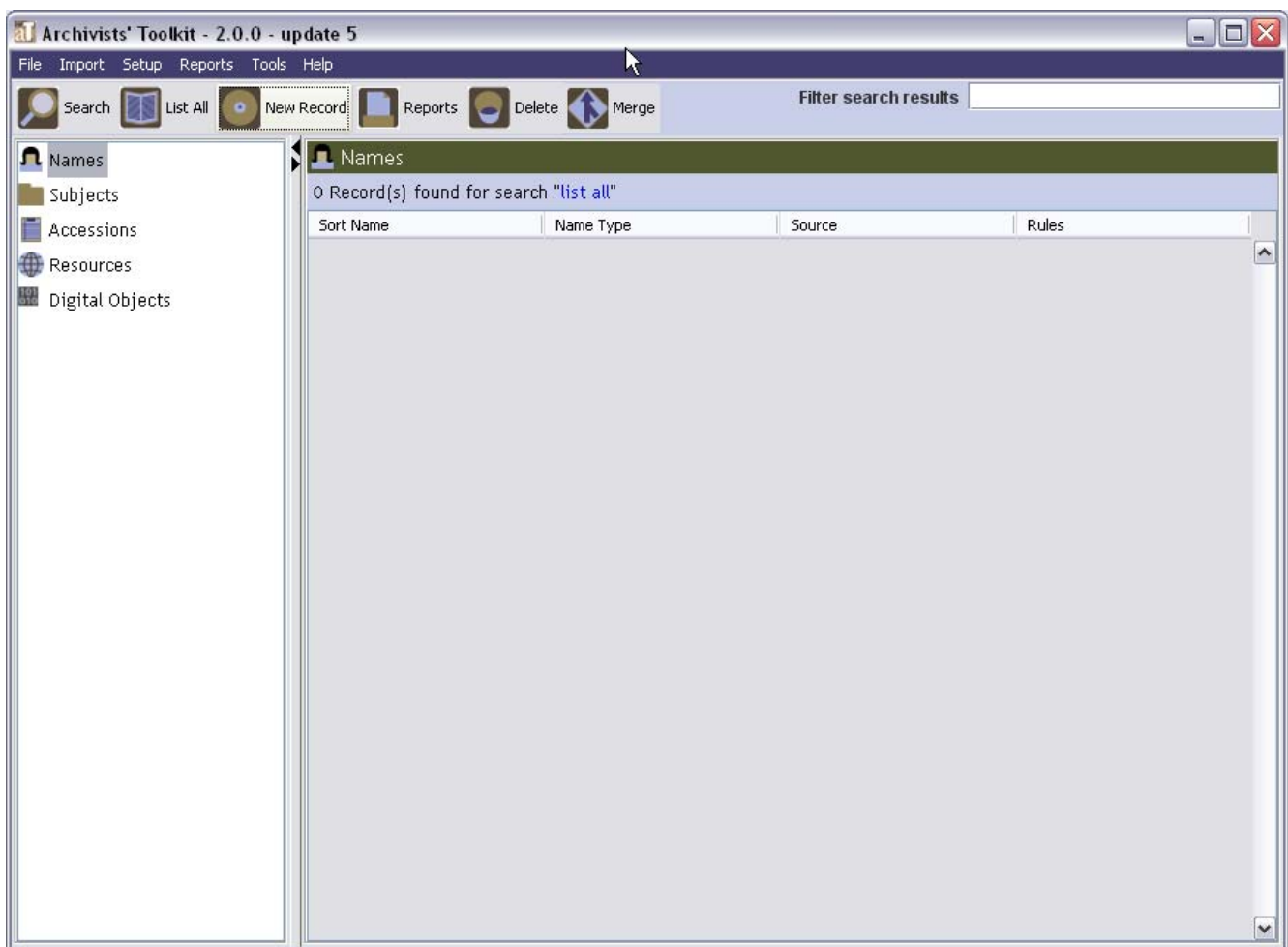
All other AT users can now download and install AT client on their PC. They will specify database connection data (connection URL, server type, database admin user id and password) mentioned above for server connection and log in using AT user ids and password assigned to them.

## AT Client Overview

After new AT users have been created (and their user records stored in the AT database), AT client can be installed on the users' PCs and users can access AT using their assigned AT user id and password. Note that database connection information must be entered when using the client for the first time on any client PC. However, database admin user id specified in database connection is not a valid AT user id. Valid AT user id and password must be specified to log into AT and access AT features.

### AT User Interface

The main AT user interface consists of four portions: Menu Bar (top), Command Bar (below menu bar), Navigation Zone (left) and List Screen Display (right).



Menu Bar has six menu options: File, Import, Setup, Reports, Tools, and Help

Command Bar displays buttons based on items selected from the Navigation Zone. For example, when Name item is selected from the Navigation Zone, the following command buttons are displayed: Search, List All, New Record, Delete, Merge.

Navigation Zone lists basic record classes used by AT—Names, Subjects, Accessions, Resources, and Digital Objects.

List Screen Display lists all records of the basic record class selected from the navigation zone. Display order can be changed. New records can be added. Records can be searched and filtered. Also, records can be selected and selected records can be deleted, printed, or merged.

Clicking on an individual line entry in the List Screen Display shows detail of the selected record. In most cases, record detail screens have different tabs each of which will display related data items. Record detail screens also have navigation buttons and information at the bottom.

The screenshot shows a software window titled "Names" with a tabbed interface. The "Details" tab is active, showing a form for a "Name Identity Record: Person". The form includes fields for Prefix, Primary Name, Rest of Name, Title, Suffix, Number, Dates, Qualifier, Fuller Form, Source, and Rules. There is also a checkbox for "Direct Order". Below the form is a "Sort Name" field and a checkbox for "Create Sort Name Automatically". The "Description Type" is a dropdown menu, and the "Description Note" and "Citation" fields are large text areas. At the bottom of the window is a navigation bar with buttons for "First", "Previous", "Next", "Last", "Reports", "Close", "Save", and "+ 1".

Users with appropriate authorization (access class) can set up Rapid Data Entry Screen, Lookup List, and Notes through corresponding item in the Setup menu. These features are useful during data entry. Date format can be specified using Date Format Setting from the Setup menu.

Name (label), length, and order of individual fields in records can be changed by selecting Configure Application from the Setup menu. Fonts used on various screen displays can be configured through Configure Fonts from the Setup menu.

### Various Data Records used by AT

AT uses several record “classes” or “types” to store archive and archive management data. The major data record classes maintained in AT are described below.

*Repository* record contains information about archive repository. Although the repository is named and a stub repository record is created during AT installation, repository detail (information attributes, statistics, default values, and notes) should be entered through Repositories option from the Setup menu.

*User* records contain information on AT users and their access level. User records are created/maintained through Users option of the Setup menu.

*Location* records are used to describe information about location (current or future) of archive resource. Location records are created/maintained through Locations option of the Tools menu. Locations are linked to Resources and Accessions.

*Accession* records are used to describe transaction through which the repository acquires custody of material (physical or electronic) for archiving. Accession may represent deposit, gift, purchase, or transfer. Accession records are created/maintained by selecting the Accessions class from the Navigation Zone and then clicking appropriate button in the Command Bar or an appropriate item in the Display List. Accessions are linked to Resources, Names, Subjects, and Locations.

*Resource* records are used to describe an archival entity (an item or an aggregation of items) acquired, managed, and made accessible by the repository. A resource may have one/more instances (state/embodiment of described content—for example, a book/collection can have paper and digital version). A Resource record may have zero/more Resource Component records (child resources) representing series, sub-series, file, item, etc. Also, a Resource record may have Sibling Resource records. Resource records are created/maintained by selecting the Resources class from the Navigation Zone and then clicking appropriate button in the Command Bar or an appropriate item in the Display List. Resource records are linked to Accessions, Locations, Names, Subjects, and Digital Objects.

*Subject* records are used to describe type of archival resource. The type may represent function, genre/form, geographic name, occupation, topical term, or uniform title. Subject records are created/maintained by selecting the Subjects class from the Navigation Zone and then clicking appropriate button in the Command Bar or an appropriate item in the Display List. Subject records are linked to Accession, Resource, Resource Component, and Digital Object, and Digital Object Component records.

*Name* records are used to describe names and their functions in the context of archival resource and archival management. Three types of Name records are supported: Person, Corporate, and Family. Three types of functions are supported for name: Creator, Source, and Subject. Name records are created/maintained by selecting the Names class from the Navigation Zone and then clicking appropriate button in the Command Bar or an appropriate item in the Display List. Names with creator or subject function may be linked to Accession, Resource, Resource Component, Digital Object, and Digital Object Component records. Names with source function can be linked to Accession, Resource and Digital Object records and not component level records.

*Digital Object* records are used to describe a digital archival item or an aggregation of digital items. A Digital Object record may have zero/more Digital Object Component records (child digital objects). Also, a Digital

Object record may have Sibling Digital Object records. Digital Objects are treated as an instance of the related resource (or resource component) record. Digital Object Records are created/maintained by selecting the Digital Objects class from the Navigation Zone and then clicking appropriate button in the Command Bar or an appropriate item in the Display List. Digital Objects are linked to Name, Subject, Resource, and Resource Component records.

## **Archive Management using AT**

Archive management using AT will include setting up repository, defining archive collection, populating collection data, recording accessions, maintaining archive collection data, entering assessment, producing periodic reports, etc.

### User access to AT

After a repository is set up and users are defined to AT, authorized users can access AT to perform archive management tasks. What a user can do in AT is determined by the user's authorization (access class). For example, users with the super user access class can perform all set up/configuration tasks and archive records management in all repositories. Users with repository manager access class can perform limited setup tasks, can add/maintain users, edit repository information, and perform all archive management tasks only within a specific repository. Users with project manager, advanced data entry, and beginning data entry access class face increasing restrictions/limitations when using AT.

### Data Import

Legacy descriptive data (including finding aids) can be imported into AT from EAD (Enhanced Archival Description) 2002 or MARCXML (Machine Readable Cataloging XML) files. When using EAD files, an input folder can be specified to accomplish import of EAD batch. The entire EAD data structure does not map directly to the AT's data structure. So, certain elements are imported as mixed content in AT data fields in order to make sure that no data is lost. Import of MARCXML records into AT involves loss of data granularity, and in some cases, loss of data. AT stores imported legacy descriptive data in resource records.

In addition to resource data, accession and digital object data can also be imported into AT database. Accession data can be imported by using a tab-delimited file or the XML schema included with AT program files. Digital object data can be imported using a tab-limited file.

All import functions can be accessed through Import menu. Importing legacy data may require data cleanup, either before the data is imported, or within AT after the data have been imported.

### Data Export

Selected resource records can be exported to EAD or MARCXML file by clicking appropriate buttons in the command bar of resource record list display screen. Individual resource records can be exported to EAD or MARCXML file by clicking appropriate button at the bottom of the resource detail display. Note that AT does not support round-tripping of imported data, meaning exported EAD/MARCXML file may not be identical to imported file used to populate AT resource records.

Selected digital object records can be exported to MARCXML, METS (Metadata Encoding and Transmission Standards), MODS (Metadata Object Description Schema), or DC (Dublin Core) file by clicking appropriate buttons in the command bar of record list display screen. Individual digital object records can be exported to MARCXML, METS, MODS, or DC file by clicking appropriate button at the bottom of the digital object detail display.

#### Working with primary record classes—Accessions, Resources, Digital Objects, Names, and Subjects

The five most important record classes—name, subject, accession, resource, and digital object—are listed in the Navigation Zone. The Command Bar displays command buttons applicable to the selected record class. Command buttons allow record search, new record entry, record list, and deleting, merging, and export of existing records. Various reports can be generated for the selected record class by using Reports command button.

**Accession** record represent an accession transaction. AT supports entry and maintenance of all data and events related to an accession transaction, including events, notes, links to external documents, and user-defined data items. Accessions can be linked to names, subjects, locations, and resources.

**Resource** record represents archival resource. AT supports entry and maintenance of all data and events related to an archival resource, including its content and context. In AT, an archival resource is described using two types of records, resource records and component resource records. A resource record can represent one of two types of resources: aggregations (collections or record groups, for example) or independent items. In the case of the aggregate type of resource record, the resource record may also be linked to resource component records to form multi-level descriptions. Although component records may represent a series, subseries, file, item, or other subdivision, the input template for each component level contains the same data elements. Also, each resource or resource component record may have one/more instances—audio, book, map, digital copy (digital object), etc. Resource and resource component records can be linked to accessions, locations, names, subjects, and digital objects.

**Digital Object** record represents digital archival resource (digital content file). Just like physical archival resources, digital resources could be simple (a single text, image, or audio file) or complex (collection of text, audio/video clips, and images in one or more digital files). Complex digital resource require structural metadata so that the components can be searched effectively and presented in the right sequence to the end user. AT supports entry and maintenance of digital resource metadata (data related to digital resource, including notes). A digital object may use just single digital object record. A complex digital object can be represented by a digital object record and one or more digital object component (child) records. Digital object component records have the same input template and may contain next level of digital object component records. AT can handle unbound digital object where a Dublin Core metadata record references the related digital file. It can also handle bound digital object where a METS digital wrapper is used to bind and explain relationship among digital files related to the digital object. Digital object and digital object component records can be linked to names and subjects. Each digital object or digital object component record can be linked to at the most one resource or resource component.

Archive management involves recording and tacking relationship between archive material and various persons, families, and business entities that may be source, creator, or subject of the material. **Name** record represents a person, corporate body, or family. AT supports entry and maintenance of name detail, non-preferred forms of

the name, and contact information. Names are linked to accession, resource, and digital object using Names & Subjects tab available in accession, resource, and digital object detail display.

*Subject* records represent topical terms associated with an accession, resource, or digital object. AT supports entry and maintenance of basic subject data for five subject types—uniform titles, topical terms, geographical names, genre/form terms, occupations, and functions. Subjects are linked to accession, resource, and digital object using Names & Subjects tab available in accession, resource, and digital object detail display.

### Working with locations

Location records contain data on permanent physical location of the archival material specified in accession and resource records. Location data may be an actual physical location of repository space (building, floor, room, area within a room, and specific stack coordinates), a barcode used to identify a unique location, or a classification number used to represent a location. Location records can be created/maintained using the Locations option in the Tools menu. One or more locations can be assigned to an accession record from within the accession detail display. When adding location to a specific accession record, a note or container information can be entered for each location. Locations can be specified also at the resource level by clicking Manage Locations button at the bottom of the resource detail display. This will present Assign Location window with a list of all containers specified for instances associated with the resource and a list of all available locations. Locations can be linked with one/more containers in this window.

### Merging and Transferring records

AT supports Merge features for name, subject, and resource records and for Lookup Lists to facilitate data management and cleanup. Merging two records/items results in deletion of the redundant or undesirable record/item with transfer of all data and links to the remaining record/item. This is specifically helpful when cleaning up data in cases where data import has created unnecessary records or when terms are used inconsistently. Merge function can be accessed by selecting two/more items from the list display and clicking Merge button in the command bar.

AT also offers Transfer feature for resource records. This feature can be accessed by clicking the Transfer button at the bottom of a resource detail display. Clicking Transfer will display a list of available resource record. The user can select one/more resource records from the list. Transfer operation will move all resource component records from the selected resource records into the open resource record and delete resource component records from the selected resource records. Transfer feature is used for cleanup of resource records.

### Data entry and validation—default values, rapid data entry, and lookup lists

If the repository uses fixed content for a particular field/note, a default value can be specified for the field/note to eliminate need for repetitive manual data entry. When default values are specified, related fields/notes are automatically populated with default values when a record is created. Default values are repository-specific, and are stored as part of the repository record. Default values for record fields and notes are specified through the Default Values tab of the related Repository record. Repository records are accessed through Setup menu.

Rapid data entry feature of AT allows efficient entry of resource component records and is useful in case of repetitive data entry. For example, rapid data entry can be used for entry of folder list, where multiple components of the same level are entered one after another. Rapid Data Entry screens can be created and

configured through Setup menu. A Rapid Data Entry screen will contain selected fields (from the pool of available resource record fields) in desired order. Fields can be declared “sticky” to help with repeat data entry. When entering resource or resource component record, appropriate Rapid Data Entry Screen can be selected from the drop-down list at the bottom of a resource component detail display to facilitate entry of subsequent resource or resource component records.

Lookup lists provide a collection of predefined values that can be selected during data entry to populate a field. AT uses several pre-defined lookup lists, most (but not all) of which can be modified to suite installation needs. Looks up lists are deployed on various data entry screens and also used for validating imported data. Lookup Lists option in the Setup menu can be used to access and edit look-up lists.

AT uses numerous rules to validate content in imported, entered, or changed records. When record content fails validation, the related record is rejected and the error is logged (in case of record import) or displayed (in case of interactive data entry/update).

### Customizing AT user interface

AT user interface can be configured using Configure Application option from the Setup menu. Configuration will allow the authorized user to change field labels displayed on data entry screens, modify columns appearing on list screens, customize search interface, and edit mouse rollover tips.

Fonts used in AT interface screens can be customized using Configure Fonts option from the Setup menu. Name, style, and size of font can be specified through this option.

### Notes

In AT, descriptive notes can be specified for repository and accession records. AT also supports note entries for pre-defined standardized note types for resources and digital object records. Labels for pre-defined note types can be maintained using Notes Etc. option in the Setup menu. Notes for individual resource record can be accessed, entered, and modified using Notes and Deaccessions tab in resource detail display. Notes for individual digital object record can be accessed, entered, and modified using Notes tab in resource detail display.

### Reports

AT supports detail reporting based on information stored in various records. Reports may represent list screen display or data from one or more records.

When working with the List Screen Display (showing records of one of the five major record classes (Names, Subjects, Accessions, Resources, and Digital Objects) currently selected from the navigation zone), report function can be accessed through the Reports button on the command bar. Report function can also be accessed from the record detail display of any record class (Names, Subjects, Accessions, Resources, Digital Objects, Locations, and Assessments) by clicking Reports button at the bottom of the record detail display. Clicking Reports button will display a report window with a drop-down list of available reports and a drop-down list of available report formats. “Print Screen” report simply prints content of the current screen. Other reports generally represent selected data from the selected record(s) and, possibly, data from other related records. Reports requested from the from the List Screen Display are based on records selected from the record list.



Reports requested from the record detail display are based on the record in the current detail display. Available output formats are: printer, PDF, HTML, RTF, Excel, and CSV.

A snapshot report of repository holdings can be generated by selecting Generate Repository Profile from the Reports menu.

AT uses JasperReport reporting engine to generate its reports. Available reports can be customized by changing associated JasperReport definition files (JRXML).

In addition to standard available reports, AT also supports custom reports. Custom reports created using tools such as JasperReports (open source reporting engine), iReports (free report designer for JasperReports), or generated through custom programs that use AT application programming interface (API) can be loaded (integrated) into AT and made available as a report option. Unfortunately, files related to report customizations and custom reports are stored locally and available only to AT client running on that PC. Other users will have to copy related files on their PCs to use report customizations and custom reports.

### Assessment

Assessment records can be used to store information about archive material's condition, housing, physical arrangement, intellectual access, and research value. Clicking the Assessment Records button in the Tools menu will display the assessment browse screen that shows a list of existing assessment records. Existing assessment records can be searched and selected, new records can be added, and assessment reports can be generated from this screen. Clicking an individual assessment record entry will display assessment record detail. An Assessment record can be linked to multiple accessions, resources, or digital objects, but not to resource component records or analog resource instances. Assessment record requires a link to at least one accession, resource, or digital object.

### **Archivist's Toolkit Future**

ArchOn is another open source archival data management system. ArchOn project is based at University of Illinois. More information is about the project and the product is available at the project website at <http://www.archon.org/index.php>. ArchOn is a web-based application coded in PHP. ArchOn data can be located on MySQL or SQL Server database.

With a recent grant from the Andrew W. Mellon Foundation, the University of California, San Diego; New York University; and the University of Illinois at Urbana-Champaign Libraries are now teaming up to develop a next-generation archival management tool, based on the combined capabilities of Archivists' Toolkit and Archon. Although all future development for AT has ended, we may yet have a few maintenance releases. This means that AT will be eventually replaced with a new archive management product. The new product, expected in early 2012, will provide convenient migration path for existing AT implementations. More information about the project is available at the project website at <http://dli.grainger.uiuc.edu/archivesspace/default.htm>.