This paper looks at two tools that libraries can use to better reflect the service provided during reference transactions. The first tool is a six point scale called the READScale. The READScale allows librarians to assign a point value to reference transactions. The second tool is a project management software developed by Atlassian called JIRA, that libraries can customize to use for reference transactions. This easily customized software allows librarians to capture and store more information about reference transactions and can be used in conjunction with the READScale or independently. Information that can be collected include requestor, department or office of requestor, time to complete transaction, type of transaction, and any other information the library deems valuable. Having the data from these two tools provides the library with quantitative data they can use to demonstrate their value to decision makers.

Headings:

Library Reference Services

Special Libraries

Computer Software
JIRA AND READSCALE: TWO TOOLS LIBRARIES CAN USE TO ENHANCE REPORTING OF REFERENCE TRANSACTIONS

by
Jason B Reed

A Master’s paper submitted to the faculty of the School of Information and Library Science of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Library Science.

Chapel Hill, North Carolina
April 2013

Approved by

______________________
Rebecca Vargha


**Literature Review**

Individuals associated with libraries have long held the belief that libraries are inherently good, and it is the passion to uphold their belief that drives librarians to do the work that they do. However, the strong feelings librarians have about the service they provide is also their primary weakness when asked to justify or evaluate the impact of that service. (Rudd, 2000) The financial and ensuing budgetary landscape affecting many libraries has drawn attention to the need for evaluation, tracking and reporting of services provided by libraries. It is no longer acceptable for organizations or departments to ask for money based on unscientific evidence about the nature of their work, rather decision makers are allocating resources based on proven evidence that service provided actually benefits the users. (Rudd, 2000) Efforts to ensure staff efficiency and streamline services during tight budgetary times are important, and libraries need evidence to make the best decisions. (Feldmann, March 2009) The method of collecting evidence is as important as the evidence itself evidence when justifying the library and refining its services. (Davies, 2002) Davies argues that every organization needs three kinds of metrics, success mobilizing resources, staff’s effectiveness performing their job, and progress towards fulfilling the mission. Having hard evidence of the library’s contribution to overall mission is important during times when libraries are being asked to provide more service with fewer resources. (Davies, 2002) Reference statistics are an important tool for the
administration of a reference organization. (Smith, 2006) Effective tracking software can provide the medium necessary to collect, track, and evaluate Davies 3 metrics. (Davies, 2002) Providing the evidence base that Davies suggests can support management’s decisions both at the library level and at the organizational level. This evidence base should have the potential to support activities including policies, strategies, tactics, processes, and advocacy. (Davies, 2002) The new reality is that any organization or department receiving money is competing with others for fewer resources and libraries cannot rely on the argument that they are doing good work anymore and they must make quantitative arguments for their existence. Librarians know that their work helps people; they just need to find ways to demonstrate the outcome. (Rudd, 2000) While proving their worth is not new to special libraries, finding ways to complete reporting or self-assessment activities take time and must be a significant priority in addition to a myriad of other responsibilities.

Special Librarians are responsible for a variety of tasks in their jobs, including teaching classes on literature searching, database use, assisting with publication, and reviewing Internet sites. (Collinge, 2006) This range of activities makes special libraries an interesting position, but also raises the need for a means to track a variety of different types of information for reporting purposes. (Collinge, 2006; Davies, 2002) One of the first tasks that a new library or a new librarian should do is collect supportive evidence, and just like promotion, this is an activity that should be an ongoing priority for special libraries. The evidence can include statistics (number of literature searches conducted, interlibrary loans
received and provided, or books cataloged) and testimonials from satisfied library users. (Collinge, 2006) In addition to statistics, libraries should also focus on collecting “soft data” or information from library users that include testimonials or survey responses. (Davies, 2002) While this type of data will not be easily tracked in most software it can be combined with hard data to provide a better overall picture of activities in the library. However, using information from software programs can allow librarians to discover who their most frequent users are.

At the same time there should be a reason for tracking and collecting statistics and that reason should not be that the statistics have always been tracked, the data should be used for something tangible. (Davies, 2002) Tracking software can help with collecting and reporting the statistics and can help identify users to approach about providing more detailed feedback. While demonstrating value is important for all special libraries, it is vital for contract librarians because they must constantly prove their worth while fighting for the survival of the library. A key component of demonstrating the value is a detailed report describing the work completed by the library during a specified time period and including good documentation. (Collinge, 2006) This is an area where having good tracking software can come in handy. If the librarian/s are diligent about recording library transactions as they occur, the librarian will not have to go back and remember the details of service provided and will be able to produce charts and graphs of services rendered from within the software package.

Electronic data, while theoretically easier to collect, potentially has issues
in terms of interpreting what the information is reflecting. Overall useful information in any format should include inputs, outputs, outcomes, and impacts. (Davies, 2002) Inputs include resources used to provide service such as collections, staff, and equipment. Outputs are representative of aspects resulting in the services provided, including articles supplied, queries answered, or training sessions provided. Outcomes and impacts are harder to quantify and include soft data. (Davies, 2002)

Librarians need to overcome their historical hesitancy or reluctance to collect information or report the data they do collect. It has been established that data is an invaluable tool that can help all levels of library employees and it is vital that libraries make a concerted effort to collect the data and use the data. (Smith, 2006) One way to accomplish this is to obtain staff input when designing the input form, sharing with employees the literature that documents the positives of collecting reference data, and to be open and honest about the uses of the collected data. (Smith, 2006) Librarians have also expressed a concern that the time required to collect and analyze data is not worth the results of the efforts, in part because of the lack of standardization with reference transactions. (Smith, 2006) Data collected by librarians and input into reference software can provide valuable information about tracking trends in reference, monitoring new library services, and providing the librarians with information for analyzing their own professional activity. (Garrison, 2010) Data collected in the tracking software can serve a variety of different user groups. The information collected in the program can be used by staff or librarians for status reports, it can be used for knowledge
management, it can be used by supervisors or library directors to evaluate services being provided by the library or for reporting to their supervisor, and finally after the information is processed it can be used by decision makers to evaluate the service provided by the library. (Davies, 2002)

Part of providing service is also being able to demonstrate to management, paymasters, that resources are being used wisely. Additionally evidence is needed to evaluate current service offerings and to develop new services. (Davies, 2002) Convincing librarians accustomed to a more traditional model of recording statistics can be difficult, but there are cases where librarians became more diligent about uploading statistics after seeing how much value the new program adds, and what they can do with the new information. (Garrison, 2010) A review of reference transaction statistics can also help identify areas of the library’s collection that are lacking. (Smith, 2006)

The information collected and stored in the tracking software can be used to evaluate performance of library staff, including paraprofessionals and professional staff. (Meserve, Belanger, Bowlby, & Rosenblum, 2009) Reference statistics information can also be used by supervisors to determine staffing levels or hours of operation, in addition to looking at which services and mediums the library should be offering. (Garrison, 2010; Smith, 2006) However, there is some concern regarding the use of a self-reporting system as a method for evaluation, and this is an issue each library will have to address and determine what approach works best in their setting. (Smith, 2006) In addition research has shown that reference staff working in a liaison model are also interested in the
potential for reference statistics to help them with their own service, in addition to seeing what their colleagues are doing. (Garrison, 2010) The statistics, once collected and tabulated, can help librarians evaluate their own services and make decisions regarding what works and doesn’t work. They will have information that they can use in their reviews with their own supervisors, information that might help achieve increased funding or continuation of a new service. (Garrison, 2010) They can also look at what initiatives their colleagues are successfully conducting,

Marketing is a vital part of new library services and a continuing requirement; Collinge states that Clinical Librarians must grab the attention of staff by making it clear how their time can be saved and by continuously giving them examples of how they can benefit from the library’s services. (Collinge, 2006) While Collinge is speaking specifically about Clinical Librarians, his point about how to market a library’s services are applicable to any library setting, and especially within a special library. A good tracking system can help the librarian to create reports that can show potential users what services are available and how much time the library can save with the value added service. Libraries should also focus their initial efforts building relationships with supportive members of the community or company before trying to convert skeptics. (Collinge, 2006) Special Librarians can use reference tracking software to determine their most active users and enlist these users to help spread the word about the library’s effectiveness as well as target these users for new library offerings. Evaluation of the reference data can help librarians determine
departments or disciplines of heavy and light use and adjust their marketing plans accordingly. (Feldmann, March 2009; Zweizig, 1984)

An important task that librarians perform is knowledge management. Knowledge management allows librarians to note how tasks were completed and what resources and/or new tools were used or discovered during completion of the task. This allows librarians to refer back to this knowledge in the event of a similar request and also allows the passing of institutional knowledge if the original librarian is no longer with the library. The use of a digital format for tracking reference statistics can make it easier for a library to absorb the loss of an individual librarian, because they will have a record of the work that person was doing, provided they were diligent about uploading their interactions. (Garrison, 2010) The reference transaction information stored in a software program can be an invaluable tool for training new employees, because they will have examples of previous transactions in their subject area. (Feldmann, March 2009; Garrison, 2010) Lastly, a well-organized and easy to search knowledge management database can help non-reference personnel handle reference questions. (Garrison, 2010) This is true for academic libraries that rely on non-professionals to work at the reference desk, but also in special libraries where the reference librarian might not be available, and another member of the library staff is assisting a patron.

The ability to report findings to the user, generate reports for funding director, and updating the knowledge database can simplify matters for special librarians and save them time; time which is better spent assisting library users
and investigating new services or technology. The collection and interpretation of library transactions can lead to increased quality, improved management, and enhanced professional satisfaction. (Davies, 2002) Having valid quantitative and qualitative data that can be referred to and easily exported into graphs and spreadsheets allows libraries to defend their budget and even make an argument for increased funding. The days when libraries, and other cultural institutions, received funding just because they were inherently good has disappeared and libraries must learn to adapt to a results driven environment if they want to succeed. (Davies, 2002) While librarians know that they have an important impact on their users’ research, it vital to find ways to prove this impact to the decision makers. (Rudd, 2000) Most of this review has focused on reference transaction tracking, but the same programs can be used or modified to report statistics from other areas, including interlibrary loan and cataloging. (Zweizig, 1984)

The key is collecting the data and presenting it in a way that decision makers can understand. Some librarians also feel that raw data cannot properly reflect the true value of the service provided, because all reference transactions were not created equal. (Smith, 2006) This is a valid concern and new metrics are being developed that are capable of reflecting the degree of effort required to complete a reference request. One of those metrics is the READ, reference effort assessment data, Scale developed by Carnegie Mellon University.

**READ Scale**

There is a belief amongst reference librarians that just because the
amount of reference transactions are declining does not mean that the amount of work being done by reference librarians is decreasing. The READ Scale was developed in response to a 2002 survey conducted by the Association of Research Libraries (ARL) which discovered there were no standard or current best practices for reference services assessment and rather there it was “revealed a situation in flux”. The scale was developed because the ARL survey found that many academic institutions were not completely satisfied with the usefulness of the reference statistics they were gathering. The READ Scale goes beyond just recording reference staff personal efforts and can assist the library with staffing, training/continuing education, creating renewed personal and professional interest, outreach, and research/statistics. The READ Scale was developed because traditional reference tracking methods, hash marks on a sheet of paper, failed to accurately or completely capture the full reference transaction. (Gerlich & Berard, 2010) The READ Scale is designed to qualitatively reflect the true effort being produced by reference librarians. (Gerlich & Berard, 2007) The READ Scale allows for librarians to perform the outcome based assessments that are currently favored by administrators. The use of this metric can help reference librarians and special libraries better utilize reference statistics for outreach, self-evaluation, and service evaluation (Gerlich & Berard, 2007) The READ Scale could be even more useful for special libraries because anecdotal evidence shows that the tougher reference questions are handled by liaison librarians, and many special librarians are subject specialist due to the work the type of work conducted in their organizations. (Gerlich & Berard, 2010)
The READ Scale is a six point scale tool\textsuperscript{2} used to evaluate and record reference transactions. The scale places an emphasis on recording the effort, skills, knowledge, teaching moment, techniques, and tools utilized by the librarian when handling reference transactions. (Gerlich & Berard, 2007) The READ Scale ranges easy tasks, called training, to complex transactions, called knowledge/expertise. Training questions include transactions like directional questions and knowledge/expertise questions include highly specialized transactions including aspects from the previous five levels of the scale and could include multiple solutions and consultations. To receive a score on the scale, the transaction would have had to include the steps below it. The creators of the READ Scale also suggest that any transaction that receives a score of 4 or higher could be shared with all reference staff as a method of continuous learning. The use of the READ Scale could also lead to higher job satisfaction because it provides acknowledgement and recognition to librarians for helping users and assisting with difficult queries, as opposed to just tick marks on a spreadsheet. Keeping more detailed records of reference transactions can assist libraries with outreach. Analysis of the transactions can reveal areas where highly rated transactions are taking place and conversely it can show areas where the library is not receiving more in depth requests. This information can help the library identify key users and increase marketing in areas of low use, either quantitative or qualitatively. Finally all of the data combined can provide the library concrete evidence of their impact within the organization in terms of service provided and time saved. The READ Scale is available for any interested
library to use and will be discussed in this paper as a means of demonstrating that tracking software and reference metrics can be used in conjunction with each other.

To test the viability of the READ Scale a national study was conducted with 14 libraries of varying size, including both public and private academic libraries. Overall the results of the study found that 80% or more of participants would either recommend the scale to other libraries and 80% would adopt the scale at their library. When asked how difficult the READ Scale was to use 51% responded Not Difficult and 37% responded Somewhat Difficult. On the question of how easy the READ Scale was to apply, 64% of respondents said it was very easy or easy to use. When asked how much value was added to the statistics by the READ Scale 52% responded high value or extreme high value, with an additional 35% responding moderate value added. When asked about the difficulty choosing which number to assign a reference transaction, the hardest decision was between 3-4, 29%, followed by 2-3 and 4-5, both closed to 20%. When asked what could be improved about the READ Scale, respondents suggested an online version, an accounting for the time spent on the question, and a way to track the skill level of the person who handled the reference transaction. All three of these concerns could be solved by combining the READScale with JIRA. JIRA operates off a server so all of the statistics would be available online, each ticket or reference transaction created can be assigned to a user, which would create a record of who handled the transaction and JIRA has the option to log the amount of time that was spent on a reference
transaction. (Gerlich & Berard, 2010) The JIRA software that will be reviewed in this paper is capable of allowing libraries to use the READ Scale for their reference transactions in addition to serving as a knowledge management database, and a useful reporting tool for libraries of any type and size.

**JIRA**

There are several benefits associated with using a software program compared to collecting statistics on paper. One benefit of tracking statistics with software is that it allows for deeper analysis of the data. (Garrison, 2010) Using a software system can also be beneficial to libraries as the amount of data they collect increases or becomes more complex, resulting in paper forms that are unwieldy and take too much staff time to complete or to review later. (Garrison, 2010) Another benefit is that the information collected can be accessed by users any time. (Garrison, 2010) If libraries chose the OnDemand option for JIRA, not only would all users be able to access the information, but they would be able to do so from computer with access to the Internet using their username and password. The use of software for tracking library statistics can also increase the staff flexibility, by allowing the user to input as much or as little information as is pertinent. Reference data in particular can involve complex transactions and librarians can spend time combing through data to find the information that they need, time that could be better spent helping their users. (Feldmann, March 2009; Zweizig, 1984) JIRA offers several tools and charts to help sift through the data and speed up the analysis. A survey of libraries showed that a majority of libraries were collecting data about the date, time, medium, type of transaction,
department or discipline area, general comments, librarian name, if the request was the result of a referral, location of reference transactions, and the reference question. (Feldmann, March 2009; Novotny, 2002; Smith, 2006) JIRA is customizable and capable of recording these data points and any others a library is interested in tracking.

JIRA is a project management software system developed by Atlassian. Atlassian describes JIRA as program for dealing with issues. Atlassian defines issues as everything an organization has to deal with, and that JIRA can easily capture, organize, prioritize, and take action on what’s important, while staying up-to-date on everything going on. At its basic level JIRA is more akin to IT tracking software than library software, but with some creativity in the naming conventions and courtesy of its customization options JIRA can be adapted to fit a library’s requirements. JIRA comes in two formats, one involves downloading the software and hosting it on the organizations servers and the other is a cloud based (OnDemand) option where everything is housed on Atlassian’s servers. The benefits for the OnDemand version are that it is hosted in the cloud, has instant setup, includes a month to month pricing option, and it includes bundled add-ons. The download option pros are that the program is hosted on the library’s hardware, it has extreme customization, it can be a one-time purchase, the library has complete application control, and add-ons are available for purchase from the Atlassian marketplace. JIRA is ideal for smaller libraries because of its low cost for small organizations. To download and host JIRA on local servers, Atlassian offers a one-time payment of $10 for up to 10 users, and
all the proceeds from this option are donated to Room to Read. The price increases as the number of users increases and if the library wants additional support the cost is more expensive\textsuperscript{3}. The more expensive option, Atlassian Enterprise for JIRA, includes 24x7 support online or over the phone, JIRA training courses, and access to best-practice webinars. The OnDemand pricing starts at $10 a month for 10 users\textsuperscript{4}. Included with this price are 24x7 support, two months free for annual subscriptions, software updates, and all associated service costs, including bandwidth and hosting costs. Atlassian defines users are defined as any person who can log into JIRA, which for libraries would any member of the library staff who handle library transactions that the library want to track and possibly a member of IT if the library needs additional technical expertise.

JIRA is a simple system to use, while remaining customizable enough to suit the needs of different organizational settings. The main function of JIRA is to track issues which come pre-populated by the system, but can be customized by the library. JIRA can be used as a knowledge management database where libraries store past transactions where they will remain accessible in the event that a similar query comes up again. JIRA can help with marketing because it can identify the individuals and departments that make the most use of the library and also what methods library patrons are using for their requests. The use of JIRA or any system will require commitment by the library staff to input issues as they occur and to use the agreed upon controlled vocabulary for classifying issues. As powerful as JIRA is, the system is can only report the information that
is included. Timely input of issues can help prevent reporter bias and ensure a more accurate account of the request and the response. One possible way to accomplish this would be for the library director to assure library staff that they data collected from JIRA will be used to assess the service provided by the library and not used to judge individuals. With similar systems there is some evidence of individuals gaming the system to improve their performance, and this is something that managers should be aware of. (Davies, 2002) Atlassian allows for a free trial period of JIRA which can be used to by libraries not only to test the software to see if it will work for the library’s purposes, but this time period could also be used to show library staff how beneficial the program can be and how it can help them provide better service. JIRA does not have to be used just for reference transactions, it can also be used to track work conducted by technical services, including interlibrary loans, cataloging, serials, or any other work completed by the library. JIRA has the option to create different projects which could be used to separate issues created and completed by different sections of the library, public services, technical services, special collections, or other, or by different departments, interlibrary loan, reference, or cataloging. The next section of this paper will cover how JIRA works and how those features can assist the library with tracking, saving, and reporting their work. The personal dashboard, is the screen each user sees upon logging into JIRA and this screen can be modified to display issues assigned to the user (helpful for all users), recent activity (helpful for supervisors and managers), and relevant statistics (helpful to anyone creating reports). JIRA has a combination of pre-existing and
custom filters that allow users to keep track of the issues that matter the most to them. To create a filter, users can save any issue search and even share custom filters with other users.

Initial JIRA setup contains four or five steps depending on which configuration of JIRA the library is using. The initial trial period of JIRA is free and does not require a credit card on account. Once the software has been downloaded and the installation has begun, the software will prompt for a software key, this is also free and only requires creating an account with Atlassian. The entire process of downloading and installing the system requires an Internet connection and takes less than 20 minutes. The first step is to create a project, which for the library can be used for a department or it can refer to a long term project like reaccreditation or bidding for a contract. Issues are how data is entered into JIRA and make up most of the work conducted in JIRA. Once the project/s are created users can start adding issues to be housed within the project. The administrator can create users from the admin dashboard, by selecting the users tab. JIRA contains two mode options, the public option allows any user to sign up and create their account and the private options limits the ability to create new user accounts to the account administrator. There are two options for creating new users, the administrator can enter the users manually or they can invite library personnel through email. There are three default user types, which can be customized by the administrator. The user types are jira-user, these users can create and edit issues, jira-developers can create, edit, and log work (time spent) against issues, and jira-administrators,
who have full access to Administration. During the testing phase users had to be
given jira-developer status in order to be assigned a task, by a different user. At
anytime the administrator can view all registered users and edit their user type. Configuring permissions are project based, so some users can have more control
with some projects and less for others, and the permissions are project related
not system related allowing for differing roles of responsibility. At any point the
administrator can edit which groups a user is on and what type of user they are.
Lastly if the library decides to take advantage of any add-ons these can be set up as they are acquired.

For organizations using JIRA for project management, the default settings
might be sufficient, however libraries will want to take some time and alter the
terminology to correspond to terms being used in the library. To edit the issue
form, the administrator needs to navigate to the admin page. Using the issues
type the administrator can begin by creating different issue types to reflect the
types of library activity that need to be tracked. Common issue types for libraries
include literature searches, quick reference, bibliographic searches, and
instruction sessions. Next, the administrator can edit the fields that appear on
the issue screen, by selecting the Issues tab and picking fields. Custom fields
can be created on the first screen, by selecting custom fields. To edit which
fields are displayed on which screens, which fields are required, or to edit the
fields; the administrator can navigate to the tab on the left side, field
configurations, and select default field configuration. For the different fields,
default values can be assigned. Selecting options that occur most often can
make the process of creating tickets for reference transactions easier for the librarians.

Issues can be created by any user with a registered account and once created they can be edited and reassigned to other users. This is useful for instances where libraries use a tiered approach and the person receiving the request can record the patron’s request and electronically send the request to the best person to assist the requestor. Users have the option of choosing an assignee, listing who the requestor was (reported by), what division/lab the requestor works in, what type of request it is (issue type), description, and providing a title for the issue (summary). Issue terms can be configured to use dropdown boxes which allows for the use of a controlled vocabulary or for uploading common answers. To obtain the benefit from the software application the library should ensure that all issue types are represented and that all users understand which types to select for which issues. The summary field can be used as a title field or quick description of the task, depending on the needs of the library. Division/lab is another field that is customizable and can be updated to include the different sections of the organization. Due date can be selected using the calendar icon and allows for the setting of a deadline that can be requestor determined or library determined, in the case of turnarounds for ILLs. Assignee is the person who will be working on the issue and this does not have to be the same person who creates the issue. Reported by is the requestor and description is where the details of the issue can be noted. The description field is the best place to record the requestor’s question. Lastly, original estimate is
how long the person creating the issue predicts the issue will take, this is not a required field and each library can decide whether or not this is a useful field for their purposes.

Once issues have been created, they can be updated by the assignee with comments about the request, useful for knowledge management, and the assignee can update the time they have spent working on the issue. There are two ways to track the time spent on an issue. One method is to open the issue and select start progress which keeps a real time track of the time spent with the issue. The second option is to manually log the time spent by selecting more actions and listing the time spent. On the log work screen users can fill in the amount of time they spent working on the issue and the date started, this will default to the current date but the user can use the calendar icon to manually choose an earlier date as necessary, and the user can add notes about the work conducted during the time spent working on the issue. The second option is more practical for libraries because a general idea of the time spent is acceptable and this option does not require staff to ensure that they open an issue every time they work on a request. This information can be valuable for justifying the effort spent by the library or in cases where the library charges individual departments for services rendered. The comment logs are particularly important if libraries plan to use JIRA for knowledge management because the comment section is where users can put notes about the search strategies used or new resources discovered and eventually what the result was.

JIRA users can follow up on specific tickets by opening the issue, where
all the details and comments can be viewed\textsuperscript{14}. This allows managers to follow up on work completed or for other users to learn from the work completed on earlier issues. This is useful for evaluating the employee or if a similar issue arises later. Accurate records of issues completed and the time spent on it, would allow the library to demonstrate to the decision makers how much service they provide to the organization and more importantly how much time they save other employees, freeing them to spend their time performing critical functions. The activity stream located on the user dashboard displays tickets and updates as they occur, allowing the department head or other supervisor to monitor the activity of the library.

JIRA has an output function that allows users to create a pie chart of tickets created. To create the pie chart, the user navigates to views and selects charts\textsuperscript{15}. The pie chart has options for looking at the user who created the ticket, the request type, requestor, division, divison/lab, and type of activity. These options provide opportunities to evaluate who or discover the individuals who make the most use of library resources, which departments the library provides the most service to, and what activities they spend the majority of their time performing. This knowledge can assist librarians in their discussion with management over funding. There is also an option to sort by requested by, for instance email, in person, chat, or telephone, which allows librarians to assess which method of communication their users prefer. The charting feature does not allow for a specification of date ranges, but instead this feature creates a pie chart of all the tickets. In order to create a chart for a customized time period, the
previous month for instance, the user can perform a custom search for all tickets
created\textsuperscript{16}, worked on, or closed during the last month. Once the search is done,
the user can create a pie chart and JIRA will only show data from the custom
search, instead of the entire catalog of tickets. The custom search can also allow
the user to create a custom search for tickets created by a specified user. This
search can be useful for a supervisor conducting an evaluation of a new
employee or for yearly evaluation. This function can also be useful for
developing or refining a job description for an existing employee or for a new job
listing. If the user wants to change the output time periods they can click on the
gear symbol and select edit. This option allows the user to change the period
being shown on the pie chart. Options include daily, weekly, monthly, or even
yearly. The longer time frames can be useful for staff evaluations or for
representing the work completed by the library over the past year.

In addition to creating pie charts, search results from JIRA can be
exported into Microsoft Word or Microsoft Excel formats, useful for submitting
reports or creating print backups. The Microsoft Excel spreadsheet of issues
includes the option to see just the list columns or all columns and comes in an
easy to read format. Any charts created during this stage can be save to the
dashboard where they are easily retrieved, the most useful tool for this feature
would be saving a filter of open issues which can help managers track how much
work is piling up.

To derive the most benefit out of this software, a library must have a good
Internet connection. At one point during testing the wireless network being used
was experiencing slow bandwidth, causing screens to take longer to load. The library will also need one person to be an administrator and having someone who is familiar with technology and software systems is helpful, even if the library decides to use the cloud based system. This person does not have to work in the library, but good communication between the library and the administrator is important, because the administrator is the person in charge of making changes and updates to the forms being used by the library. Finally, JIRA is only a tool and it will only be useful if the librarians using the system are committed to its use.
Notes

1 Information in this section, that is not cited, comes via the READ Scale website; readscale.org

2 See Appendix 1 to view a more detailed picture and description of the READ Scale.

3 See Appendix 2 for more details on pricing for JIRA download

4 See Appendix 3 for more information on OnDemand pricing options.

5 See Appendices 4-6 for screen captures of the setup process.

6 See Appendix 7

7 See Appendix 8 and 9

8 See Appendix 10

9 See Appendix 11

10 See Appendix 12

11 See Appendix 13 and 14

12 See Appendix 15 and 16 for example Issue form

13 See Appendix 17 and 18

14 See Appendix 19

15 See Appendix 20 and 21

16 Appendix 22: Issue search
References


http://search.proquest.com.libproxy.lib.unc.edu/docview/57542258?accountid=14244


http://search.proquest.com.libproxy.lib.unc.edu/docview/758113901?accountid=14244


Appendices

Appendix 1: The READ Scale

TR + SK + ED + TE + EF + KE

Or

1 (+1) = 2 (+1) = 3 (+1) = 4 (+1) = 5 (+1) = 6

Or

1 (+1) = 2 (+1) = 3 (+1) = 4 (+1) = 5 (+1) = 6

One naturally completes parts or all of the formula in progression on the Scale. You cannot get to a 3 without having done steps 1 & 2 on the Scale, and so forth.

Training + Skill + Education + Teaching + Effort + Knowledge / Expertise

1) **Training** = Learned through initial contact, no specialized education.

2) **Skill** = Learned through experience, additional training, no specialized education, customer service considered.

3) **Education** = Specialized higher education needed or equivalent years of experience, customer service; problem solving.

4) **Teaching** = Interaction involves teaching others, either patrons or staff; problem solving; time a factor; multiple resources used.

5) **Effort** = Exceeds routine problem solving, consultation with others, referrals; time a factor; multiple resources used; initiative.

6) **Knowledge / Expertise** = Highly specialized; all other factors come into play; multiple consultations, resources or primary materials used; time a factor; initiative; multiple solutions considered.
Appendix 2: JIRA Pricing for download options

**Starter License**
A full-featured license, perfect for small teams.

> 10 users for $10 <

All Starter proceeds are donated to Room to Read, a charity that helps improve education in the developing world. Learn More.

<table>
<thead>
<tr>
<th>Users</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10 users</td>
<td>$10</td>
</tr>
<tr>
<td>11-25 users</td>
<td>$1,200</td>
</tr>
<tr>
<td>26-50 users</td>
<td>$2,200</td>
</tr>
<tr>
<td>51-100 users</td>
<td>$4,000</td>
</tr>
<tr>
<td>101-500 users</td>
<td>$8,000</td>
</tr>
</tbody>
</table>

**Atlassian Enterprise for JIRA**
Atlassian Enterprise provides additional services and support which focus on ensuring success as your JIRA deployment grows.

**Atlassian Enterprise includes:**
- 24x7 online and phone support
- JIRA training through Atlassian University
- JIRA administrator training course
- Exclusive membership to Atlassian Enterprise Community

<table>
<thead>
<tr>
<th>Users</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-500 users</td>
<td>$12,000</td>
</tr>
<tr>
<td>501-2,000 users</td>
<td>$16,000</td>
</tr>
<tr>
<td>2,001-10,000 users</td>
<td>$20,000</td>
</tr>
<tr>
<td>10,000+ users</td>
<td>$24,000</td>
</tr>
</tbody>
</table>

You're going big! Get in touch with us so we can make sure you nail this landing and awe your coworkers – contact us.
Appendix 3: JIRA OnDemand Pricing

<table>
<thead>
<tr>
<th>User Range</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>11–15 users</td>
<td>$50/mo</td>
</tr>
<tr>
<td>16–25 users</td>
<td>$100/mo</td>
</tr>
<tr>
<td>26–50 users</td>
<td>$200/mo</td>
</tr>
<tr>
<td>51–100 users</td>
<td>$300/mo</td>
</tr>
<tr>
<td>101–500 users</td>
<td>$500/mo</td>
</tr>
<tr>
<td>501–2,000 users</td>
<td>$1,000/mo</td>
</tr>
</tbody>
</table>
Appendix 4 JIRA Setup: Step 1

![JIRA Setup Step 1](image_url)

**Step 1 of 4: Basic Settings**

**Server Language**: English (United States)

Choose the server language to use for this JIRA installation. Other languages can be installed later from Atlassian Translations once this setup is complete.

**Database Connection**

- **Internal**: Choose the internal database for evaluation or demonstration purposes only as we strongly recommend against using it in a production environment. Data can be migrated to a supported external database after evaluation. Please consult our documentation for more information.

- **External**: Choose the external database if you prefer to use your own database and require a production ready solution. We support a number of popular databases. Please consult our documentation for more information.

[Next]
Appendix 5 JIRA setup: step 2
Appendix 6 JIRA setup: Step 4

Step 4 of 4: Outgoing mail server

Set up a connection to an outgoing mail server so that JIRA can send email notifications. A mail server can also be configured after setup has been completed.

Set up my outgoing mail server

Later  Now

Finish
Appendix 7: JIRA Create Project
Appendix 8: Create User 1
Appendix 9: Create Users Field

Create New User

There are currently 1 total user(s) set up in JIRA, of which 1 are active and count towards your license limit.

Username* Librarian 1
Password ****
   If you do not enter a password, one will be generated automatically.
Confirm ****
Full Name* Librarian 1
Email* librarian1

Send Notification Email
   Send an email to the user you have just created, which will allow them to set up their password (if applicable).

Create Cancel
Appendix 10: Edit User Type
Appendix 11: Issue Features
Appendix 12: Edit Issue Type
Appendix 13: Custom Fields
## Appendix 14: Configure Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Screens</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affects Version(s)</td>
<td>• Default Screen</td>
<td>Edit / Show</td>
</tr>
<tr>
<td>Assignee</td>
<td>• Default Screen</td>
<td>Edit / Hide / Screens</td>
</tr>
<tr>
<td>Attachment</td>
<td>• Default Screen</td>
<td>Edit / Hide / Screens</td>
</tr>
<tr>
<td>Comment</td>
<td>This field cannot be placed on screens by users.</td>
<td>Edit / Reminders</td>
</tr>
<tr>
<td>Components</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens / Reminders</td>
</tr>
<tr>
<td>Department</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
<tr>
<td>Description</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens / Reminders</td>
</tr>
<tr>
<td>Due Date</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
<tr>
<td>Environment</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens / Reminders</td>
</tr>
<tr>
<td>File Version</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens / Reminders</td>
</tr>
<tr>
<td>Issue Type</td>
<td>• Default Screen</td>
<td>Edit / Screens</td>
</tr>
<tr>
<td>Labels</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
<tr>
<td>Linked Issues</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
<tr>
<td>Priority</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
<tr>
<td>RELOAD Scale</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
<tr>
<td>Reporter</td>
<td>• Default Screen</td>
<td>Edit / Hide / Optional / Screens</td>
</tr>
<tr>
<td>Resolution</td>
<td>• Default Screen</td>
<td>Edit / Hide / Screens</td>
</tr>
<tr>
<td>Security Level</td>
<td>• Default Screen</td>
<td>Edit / Hide / Required / Screens</td>
</tr>
</tbody>
</table>
Appendix 15: Create Issue
Appendix 16: Issue Form

Create Issue

- Project: Reference
- Issue Type: Lit Search
- Summary: Nanotechnology
- Priority: Major
- Due Date: 3/11
- Assignee: Librarian 1
- Description: Search for use of nanotechnology in surgery.

- Attachment: Choose Files, No file chosen
- Department: Department 1
- READ Scale: 5
- Reported By: User 1

Options: Create another, Create, Cancel
Appendix 17: Log Work
Appendix 18: Logged Work

Log Work

Time Spent: 4h
An estimate of how much time you have spent working.

Date Started: 04/Mar/13 4:47 PM

Remaining Estimate
- Adjust automatically: the estimate will be reduced by the amount of work done, but never below 0.
- Leave estimate unset
- Set to: (eg. 3w 4d 12h)
- Reduce by: (eg. 3w 4d 12h)

Work Description: Completed Search strategy, found 257 results. See folder on shared drive for full details on search strategy.

Viewable by All Users

Find more time-tracking add-ons...
Appendix 19: Issue with all activity
Appendix 20: Pie Chart Options
Appendix 21: Sample Pie Chart