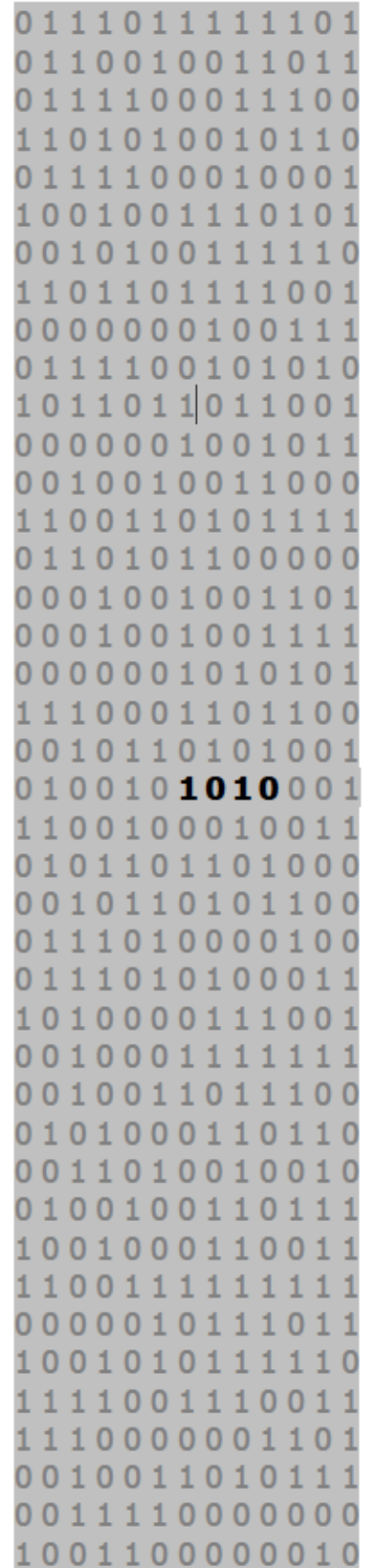




Getting Started

User Guide

Version V





Release 20091103

© Copyright 2009 1010data, Inc.



TABLE OF CONTENTS

Chapter 1: 1010data System Overview.....	3
Logging In.....	3
Data Access and Folder Organization.....	5
Folder Navigation Introduction.....	6
Chapter 2: Tables.....	8
Using a Table.....	8
Opening Multiple Worksheets	8
Table Components	9
Navigating Through a Table.....	10
Go to Row.....	10
Find	12
Go to Column.....	13
Chapter 3: Operations.....	15
Creating a Computed Column.....	15
Row Selection.....	20
Analysis	24
Combining Tables.....	29
Sorting	34
Chapter 4: Saving	36
Save as New Table.....	36
Save Actions as New Macro.....	36
Save as Quick Query.....	38
Chapter 5: Links to Other Topics of Interest	38



Chapter 1: 1010data System Overview

1010data is a database system that allows users to analyze data sets over the internet using a browser interface or an application program interface to create either on-the-fly or pre-designed-Macro queries or questions for a current set of data. 1010data is the most powerful and flexible business intelligence solution on the market. It can load, update and handle data sets of more than a billion records quickly and efficiently. Users can write an application in minutes or hours compared to days or weeks with a traditional database implementation. 1010data is not an OLAP tool, but it provides OLAP functionality by allowing the user to analyze every transaction, and every characteristic of that transaction, on each and every query created by or for the user. This guide will help you begin to harness the powerful analytical potential that 1010data provides. For a more in depth look at certain topics, users are encouraged to refer to the online General Help Index, which is accessible by clicking on online help in the support popup once you have logged in, or by clicking on the [General Help Index](#) hyperlink.

Logging In

To enter the 1010data web site you must have a Username and Password.

- If you already have a Username and Password, please move ahead to Step 1.
- If you work for a company that is **already a 1010data client** and would like to **request a Username and Password**, please send an email to support@1010data.com. Include your name, the name of the company and some suggestions for a Username.
- If you or your company is not already a 1010data client, and you would like to obtain a **Demo** Username and Password, please sign up on the 1010data website. After signup is complete, 1010data will email you an access code that you will need the first time you log on.

Step 1: Go to <http://www.1010data.com>

<input type="button" value="Submit"/>	Username:	<input type="text"/>	<input checked="" type="checkbox"/> Warn me if username is in use.
	Password:	<input type="password"/>	<input type="checkbox"/> End existing session, if any.
<input type="button" value="Sign Up"/>			<input type="checkbox"/> Use Version 5 Beta (disclaimer)

A Whole New Approach to Data Exploration

The Idea in a Nutshell →

What We Do →

What You Will Be Able to Do →

What You Won't Have to Do →

How We Are Able to Do What We Do →

1010data offers a complete service for analyzing large amounts of detailed data. The customer simply sends us the raw data and is almost immediately able to explore it using nothing more than a web browser.

We know what you're thinking. That's it? Where's the complexity? Where's the jargon? *What's the catch?* Well there isn't any. You can be analyzing terabytes of data (hey, we have to use *some* jargon) in no time, without getting mired in techno-oblivion.

To get more perspective, click the links at left. To learn even more, use the links below or the menu above. Even better, [contact us](#).

Get started quickly. Develop analyses quickly. Run queries quickly. Access data updates quickly. No hassles. No risk.



Retail/CPG →

We'll handle the hardware, software and database. You handle the mangos.



Financial Services →

Meet the challenges of today's volatile, data-dependent markets.



IT Professionals →

Need to deliver a data warehouse quickly? Let us help you do the heavy lifting.

RECENT EVENTS

June 18 - Thank you for making our User Conference a success! Click [here](#) or check the beta checkbox above to login to the new interface. Click [here](#) to access the Asset Securitization Report (Mortgage Debt: "Investing in an Era of Loan Modifications") that was presented at the User Conference.

January 12 - 1010data brought the National Retail Federation to the New York Stock Exchange for the Closing Bell® Ceremony. Click [here](#) to read more.

January 5 - In conjunction with Asset Securitization Report, 1010data sponsored and organized a roundtable discussion about loan modifications. The panelists covered topics ranging from the effectiveness of various loan modification methods to the impact of loan mods on the capital markets. To view the video, click [here](#).

TRY VERSION 5 BETA



UPCOMING EVENTS

Come visit us at...

- [ABS East 2009](#) October 25-27, Miami
- [Gartner Symposium ITxpo 2009](#) October 18-22, Orlando
- [CIO Executive Summit 2009](#) November 11, Dallas
- [NRF 2010](#) January 10-13, New York
- [ASF 2010](#) January 31 - February 3, D.C.

Unless otherwise expressly agreed to in a writing stating that the terms set forth on this web site are superseded, all usage of the 1010data web site is subject to our [End-User License Agreement \(EULA\)](#) and [Disclaimer of Liability](#).

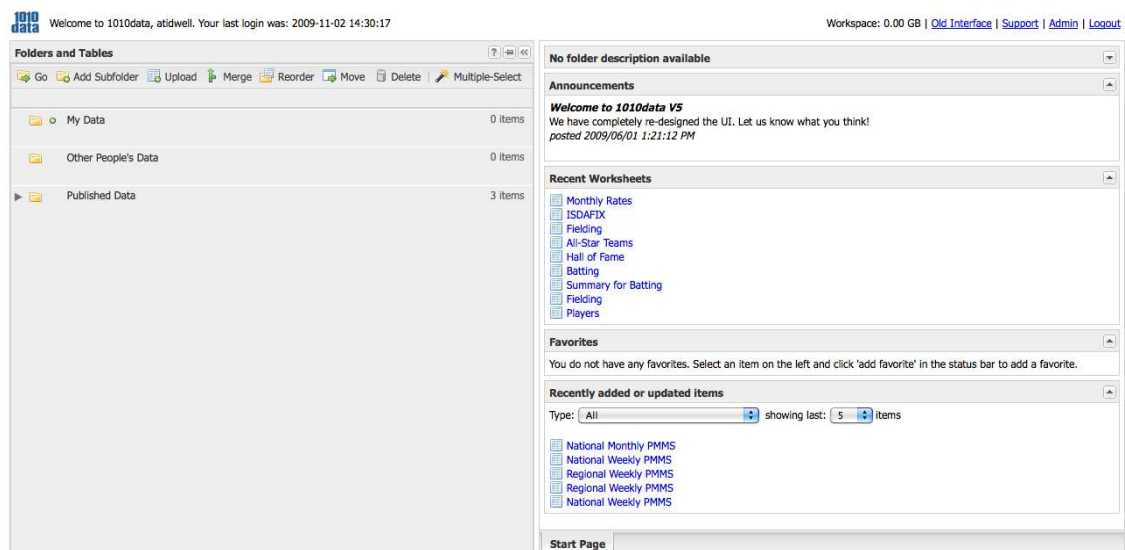
Step 2: Enter your Username and Password in the appropriate boxes and click the **Submit** button.



Data Access and Folder Organization

Once you have successfully logged into the system, you will see a set of folders on the left half of your screen, which contain all of the data available to you, as depicted below in Screenshot 2. All folders have a manila folder icon next to the name of the folder. 1010data is organized into a hierarchical folder system to allow you to find the appropriate tables. A folder may contain one or more subfolders, tables and/or quick queries. A folder that contains tables and/or quick queries will have a triangle icon (▶) to the left of the folder name, and will list the number of contained items to the right of the folder name.

Remember that 1010data's folder system works similar to most hierarchical filing systems, so that each folder/subfolder will contain either: another level of subfolders or a list of tables and/or quick queries.



Screenshot 2

On the right half of the screen, you will see a variety of information, including Notifications, Announcements, Recently Accessed Worksheets, Favorites, and Recently added or updated items. For additional information about each of these items, please see the [General Help Index](#).

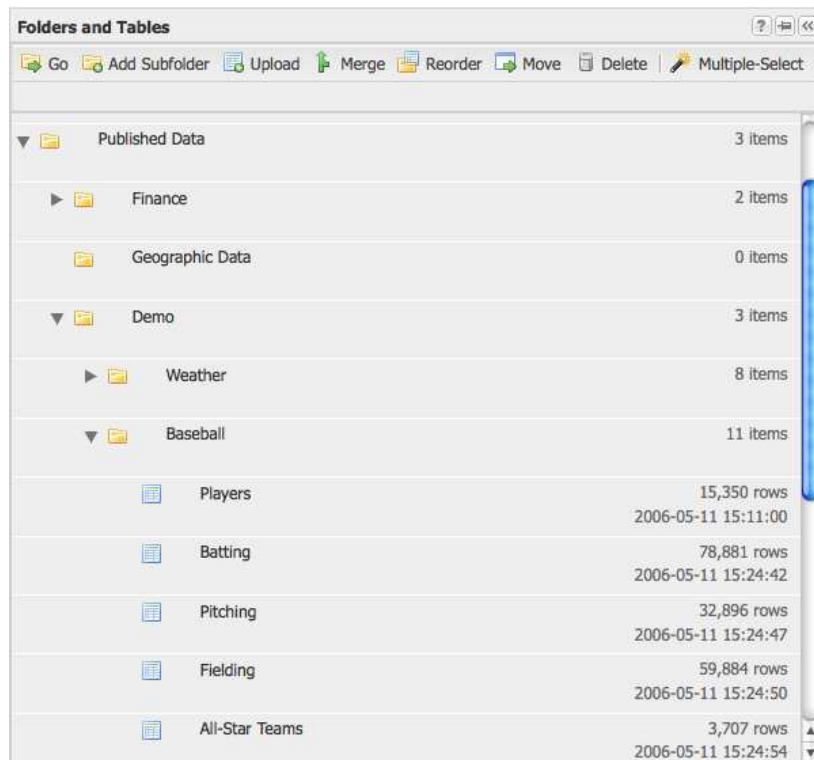
Folder Navigation Introduction

The file browser pane (called **Folders and Tables**) is located on the left side of the screen when you log in. It contains a toolbar that allows you to take various actions on folders and other items. It also allows you to traverse the folder hierarchy. The panel that contains the file browser is collapsed when an item is opened. It can be expanded temporarily by clicking the bar on the left side of the screen (see Screenshot 3).



Screenshot 3

When you click the triangle icon next to **Published Data** (or double click the folder name), three subfolders become available, as seen in Screenshot 4. Before actually opening a table, you must first select the appropriate subfolder of the data table that you are looking for. In this example, we will select **Demo** and quickly see that inside the Demo folder there is another sub-folder entitled “Baseball.” Clicking on the “Baseball” subfolder will allow you to view all tables in the subfolder. If a description of the data contained in the tables is provided, it will appear below the name of the folder or item.

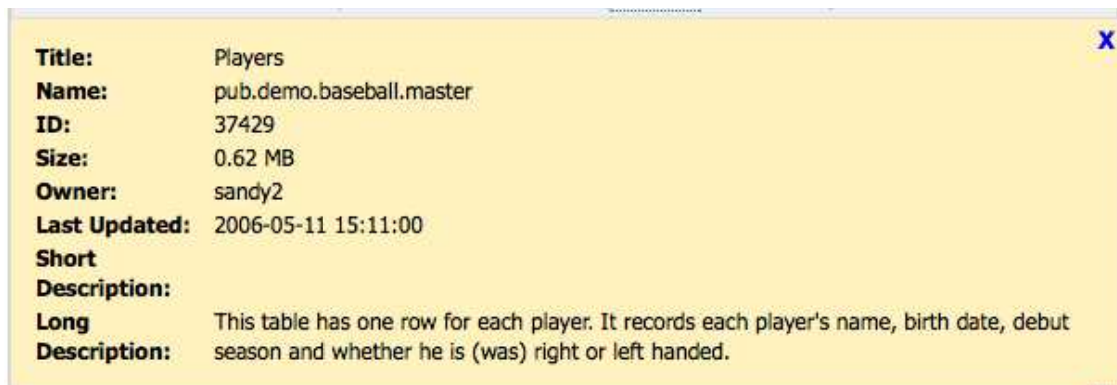


Screenshot 4

Since users have different access privileges, some tables may appear to you and not to others. In this case, all tables should appear and will be accessible to you because the tables are both relatively small and published for public viewing and use. If you own an item, it will have the own icon (👤) next to it. If you have permission to upload to a folder that you do not own, it will appear with the upload permission (📁) icon next to it.

Appearing to the right of the table names are the total number of rows in the table and the date that the file was last updated or modified. Be aware that the time it takes to open, manipulate and work with a table correlates directly to the size of the table. You should thus be able to use the table size info to achieve a general expectation, or approximation, of the amount of time that certain operations will take. This may be helpful if you are unsure whether the program is running at the proper speed. For example, if you are using a high-speed internet connection, the amount of time it takes to load the batting data from the moment you click the table name, which as shown in Screenshot 1.5 has 78,881 rows, to the time that the table shows up on your screen should be under 10 seconds.

For information about any item, whether it is a folder (📁), table (📊), quick query (🔍), custom report (📌), or a merged table (🔗), you must first **select** that item by clicking on it. Once an item is selected, you can click links in the file browser's status bar to: **view info**, **edit info** (if you have permission to modify the item), or **add (or remove) favorite** to add the item to your favorites. The View Info entry may provide any range of information about the contents of the table. If we select the Players table and click View Info, we learn the Title, Name, ID, Size, Owner, Last Updated date, and Short and Long Descriptions.



Screenshot 5

Chapter 2: Tables

Using a Table

To open up a table, double click on the name of the table. To continue with the example from Chapter 1, we will open up the [Players Table](#).

Welcome to 1010data, atidwell. Your last login was: 2009-11-02 14:53:40
Workspace: 0.02 GB | [Old Interface](#) | [Support](#) | [Admin](#) | [Logout](#)

All Databases / Published Data / Demo / Baseball /

File View Actions Columns Rows Analysis Download Reports Help

Players
Columns 1-9 of 9, Rows 1-14 of 15,350

ID	Last Name	First Name	Bats	Throws	Birth Month	Birth Day	Birth Year	Debut Year
ALLENET01	ALLEN	ETHAN	R	R	1	1	1904	1926
ALLENFR01	ALLEN	FRANK	R	L	8	26	1889	1912
ALLENGA01	ALLENSON	GARY	R	R	2	4	1955	1979
ALLENHA01	ALLEN	HAM			8	0	1854	1872
ALLENHA02	ALLEN	HANK	R	R	7	23	1940	1966
ALLENHE01	ALLEN	HEZEKIAH			2	25	1863	1884
ALLENHO01	ALLEN	HORACE	L	R	6	11	1899	1919
ALLENJA01	ALLEN	JACK	R	R	10	2	1855	1879
ALLENJA02	ALLEN	JAMIE	R	R	5	29	1958	1983
ALLENJE01	ALLENSWORTH	JERMAINE	R	R	1	11	1972	1996
ALLENJO01	ALLEN	JOHN	R	R	10	27	1890	1914
ALLENJO02	ALLEN	JOHNNY	R	R	9	30	1905	1932
ALLENKI01	ALLEN	KIM	R	R	4	5	1953	1980
ALLENLL01	ALLEN	LLOYD	R	R	5	8	1950	1969

Start Page | **Players**

Screenshot 6

Screenshot 6 provides an example of what a table looks like. At the top of the screen, under the word **Players**, the title of this table, is information that tells you which columns and rows out of the total columns and rows are depicted in this view. This table has 9 columns and all fit in this view; however, this table contains 15,350 rows, which is clearly too many to fit on one page, so only a fraction actually appear. In this case, it is rows 1 through 14.

Opening Multiple Worksheets

So far, we have discussed working with only one worksheet. However, 1010data allows you to work with multiple worksheets simultaneously. To

open a second worksheet while inside the **Players Table**, simply re-expand the file browser by clicking on the bar on the left of the screen (see Screenshot 1), and double-click the additional table you wish to open.

The **All-Star Teams Table** will appear on the screen much like in Screenshot 6; however, you will now see both a **Players** and an **All-Star Teams** tab at the bottom of the screen (Screenshot 7). You may click on either worksheet to move between the two tables.

FERREWE01	1933	CLE	A
FOXXJI01	1933	PHI	A
GEHRICH01	1933	DET	A
GEHRILO01	1933	NY	A
GOMEZLE01	1933	NY	A
GROVELE01	1933	PHI	A
HILDEOR01	1933	CLE	A
LAZZETO01	1933	NY	A

Screenshot 7

Table Components

Every table consists of rows and columns. In this case, a yellow line divides the leftmost column from the rest of the columns. This yellow line indicates that the column to the left of it is a fixed column and will remain at the beginning of the display even if you scroll the table to the right (see Screenshot 8 - below).

It is possible for multiple columns to have highlighted titles and remain in a fixed position. Each **row** represents a **record**, and each column or **field** contains data or information relevant to that **record**.

Batting
Columns 1-13 of 31, Rows 1-22 of 78,881

ID	Year	Team	League	Games	At Bats	Runs	Hits	Total Bases	Doubles	Triples	Home Runs	RBI
HATFIJ001	1871	MUT	NA	33	168	41	43	50	3	2	0	22
PEARCDI01	1871	MUT	NA	33	163	31	44	49	5	0	0	20
FORCEDA01	1871	OLY	NA	32	162	45	45	62	9	4	0	29
STARTJ001	1871	MUT	NA	33	161	35	58	68	5	1	1	34
WATERFRO1	1871	OLY	NA	32	158	46	50	65	7	4	0	17
FERGUB001	1871	MUT	NA	33	158	30	38	46	6	1	0	25
HILLSEVO1	1871	OLY	NA	32	157	38	43	60	6	4	1	24
BARNERO01	1871	BOS	NA	31	157	66	63	91	10	9	0	34
MCVEYCA01	1871	BOS	NA	29	153	43	66	85	9	5	0	43
BIRDSDA01	1871	BOS	NA	29	152	51	46	55	3	3	0	24
GOULDCHO1	1871	BOS	NA	31	151	38	43	62	9	2	2	32
FATTEDA01	1871	MUT	NA	32	151	31	31	33	2	0	0	13
CUTHBNE01	1871	ATH	NA	28	150	47	37	63	7	5	3	30
SCHAFHA01	1871	BOS	NA	31	149	38	42	59	7	5	0	28
MCGEAMI01	1871	TRO	NA	29	148	42	39	43	4	0	0	12
LEONAMN01	1871	OLY	NA	31	148	33	43	57	8	3	0	30
EGGLEDA01	1871	MUT	NA	33	147	37	47	60	7	3	0	18
FISLEWE01	1871	ATH	NA	28	147	43	41	53	8	2	0	16
WRIGHHA01	1871	BOS	NA	31	147	42	44	53	5	2	0	26
WHITEDE01	1871	CLE	NA	29	146	40	47	66	6	5	1	21
HILLSCHO1	1871	MUT	NA	32	146	27	36	46	4	3	0	22
RADCLJ001	1871	ATH	NA	28	145	47	44	61	7	5	0	22

Screenshot 8



Navigating Through a Table

Since screen size restricts the number of rows and columns that you can see at a time, 1010data provides tools to navigate through a table.

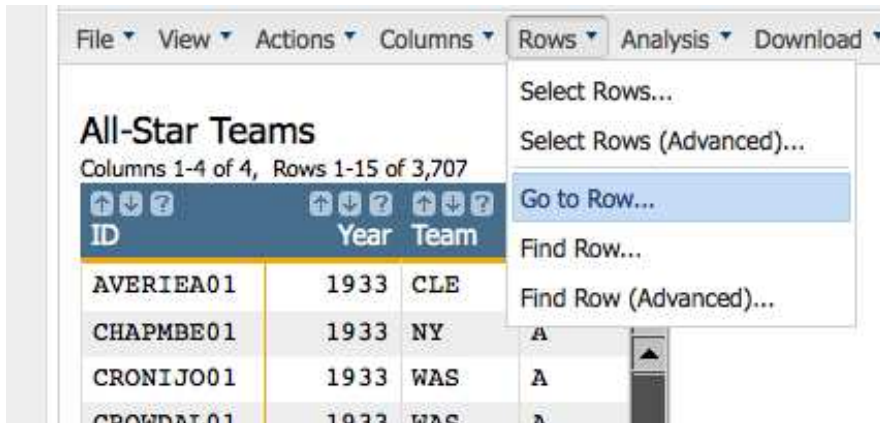
Scrollbars & Scrolling – If a table contains more rows than can be displayed in the current view, a vertical scrollbar appears along the right side of the table. If a table contains more columns than can be displayed in the current view, a horizontal scrollbar appears below the last visible row. You can scroll one row at a time by clicking on the single arrows or a page at a time by clicking on the double arrows. In addition, 1010data offers a proportional scrolling option that allows you to click on the center section of the scrollbar to move immediately to a specific section of the data table. For example, if you want to view the middle of the table then you would click the middle of the scrollbar.

If you are trying to get to a particular row, this method is inefficient. It is faster if you view the table starting from the row number that you wish to view. This is depicted in the next section, titled **Go to Row**. **Go to Row** allows you to enter the row number that you wish to view and clicking **Submit** will display the information for the specified row to appear.

If you want to narrow your view of the table to a single row, you can do so by clicking on the **View** button at the top-right hand corner of your session and then click on **One Row at a Time** that appears from the dropdown menu bar. To expand your field of view you can click the button **View** and then click on the Table **Multiple Rows at a Time**. For more on this topic please consult the [Viewing Tables](#) in the [General Help Index](#).

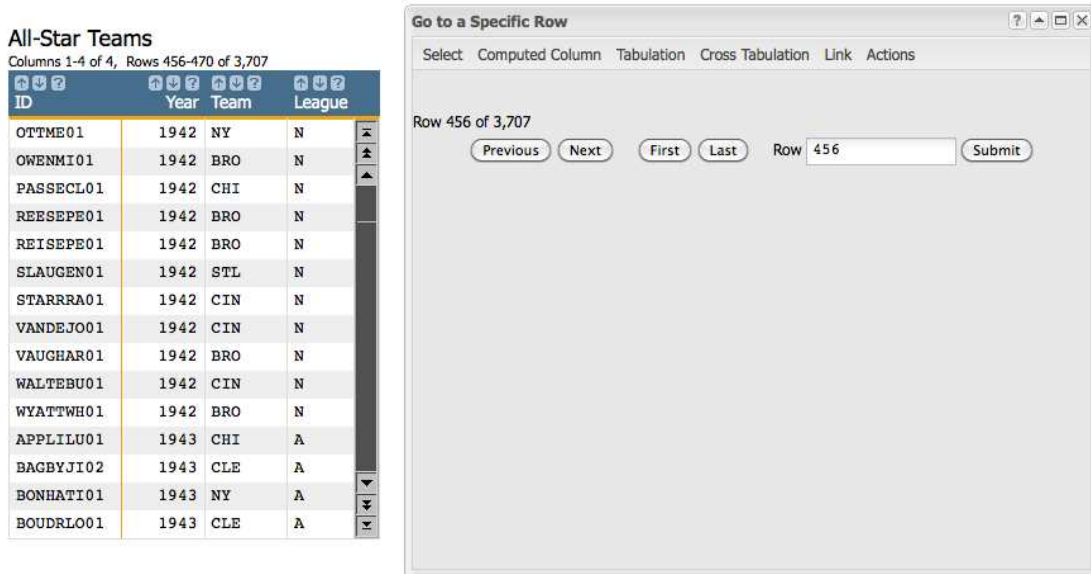
Go to Row

To go directly to a specific row, click on the **Rows** dropdown menu. Then, you will see **Go to Row**, as seen in Screenshot 9 below.



Screenshot 9

Click on **Go to Row** and type in any row number in the text box. This will bring you directly to the row number you entered. For example, see Screenshot 10 where the number “456” was entered. The table on the right side of the screen now displays rows 456-470. Once you press the submit button, the row you specified appears as the first row in the table view.

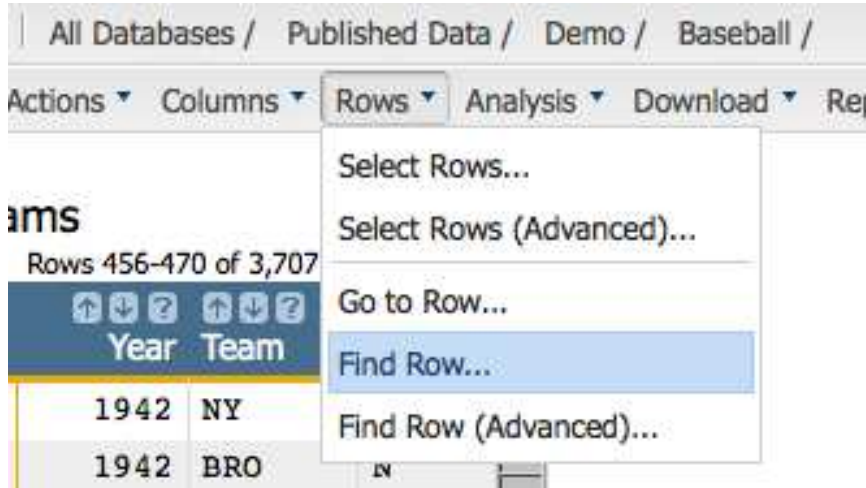


Screenshot 10

Find Row

Another feature you will find in the **Rows** dropdown menu is **Find Row**. This feature allows you to find a group of records that share a commonality. This is similar to selecting rows (described later); however, when you **Find Row** you do not discard the rest of the data in the table. You merely set the

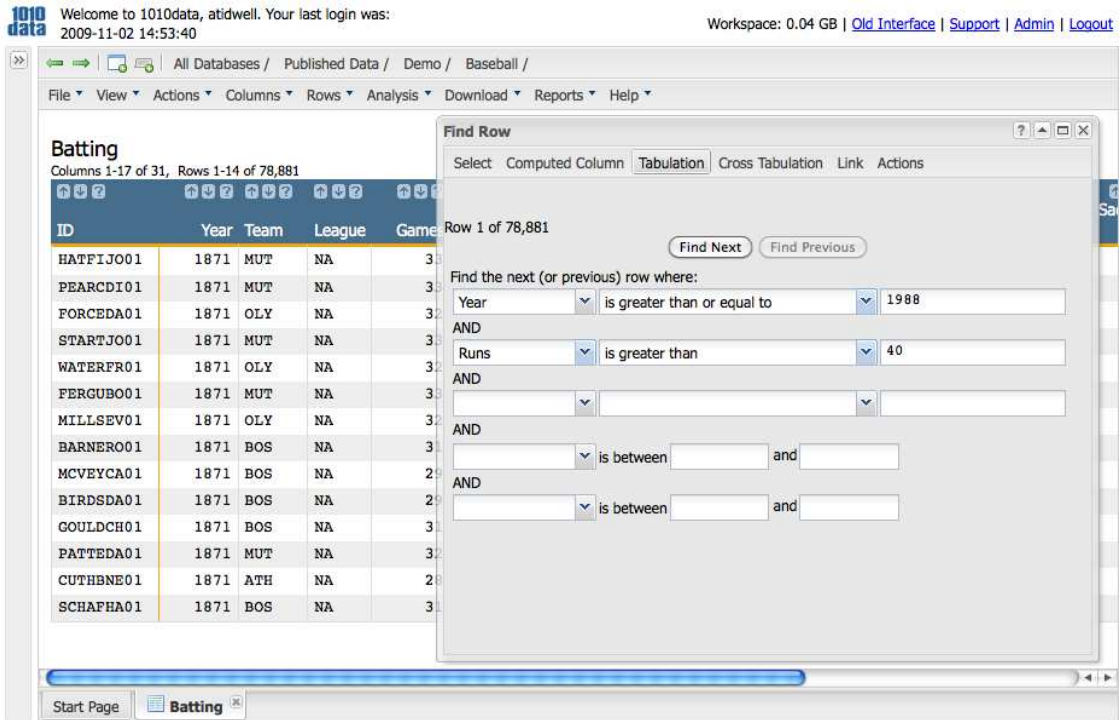
view for a specific group of rows, while leaving the rest of the table intact and ready for analysis. (Screenshot 11)



Screenshot 11

Use dropdown boxes and textboxes to specify the rows you wish to view. In each of the first three lines, the list box on the left contains a list of columns in the table. The list box in the middle provides a list of logical operators. The textbox on the right allows you to input the value(s) for the chosen column that you wish to view in the table. The bottom two options are to select events between two values.

For example in Screenshot 12 (below), if you want to view years from 1988 on, you would select the column **Year** in the left list box and the **Is Greater Than or Equal To** option in the middle list box. In the text box you would enter the year 1988. The outcome of this action is that the table view is now focused on all years from 1988 forward. In the next two dropdown boxes, select the column **Runs** and the **Is Greater Than** option. In the text box enter 40. Click **Find Next**, and the right of the screen will focus the table view on records where the year is greater than or equal to 1988 and the number of runs is greater than 40.

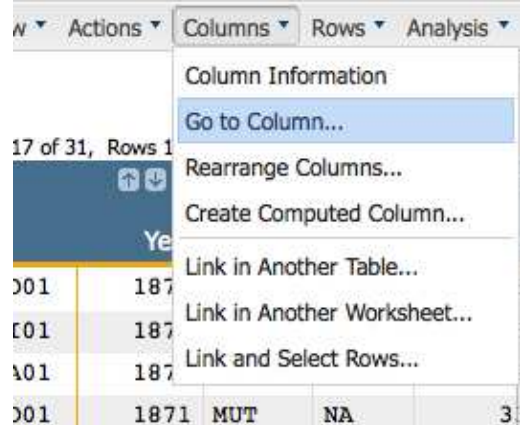


Screenshot 12

Go to Column

Directly viewing a specific column is similar to finding a row. Click on the **Column** dropdown menu. Then select **Go to Column**, as seen in Screenshot 13.

Select the column from the dropdown box that you wish to view, as shown in Screenshot 14 (below).



Screenshot 13

For example, under the dropdown box, select **Hits** and click submit. In Screenshot 15, the **Hits** column is now the first column in the table view.

Welcome to 1010data, atidwell. Your last login was: 2009-11-02 14:53:40

Workspace: 0.04 GB | [Old Interface](#) | [Support](#) | [Admin](#) | [Logout](#)

All Databases / Published Data / Demo / Baseball /

File View Actions Columns Rows Analysis Download Reports Help

Batting

Columns 1-17 of 31, Rows 1-14 of 78,881

ID	Year	Team	League	Games
HATFIJO01	1871	MUT	NA	3
PEARCDI01	1871	MUT	NA	3
FORCEDA01	1871	OLY	NA	3
STARTJO01	1871	MUT	NA	3
WATERFR01	1871	OLY	NA	3
FERGUBO01	1871	MUT	NA	3
MILLSEV01	1871	OLY	NA	3
BARNERO01	1871	BOS	NA	3
MCVEYCA01	1871	BOS	NA	2
BIRSDA01	1871	BOS	NA	2
GOULDCH01	1871	BOS	NA	3
PATTEDA01	1871	MUT	NA	3
CUTHBNE01	1871	ATH	NA	2
SCHAFHA01	1871	BOS	NA	3

Go to Column

Select Computed Column Tabulation Cross Tabulation Link Actions

Year

- Year
- Team
- League
- Games
- At Bats
- Runs
- Hits
- Total Bases
- Doubles
- Triples
- Home Runs
- RBI
- Sacrifice Hits
- Sacrifice Flies

Start Page **Batting**

Screenshot 14

Batting

Columns 8-18 of 31, Rows 1-14 of 78,881

ID	Hits	Total Bases	Doubles	Triples	Home Runs	RBI	Sacrifice Hits	Sacrifice Flies	Stolen Bases	Caught Stealing	Base on Balls
HATFIJO01	43	50	3	2	0	22			10	3	4
PEARCDI01	44	49	5	0	0	20			0	0	4
FORCEDA01	45	62	9	4	0	29			8	0	4
STARTJO01	58	68	5	1	1	34			4	2	3
WATERFR01	50	65	7	4	0	17			11	3	10
FERGUBO01	38	46	6	1	0	25			4	4	3
MILLSEV01	43	60	6	4	1	24			2	3	3
BARNERO01	63	91	10	9	0	34			11	6	13
MCVEYCA01	66	85	9	5	0	43			6	0	1
BIRSDA01	46	55	3	3	0	24			6	0	4
GOULDCH01	43	62	9	2	2	32			6	2	3
PATTEDA01	31	33	2	0	0	13			2	1	1
CUTHBNE01	37	63	7	5	3	30			16	2	10
SCHAFHA01	42	59	7	5	0	28			13	4	3

Screenshot 15



Chapter 3: Operations

1010data offers users the ability to manipulate table data quickly and easily. The three types of operations discussed in Chapter 3 will provide you with the immediate ability to manipulate data in virtually anyway. After reading through Chapter 3, we suggest that you begin to test your understanding of this immense analytical capability through your own detailed, ad-hoc analysis.

Creating a Computed Column

The ability to compute your own column is fundamental to 1010data's analytical capability. A **computed column** is a column created by the user and displayed as the last column in the current table. The user may use predefined functions found in the General Index and/or general mathematical/statistical principles to create new columns in a table. A new column may be the product of any level of mathematical complexity. This feature is generally necessary and helpful to users who want to do analysis that goes deeper than general summary statistics of the current data in a table. The user can do tabulations using this new column just like any other column in the table to solve practical analytical problems. Creating **computed columns** is one of the most important features to users of 1010data who want to solve complex problems.

For clarity, before creating a **computed column** you will need to go back to the raw table that we had before any changes were made. To do this, click on the close icon in the tabs at the bottom for the worksheet you are using, then open the file-browser pane and double click the **Batting Table** to open the raw table. To create a **computed column**, go to the **Column** dropdown menu and click on the **Create Computed Column** option. The resulting page is depicted below in Screenshot 16.

The screenshot shows a software interface with a table titled 'Batting' and a 'Create Computed Column' dialog box. The table has columns for ID, Year, Team, League, Games, At Bats, Runs, Hits, and Total Bases. The dialog box has fields for Column Name, Column Heading, and Value Expression, along with a 'Submit' button and a list of columns eligible for use in the value expression.

ID	Year	Team	League	Games	At Bats	Runs	Hits	Total Bases
HATFJ001	1871	MUT	NA	33	168	41	43	50
PEARCDI01	1871	MUT	NA	33	163	31	44	49
FORCEDA01	1871	OLY	NA	32	162	45	45	62
STARFJ001	1871	MUT	NA	33	161	35	58	68
WATERFR01	1871	OLY	NA	32	158	46	50	65
FERGUB001	1871	MUT	NA	33	158	30	38	46
MILLSBV01	1871	OLY	NA	32	157	38	43	60
BARNERO01	1871	BOS	NA	31	157	66	63	91
MCVEYCA01	1871	BOS	NA	29	153	43	66	85
BIRSDA01	1871	BOS	NA	29	152	51	46	55
GOULDC01	1871	BOS	NA	31	151	38	43	62
PATTEDA01	1871	MUT	NA	32	151	31	31	33
CUTHBNE01	1871	ATH	NA	28	150	47	37	63
SCHAFFHA01	1871	BOS	NA	31	149	38	42	59
MCGEAMI01	1871	TRO	NA	29	148	42	39	43

Screenshot 16

Screenshot 16 shows several input items.

A) The **Column Name** must be a single word (i.e. no spaces) containing letters, numbers or underscore (_), and beginning with a letter. This value is not displayed in the table, but it can be seen by clicking the question mark icon above the computed column in the table, and it will be used in future calculations.

B) The **Column Heading** is the value that will appear above the computed column. Single and multi word inputs are acceptable along with any combination of letters and/or numbers. A backquote (`) may be used to separate lines.

C) The **Value Expression** is a formula that defines the value of the new column. For a list of available operators, functions and variables, along with their explanations and examples on how to use the expressions in calculations, please refer to the [General Help Index](#) section entitled [Value Expressions](#).

Example: Continuing with the Baseball Statistics example using the Batting Table: Suppose you want to compute the On Base Percentage (OBP), which is a measure of how often a batter gets to first base for any reason other than a fielding error or a fielder's choice, you would type the following into the **Value Expression**:

$$(h+bb+ibb+hpb) / (ab+bb+ibb+hpb+sf)$$



(Total # of Hits + Total # of unintentional walks + Total # of intentional walks + Total # of Times Hit By Pitch) / (Total # of At Bats + Total # of unintentional walks + Total # of intentional walks + Total # of Times Hit By Pitch + Total # of Sacrifice Flies)

D) In this example, the **Treat special values as NA?** Checkbox may remain unchecked. For further details on how to create **Computed Columns**, please refer to the [General Help Index](#) under [Computed Columns](#).

E) The **Display Format** listbox allows you to choose the way the column's values are formatted. For this example, you may leave the **Display Format** listbox blank because we are not working with dates, times or other special types of values.

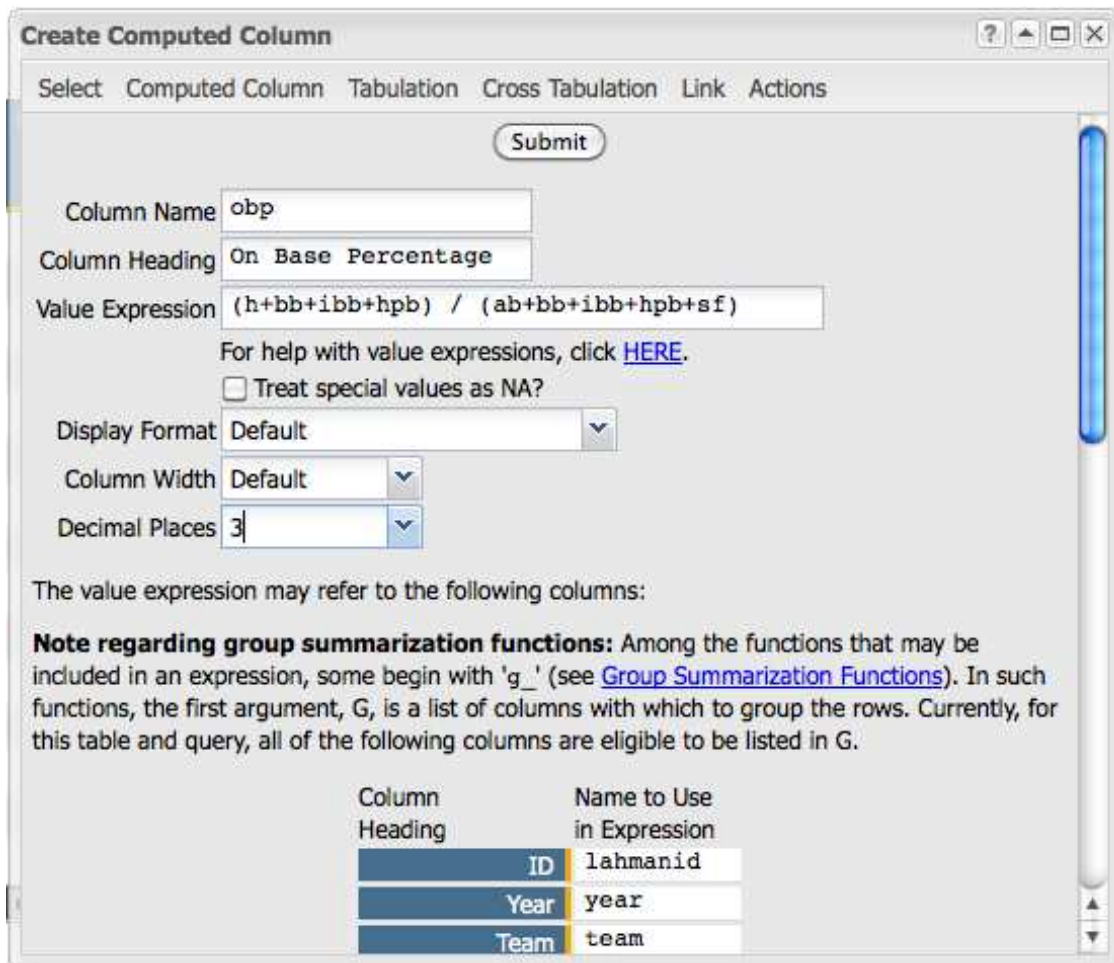
F) The **Column Width** listbox gives you the option to set the width of the column. The column width number must be an integer from 1 to 40 and represents the number of characters displayed in a column. Setting the column width makes the values in the table line up better, making the table easier to read.

If the column values are text, such as addresses, a maximum of 40 characters will show up in the computed column in the table. However, the column values may contain more than 40 characters. If the value is longer than 40 characters, the last character shown in the column is a blue greater-than sign (>). By clicking on the greater-than sign, a window will pop up and display the entire value.

If the column values are numbers and a value has more than 40 characters, the system will first shave off any superfluous characters, such as commas. After all commas have been deleted, the program will start to shave off decimal places by rounding. Since the digits farthest to the right are least significant, rounding is the most efficient way to cut down the number of digits.

G) For numbers, you may specify the number of **Decimal Places** by

using the **Decimal Place** listbox. The number of decimal places chosen must be a number between 1 and 9; however, if the number is very small and requires more than 9 decimal places, you may leave the **Decimal Place** listbox on default and the number will be displayed in scientific notation. For the example below, we will use three decimal places because that is the customary number of digits used by Major League Baseball (MLB). The resulting page is depicted below in Screenshot 17.



The value expression may refer to the following columns:

Note regarding group summarization functions: Among the functions that may be included in an expression, some begin with 'g_' (see [Group Summarization Functions](#)). In such functions, the first argument, G, is a list of columns with which to group the rows. Currently, for this table and query, all of the following columns are eligible to be listed in G.

Column Heading	Name to Use in Expression
ID	lahmanid
Year	year
Team	team

Screenshot 17

Click on the **Submit** button to add the column. The Create Computed Column popup will notify you if the column was successfully added. Closing the popup, you can now view the computed column (Screenshot 18)

Welcome to 1010data, atidwell. Your last login was: 2009-11-02 14:53:40

Workspace: 0.04 GB | [Old Interface](#) | [Support](#) | [Admin](#) | [Logout](#)

All Databases / Published Data / Demo / Baseball /

File View Actions Columns Rows Analysis Download Reports Help

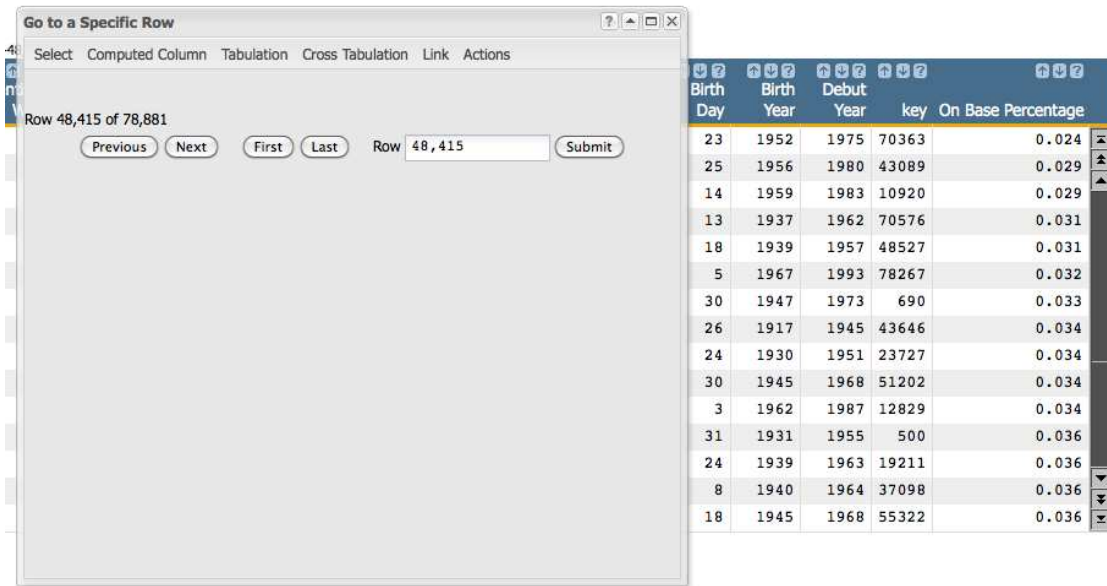
Batting
Columns 23-32 of 32, Rows 1-15 of 78,881

ID	Last Name	First Name	Bats	Throws	Birth Month	Birth Day	Birth Year	Debut Year	key	On Base Percentage
HATFIJ001	HATFIELD	JOHN			7	20	1847	1871	30023	
PEARCDI01	PEARCE	DICKEY	R	R	2	29	1836	1871	55395	
FORCEDA01	FORCE	DAVY	R	R	7	27	1849	1871	22784	
STARTJO01	START	JOE	L	L	10	14	1842	1871	68211	
WATERFR01	WATERMAN	FRED			12	0	1845	1871	75080	
FERGUBO01	FERGUSON	BOB	B	R	1	31	1845	1871	21571	
MILLSEV01	MILLS	EVERETT			1	20	1845	1871	48896	
BARNERO01	BARNES	ROSS	R	R	5	8	1850	1871	3201	
MCVEYCA01	MCVEY	CAL	R	R	8	30	1850	1871	47557	
BIRSDA01	BIRDSALL	DAVE	R	R	7	16	1838	1871	5472	
GOULDC01	GOULD	CHARLIE	R	R	8	21	1847	1871	26525	
PATTEDA01	PATTERSON	DAN	L	0	0	0	1846	1871	55241	
CUTHBNE01	CUTHBERT	NED	R	R	6	20	1845	1871	15886	
SCHAFHA01	SCHAFER	HARRY	R	R	8	14	1846	1871	63269	
MCGEAMI01	MCGEARY	MIKE	R	R	0	0	1851	1871	46595	

Start Page Batting

Screenshot 18

Notice that in Screenshot 18, the **On Base Percentage** Column is blank in the initial screen. This is because the program has sorted the data by default according to the first column, and some players' On Base Percentage values are non-existent. This is due to the fact that some relief pitchers have never been up to bat during the regular season, and thus they do not have an On Base Percentage. In addition, some of the columns necessary for the computations are blank because the records are from years prior to MLB keeping record of certain statistics. Instead of a number in the data field, there is a blank, which 1010data recognizes as a null value (NA) for all analysis. The presence of an NA in the computation causes the system to return NA in the computed column. This is not equivalent to having an OBP of 0. An OBP of 0 occurs when the denominator is an integer and the numerator is 0 (e.g.: If a player has had at least one At Bat and has never safely reached base.) To ensure that On Base Percentage is the **primary sort key** (described in the [Sorting](#) section below), click the up arrow above the column name in Screenshot 19. If you scroll down the table to the 48,415th row, you will begin to see non-zero data in ascending order.



Screenshot 19

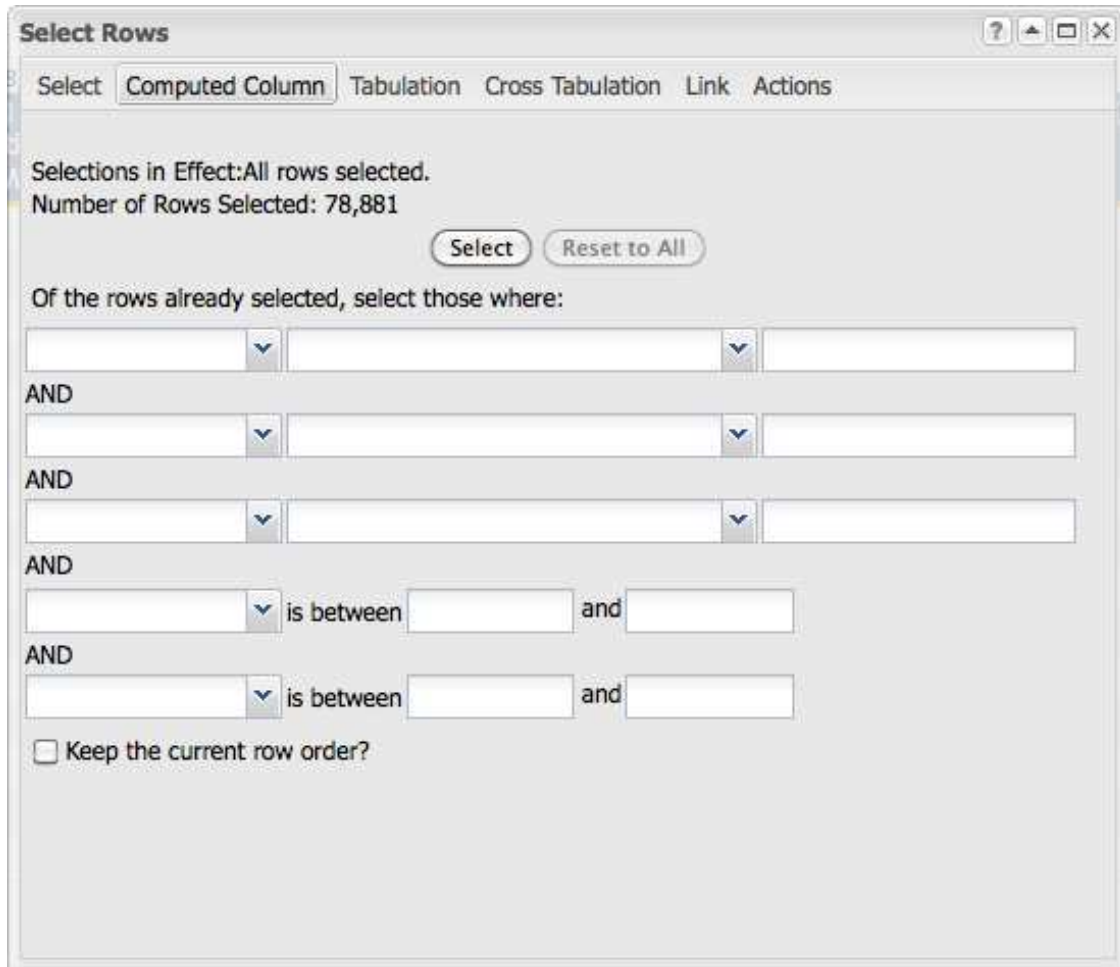
For further details on how to compute a column, please see the General Help Index section entitled [Computed Columns](#).

Row Selection

1010data offers you the ability to narrow down the size of your tables by selecting certain rows that have a common attribute. Since tables have the potential to be quite large, this feature allows you to shrink the size of the table and concentrate on the relevant record set. Despite 1010data’s fast speed, shrinking the size of the table before doing further operations is an easy way to speed up table operations and manipulations.

There are two ways to **Select Rows**.

- A) The easiest way to **Select Rows** is to go to the **Rows** dropdown menu and click **Select Rows**, which brings you to Screenshot 20 (below).



Screenshot 20

Listboxes and textboxes allow you to specify the selection. In each of the first three lines, the listbox on the left contains a list of the different columns. The listbox in the middle provides a choice of comparison types. The textbox on the right allows you to input the value that you wish to use to narrow down your table size. The bottom two options are to select events between two values. For example, if you are trying to select events occurring during a specific interval of time, this would be a good way to select the rows with those events. The **between select rows** option can be used on its own or combined with any of the other select row options.

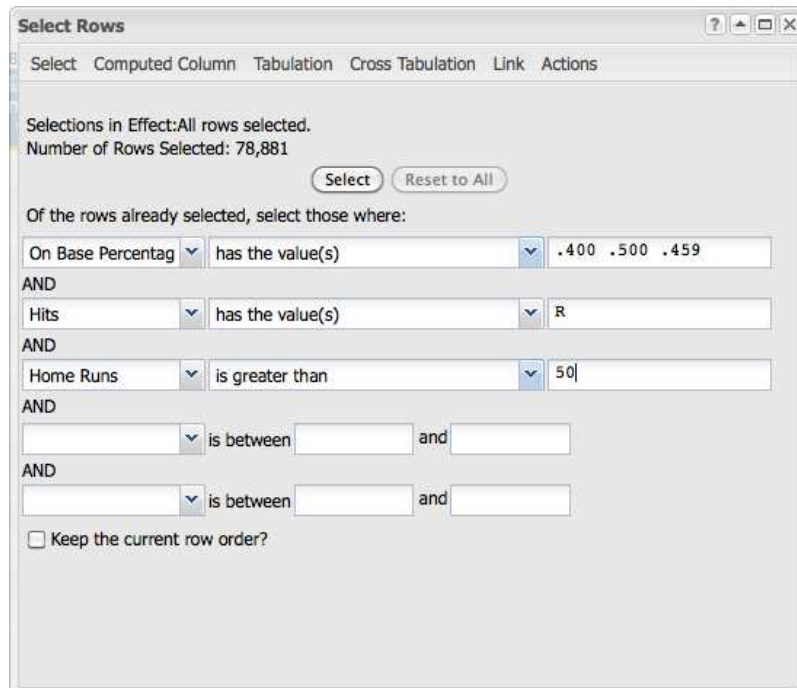
For example, if you want to narrow the table down to players who had a lifetime On Base Percentage (OBP) greater than .400, you would select the **On Base Percentage** column from the first listbox and the **Is Greater Than** option from the second listbox. In the textbox, you

would enter the number **.400** and then click **Select**. The result of this action is a new table that contains only records where the player had a lifetime OBP greater than .400. You must then click either the **View Table Multiple Rows at a Time** or **View Table One Row at a Time** button to view the selected record(s).

In Screenshot 20, the word AND appears between the different columns. This allows you to create more than one condition. Using our Batters table example, you can narrow down the table by selecting only batters who have lifetime OBP greater than .400 *and* who bat right handed. You may use any combination or number of conditions; however, all fields for a condition must have a valid value.

1010data gives you the ability to create a condition that is satisfied by more than one value. In other words, you may search for batters who have a lifetime OBP equal to either .400 or .500 or .459, etc. To obtain this result, select the **On Base Percentage** column from the first listbox and the **has the value(s)** option from the second listbox. In the textbox, simply type each value, separated by a space.

Below, Screenshot 21 provides a look at what a filled in **Select Rows** form looks like. In this case, we have specified three separate criteria, all of which must be true for a row to be included in the result.



The screenshot shows a 'Select Rows' dialog box with the following content:

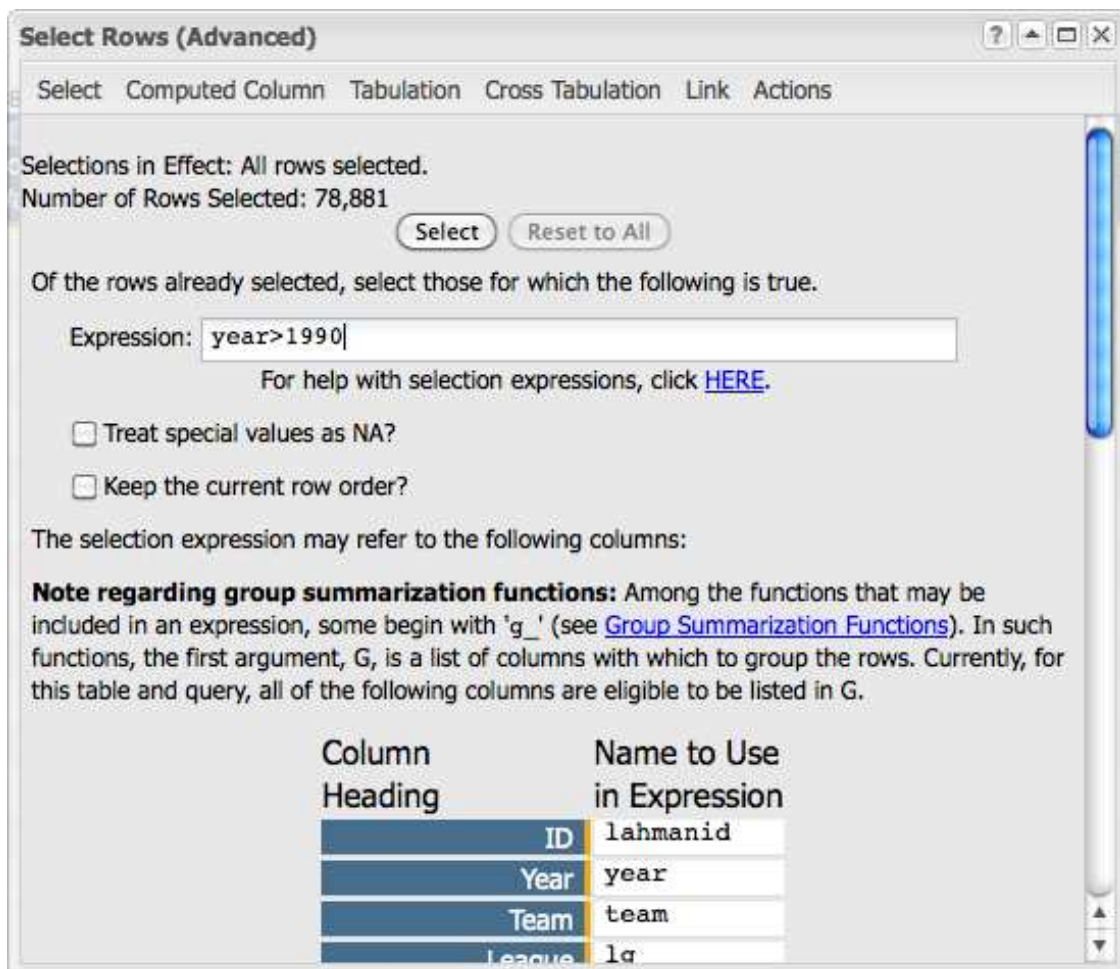
- Buttons: Select, Computed Column, Tabulation, Cross Tabulation, Link, Actions
- Status: Selections in Effect: All rows selected. Number of Rows Selected: 78,881
- Buttons: Select, Reset to All
- Text: Of the rows already selected, select those where:
- Condition 1: On Base Percentage has the value(s) .400 .500 .459
- AND
- Condition 2: Hits has the value(s) R
- AND
- Condition 3: Home Runs is greater than 50
- AND
- Field: is between and
- AND
- Field: is between and
- Checkbox: Keep the current row order?

Screenshot 21

In this particular case, if you were to click the **Select** button, you would find that there are no players who meet all three conditions, so the message “**No matches**” would appear above the **Select** button.

B) Once you are familiar with 1010data’s notation, the **Select Rows (Advanced)** feature under the **Rows** dropdown menu can be a useful tool.

Screenshot 22 shows how you would further narrow down the table size to include only records that occurred after 1990.



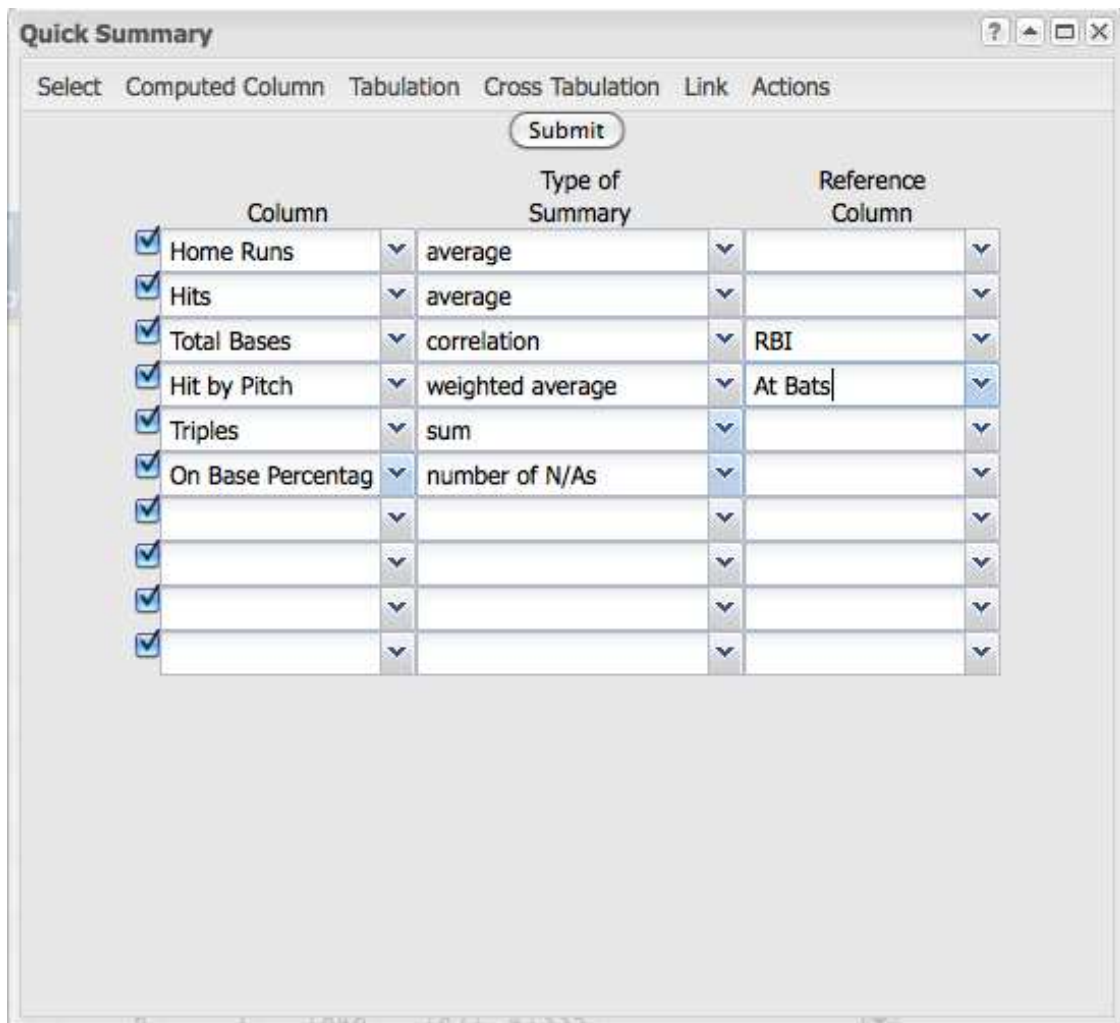
Screenshot 22

Analysis

The **Analysis** dropdown menu provides you with three different ways to

analyze data:

- a) The **Quick Summary** option allows you to perform up to 50 summary calculations on any column at one time (The default is set at 10 calculations, but this can be changed in the **Set Preferences** window under the **View** dropdown menu). Dropdown listboxes provide all selectable inputs. This is the simplest way to create summary statistics for the data in a table.



Screenshot 23

Screenshot 23 above provides an example of the **Quick Summary** display. After clicking the **Submit** button, you will see the results as depicted below in Screenshot 24.

Summary for Batting

Row 1 of 1

Average Home Runs	2.58
Average Hits	39.060
Correlation of Total Bases with RBI	0.96
Average Hit by Pitch Weighted by At Bats	2.67
Sum of Triples	117,594
# of N/As in On Base Percentage	44,952

Screenshot 24

- b) The **Tabulation** feature allows you to summarize data from a number of columns while grouping them by up to 10 different columns (The default setting for number of summary calculations is 10 and the default setting for the number of groupings is 3. These settings can be changed in the **Set Preferences** window under the **View** dropdown menu.)

The below Screenshot 25 is an example of the **Tabulation** window with some inserted values. You may submit the inputs from Screenshot 25 via the **Submit** button in the top center of the left side of the display. Below in Screenshot 26 is a view of the resulting tabulated table.

Tabulation [?] [↑] [↓] [×]

Select Computed Column Tabulation Cross Tabulation Link Actions

[Submit]

Title (Optional)

What values do you want to use to group the records? (Optional)

Column	Sort
Year	
Team	

Which columns' data would you like to summarize? (Optional) [Grid Icon] [List Icon] [Table Icon]

Column	Type of Summary	Reference Column
Games	sum	
Hits	number of unique values	
Home Runs	sum of squares	At Bats

Screenshot 25

Batting Tabulation

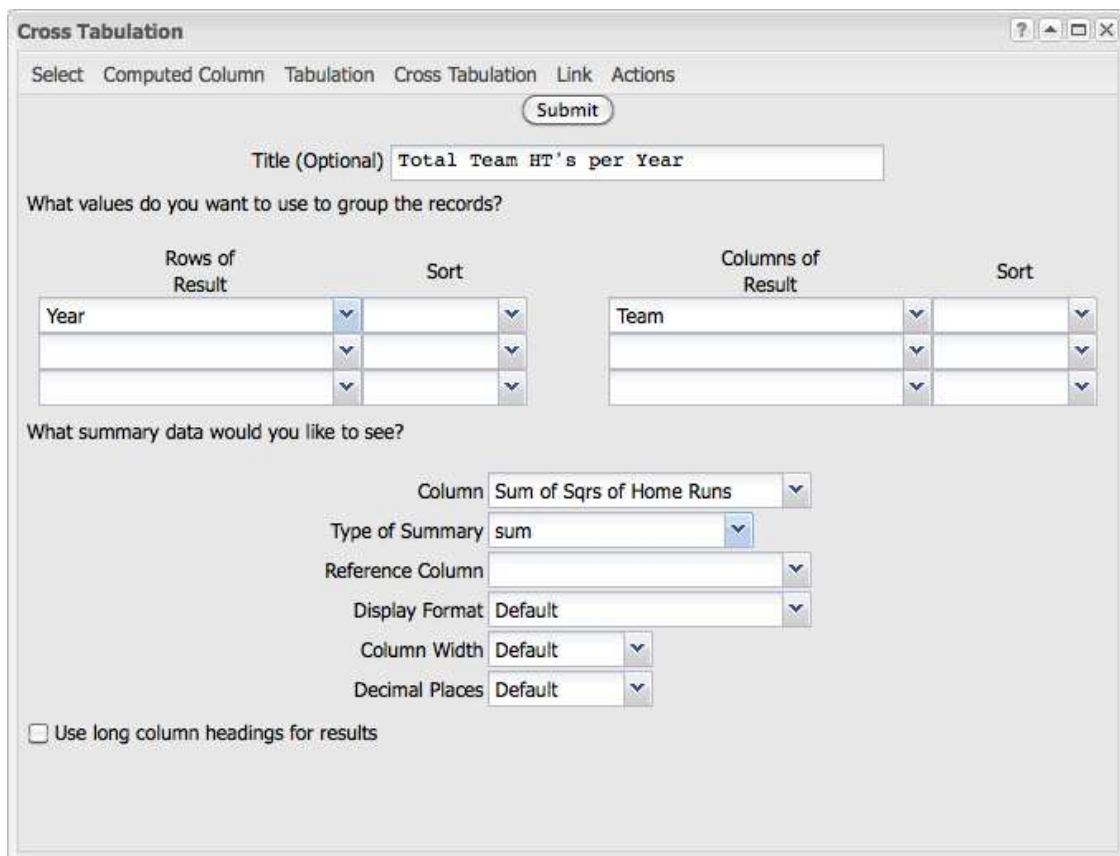
Columns 1-5 of 5, Rows 1-13 of 1,931

Year	Team	Sum of Games	Num of Unique Values in Hits	Sum of Sqrs of Home Runs
		4,078,902	248	3,272,173
1871	MUT	297	11	1
1871	OLY	290	12	10
1871	BOS	282	11	5
1871	ATH	253	12	27
1871	TRO	261	11	20
1871	CLE	261	12	19
1871	CHI	253	10	26
1871	ROK	225	7	5
1871	KEK	174	13	2
1872	BAL	526	9	48
1872	MUT	504	11	4
1872	ATH	424	12	6
1872	BOS	435	9	11

Screenshot 26

The first two columns in Screenshot 26 are fixed columns (as indicated by the yellow line separating the left-most columns from the other columns). **Year** and **Team** are fixed columns because these two columns were chosen to group the summarized data. Without the **Year** and **Team** columns, it would be impossible to discern the true meaning of the tabulation.

c) The **Cross Tabulation** option allows you to group a maximum of 10 rows by a maximum of 10 columns (the default for both groupings is 3, but this can be changed in the **Set Preferences** window under the **View** dropdown menu) and perform summary analysis on a column of data. Below, in Screenshot 27, is an example of the **Cross Tabulation** window. Click the **Submit** button and the resulting cross-tabulated table will appear.



Cross Tabulation

Select Computed Column Tabulation Cross Tabulation Link Actions

Submit

Title (Optional) Total Team HT's per Year

What values do you want to use to group the records?

Rows of Result	Sort	Columns of Result	Sort
Year	▼	Team	▼
	▼		▼
	▼		▼

What summary data would you like to see?

Column Sum of Sqrs of Home Runs

Type of Summary sum

Reference Column

Display Format Default

Column Width Default

Decimal Places Default

Use long column headings for results

Screenshot 27



Screenshot 28 is a depiction of the resulting **Cross-Tabulation**. You can see that the column to the right of the **Year** column is highlighted in gray. 1010data has automatically included a **Row Summary** column and **Column Summary** row, both highlighted in gray. You can see that the **Row Summary** column provides the total home runs hit in a specific year by all teams, and the **Column Summary** row provides the total home runs hit per team over all years. Teams with extremely low totals are likely to have existed for only a short number of years.

Total Team HT's per Year
Columns 1-14 of 63, Rows 1-13 of 129

Team	MUT	OLY	BOS	ATH	TRO	CLE	CHI	ROK	REK	BAL	ATL	MAN	Year
1871	115	1	10	5	27	20	19	26	5	2	0	0	0
1872	83	4	0	11	6	13	0	0	0	48	0	1	0
1873	86	7	0	24	4	0	0	0	0	25	8	0	0
1874	90	11	0	53	14	0	0	6	0	1	1	0	0
1875	114	25	0	53	21	0	0	0	0	0	2	0	0
1876	88	0	0	17	0	0	0	12	0	0	0	0	0
1877	46	0	0	6	0	0	0	0	0	0	0	0	0
1878	45	0	0	2	0	0	0	3	0	0	0	0	0
1879	194	0	0	126	0	16	10	3	0	0	0	0	0
1880	192	0	0	82	0	13	19	6	0	0	0	0	0
1881	240	0	0	7	0	7	15	26	0	0	0	0	0
1882	596	0	0	51	0	28	82	39	0	0	4	0	0
1883	1,146	0	0	180	0	0	24	27	0	0	5	0	0

Screenshot 28

For further details on **Analysis**, please see the [Summarization](#) section in the [General Help Index](#).

Combining Tables

What happens when you have valuable data that you want to analyze, but it resides in more than one table? 1010data offers users the ability to combine data from different tables in two different ways. You may line up data from different tables using a common identifying column, or you may combine all the records of two different tables into one table.

- You may **Link** two tables or worksheets together using a common variable/column to combine the data into one larger table or worksheet. Line up the new table or worksheet intelligently using a common column from either table or worksheet to ensure that the data fields match up appropriately.

Example: If you wanted to figure out whether right-handed batters, left-handed batters, or switch hitters have won more awards, you would do the following:

Step 1) Tabulate a table from the **Awards Table** that shows the total number of awards received by each player, as depicted in Screenshot 3.13. First enter a title for the tabulation. For example, the **Title** should be named **Total # of Awards per Player**. Group the records by the **ID** column. This will cause the tabulation to be computed for each unique ID. To find the total number of awards per player, choose **ID** as the **Column** and the **number of records** option for the **Type of Summary**.

The screenshot shows a 'Tabulation' window with the following configuration:

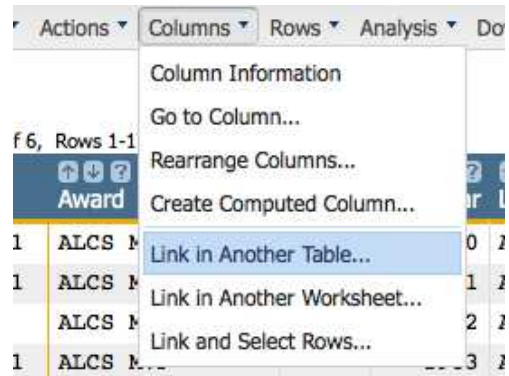
- Title (Optional):** Total # of Awards per Player
- What values do you want to use to group the records? (Optional):**

Column	Sort
ID	Up
- Which columns' data would you like to summarize? (Optional):**

Column	Type of Summary	Reference Column
ID	number of records	

Screenshot 29

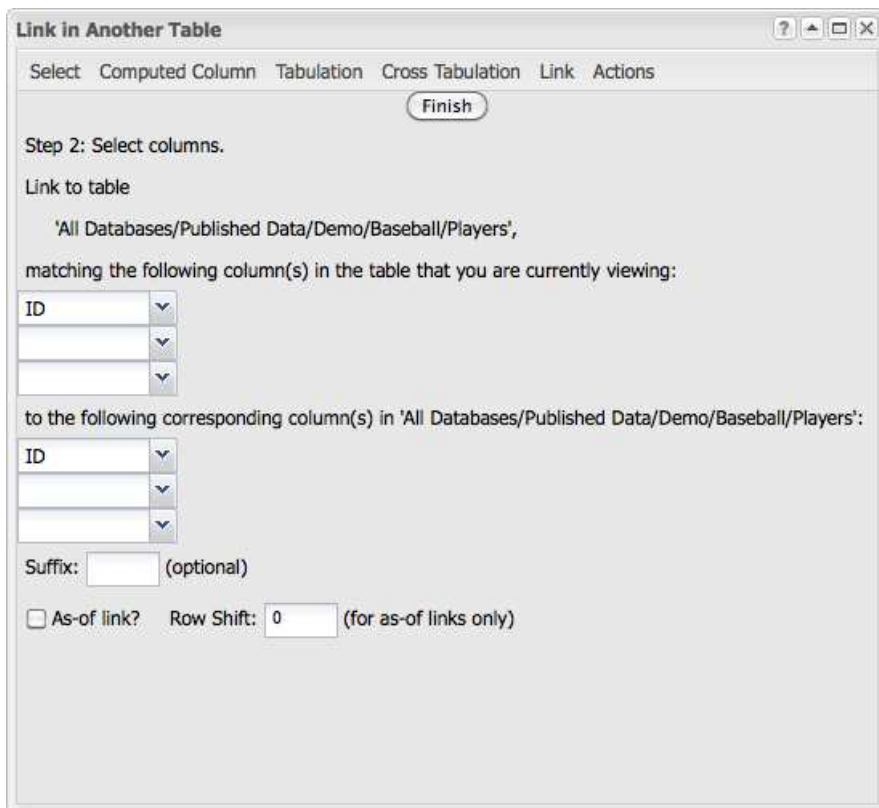
After completing this tabulation, go to the **Column** dropdown menu and select **Link in Another Table** as depicted in Screenshot 30.



Screenshot 30

Step 2) View the **Baseball Folder**, which has a full list of tables to link into the tabulated **Total Awards Table**. Select the **Players Table** because the **Players Table** has a column that shows whether the player bats right handed, left handed, or switch-hits. For this example we will not differentiate between different types of awards (i.e.: pitchers awards will still be counted).

Step 3) Select the common column that you wish to use to link the two tables together. Since **ID** is the only common column, it is the obvious column to use to match up the columns. Screenshot 31 depicts the window used to match up the columns.



Screenshot 31

Step 4) After clicking the **Finish** button in Screenshot 31, the tables are linked as Screenshot 3.15 depicts. The new table contains the columns from the original tabulated **Awards Table** on the left and the columns from the **Players Table** to their right. Now all the columns needed to solve the original problem are together in one table, reducing the problem to a simple tabulation.

The table is linked.

Total # of Awards per Player

Columns 1-10 of 10, Rows 1-15 of 517

ID	Count	Master Last Name	Master First Name	Master Bats	Master Throws	Master Birth Month	Master Birth Day	Master Birth Year	Master Debut Year
1,346									
AARONHA01	4	AARON	HANK	R	R	2	5	1934	1954
AGEETO01	3	AGEE	TOMMIE	R	R	8	9	1942	1962
ALLENDI01	2	ALLEN	DICK	R	R	3	8	1942	1963
ALLEYGE01	2	ALLEY	GENE	R	R	7	10	1940	1963
ALLISBO01	1	ALLISON	BOB	R	R	7	11	1934	1958
ALOMARO01	10	ALOMAR	ROBERTO	B	R	2	5	1968	1988
ALOMASA02	3	ALOMAR	SANDY	R	R	6	18	1966	1988
ALOUFEO1	1	ALOU	FELIPE	R	R	5	12	1935	1958
AMARORU01	1	AMARO	RUBEN	R	R	1	6	1936	1958
ANDERSPO1	2	ANDERSON	SPARKY	R	R	2	22	1934	1959
ANDUJJO01	1	ANDUJAR	JOAQUIN	B	R	12	21	1952	1976
APARILU01	10	APARICIO	LUIS	R	R	4	29	1934	1956
AVERYST01	1	AVERY	STEVE	L	L	4	14	1970	1990
BAGWEJE01	3	BAGWELL	JEFF	R	R	5	27	1968	1991
BAHNSST01	1	BAHNSEN	STAN	R	R	12	15	1944	1966

Screenshot 32

Step 5) Do a tabulation to determine the sum of the **Count** column, which represents the total number of awards for each player, grouped by the **Master Bats** column, as depicted in Screenshot 33. The resulting tabulation is displayed in Screenshot 34.

Tabulation

Select Computed Column Tabulation Cross Tabulation Link Actions

Submit

Title (Optional)

What values do you want to use to group the records? (Optional)

Column	Sort
Master Bats	Down

Which columns' data would you like to summarize? (Optional)

Column	Type of Summary	Reference Column
Count	number of records	
Count	sum	

Screenshot 33

Tabulation on Total # of Awards per Player

Columns 1-3 of 3, Rows 1-4 of 4

Master Bats	Count	Sum of Count
	517	1,346
R	337	881
L	134	336
B	41	123
	5	6

Screenshot 34

You will notice that the **Sum of Count** column represents the total number of awards won and the **Count** column represents the number





of different players that won the awards in the **Sum of Count** column. Screenshot 34 shows that right-handed batters have won the most awards, followed by left-handed batters and then switch hitters. Interestingly, there is a row with no symbol in the **Master Bats** column that has received six awards. It turns out that these six awards were for Manager of The Year. While the award has been given out every year since 1983, only six times has a manager who never played major league baseball won Manager of The Year.

For a more comprehensive look at **Linking**, please review the [Linking](#) section in the [General Help Index](#).

b) Another way to combine information from multiple tables is to **Merge Tables**. A merged table will contain the sum of the number of rows from all tables being merged. Merged tables must have at least one common column. They are virtual tables, and thus they will reflect all changes to the underlying tables. Therefore, if a table is deleted, then the merged table will no longer be accessible; if a table is replaced; the changes are reflected in the merged table. Tables can only be merged and pasted into a folder that you own or have permissions to add to. If you are trying to merge multiple tables from the same folder, it is often faster for you to select multiple tables to merge at one time and paste all selected tables to the clipboard at once; otherwise, you will have to select each table's checkbox individually before pasting it to the clipboard. For detailed directions on how to merge tables, please review the **Merging Tables** guidelines in the [Managing Folders and Tables](#) section of the [General Help Index](#).

Sorting

1010data allows you to sort any table in ascending or descending order. To sort data by a particular column, use the  icon to sort the column in ascending order (up), and the  icon to sort the column in descending order (down). You may sort both numeric and alphanumeric columns. Screenshot 35 provides a picture of the **Batting** table. Although only the first 20 rows are visible, the **At Bats** column data is in descending order by **Year**, which is in ascending order. You may sort by more than one column. In this example, the **At Bats** column is sorted in order for each **Year**; we refer to the **At Bats** column as the “**secondary sort key**.” The **Year** column is the

“primary sort key.”

Batting
Columns 1-17 of 31, Rows 1-15 of 78,881

ID	Year	Team	League	Games	At Bats	Runs	Hits	Total Bases	Doubles	Triples	Home Runs	RBI	Sacrifice Hits	Sacrifice Files	Stolen Bases	Caught Stealing
HATFIJ001	1871	MUT	NA	33	168	41	43	50	3	2	0	22			10	3
PEARCDI01	1871	MUT	NA	33	163	31	44	49	5	0	0	20			0	0
FORCEDA01	1871	OLY	NA	32	162	45	45	62	9	4	0	29			8	0
STARTJ001	1871	MUT	NA	33	161	35	58	68	5	1	1	34			4	2
WATERFR01	1871	OLY	NA	32	158	46	50	65	7	4	0	17			11	3
FERGUB001	1871	MUT	NA	33	158	30	38	46	6	1	0	25			4	4
MILLSEV01	1871	OLY	NA	32	157	38	43	60	6	4	1	24			2	3
BARNERO01	1871	BOS	NA	31	157	66	63	91	10	9	0	34			11	6
MCVEYCA01	1871	BOS	NA	29	153	43	66	85	9	5	0	43			6	0
BIRDSDA01	1871	BOS	NA	29	152	51	46	55	3	3	0	24			6	0
COULDCH01	1871	BOS	NA	31	151	38	43	62	9	2	2	32			6	2
PAITTEDA01	1871	MUT	NA	32	151	31	31	33	2	0	0	13			2	1
CUTHBNE01	1871	ATH	NA	28	150	47	37	63	7	5	3	30			16	2
SCHAFFHA01	1871	BOS	NA	31	149	38	42	59	7	5	0	28			13	4
MCGEAMI01	1871	TRO	NA	29	148	42	39	43	4	0	0	12			20	4

Screenshot 35

If you want to re-sort the data so that the **Hits** column is the **secondary sort key**, click the **sort down** button above the **Hits** column heading followed by the **sort up** button above the **Year** column heading. Screenshot 36 depicts the newly sorted table.

Batting
Columns 1-17 of 31, Rows 1-15 of 78,881

ID	Year	Team	League	Games	At Bats	Runs	Hits	Total Bases	Doubles	Triples	Home Runs	RBI	Sacrifice Hits	Sacrifice Files	Stolen Bases	Caught Stealing
MCVEYCA01	1871	BOS	NA	29	153	43	66	85	9	5	0	43			6	0
MEYERLE01	1871	ATH	NA	26	130	45	64	91	9	3	4	40			4	0
BARNERO01	1871	BOS	NA	31	157	66	63	91	10	9	0	34			11	6
STARTJ001	1871	MUT	NA	33	161	35	58	68	5	1	1	34			4	2
KINGST01	1871	TRO	NA	29	144	45	57	79	10	6	0	34			3	3
WOLTERY01	1871	MUT	NA	32	138	33	51	75	6	9	0	44			1	0
WOODJI01	1871	CHI	NA	28	135	45	51	76	10	6	1	29			18	2
WATERFR01	1871	OLY	NA	32	158	46	50	65	7	4	0	17			11	3
PIKELI01	1871	TRO	NA	28	130	43	49	85	10	7	4	39			3	2
FLYNNCL01	1871	TRO	NA	29	142	43	48	56	6	1	0	27			3	3
EGGLEDA01	1871	MUT	NA	33	147	37	47	60	7	3	0	18			14	3
WHITEDE01	1871	CLE	NA	29	146	40	47	66	6	5	1	21			2	2
REACHAL01	1871	ATH	NA	26	133	43	47	66	7	6	0	34			2	0
BIRDSDA01	1871	BOS	NA	29	152	51	46	55	3	3	0	24			6	0
MALONFE01	1871	ATH	NA	27	134	33	46	58	7	1	1	33			9	3

Screenshot 36

For further examples and details on **Sorting**, please review the **Sorting Rows** guidelines in the [Selecting and Sorting Rows](#) section of the [General Help Index](#).

Chapter 4: Saving

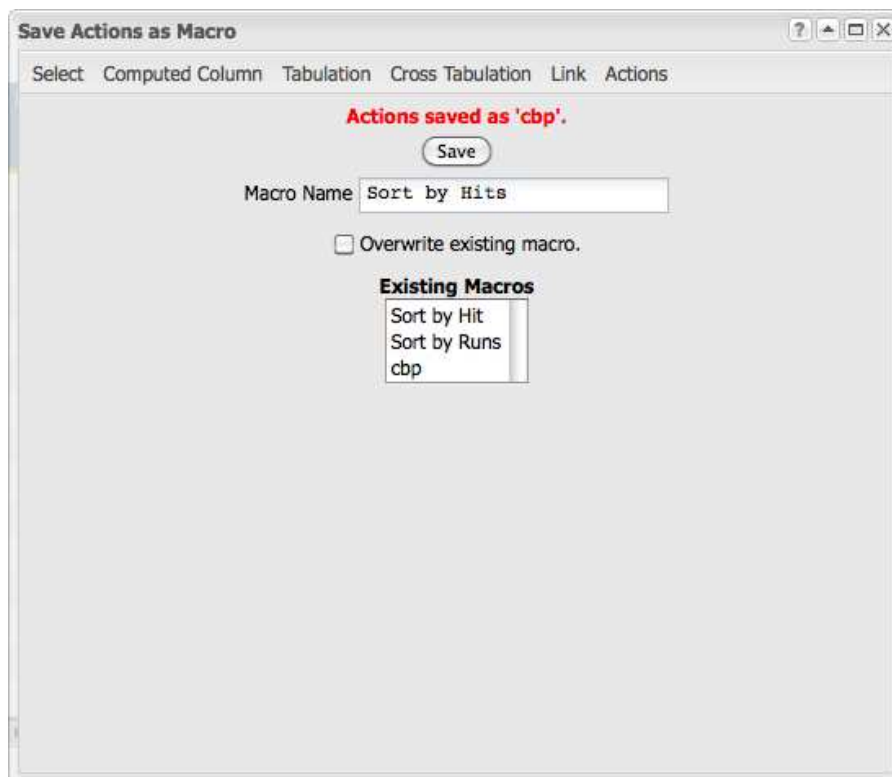
1010data allows you to save work in three different ways. All three features are found under the **File** dropdown menu.

Save as New Table

This option allows you to save the table into the **My Data** folder. Once you save the table, you can access it through the **My Data** folder and perform more operations on it. Saving as a New Table will count towards your total storage limit.

Save Actions as New Macro

This option allows you to save the operations performed on a data set for later use without saving the entire table. You may save multiple Macros per table. You must give each Macro a unique name, as depicted in Screenshot 37.

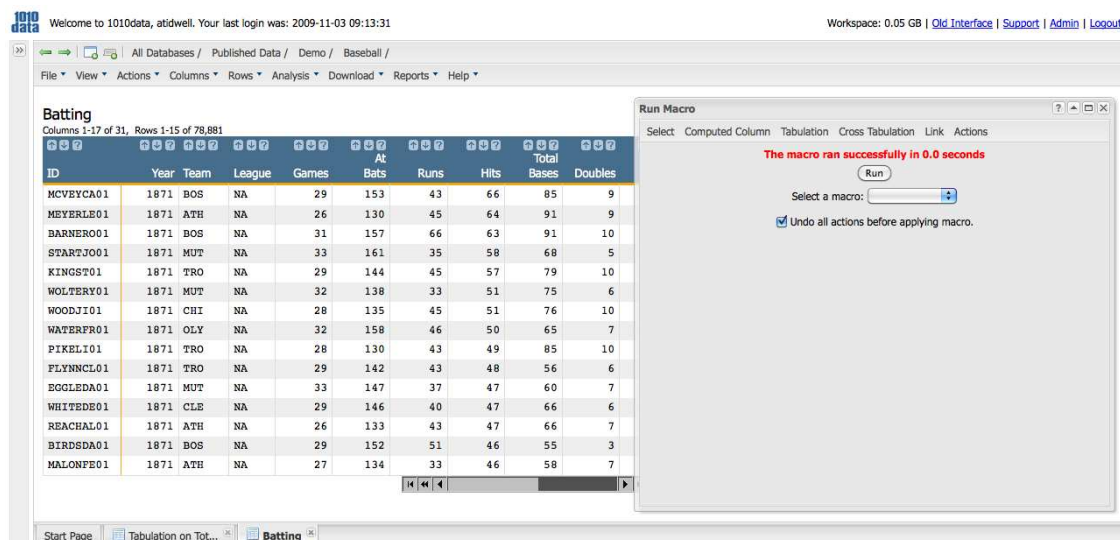


Screenshot 37

Enter a name in the **Macro Name** textbox and click the **Save** button. The words “Sort by Hits” now appear in the **Existing Macros** listbox.

You can open up the raw data set sometime in the future and easily get back to the same point in your analysis. Saving Actions as a New Macro takes up much less available space than Saving Actions as a Table.

To run a saved Macro, open up the table that the Macro was saved to and select the **Run Macro** button under the **File** dropdown menu. A Macro is created on a specific table and saved to that table. The Macro will not run on any other table. Select the name of the saved Macro and click **Run**. Be aware that the more complex the Macro is, the longer it will take to run. In this case, as depicted in Screenshot 38 below, the Macro was so simple that its running time was rounded down to 0.0 seconds.



Screenshot 38

To delete saved Macros, select the **Delete Macro(s)** option from the **File** dropdown menu. Then select which Macro/s to delete from the listbox and click **Delete** to delete the specified Macro/s. For more information on **Macros** please see the [Using Macros](#) section in the [General Help Index](#).



Save as Quick Query

Unlike a Macro, which rigidly performs saved operations and runs on a particular table, a **Quick Query** allows for the dynamic modification of the analytical processes every time the **Quick Query** runs. The **Quick Query** concept allows you to repeat in-depth analytical models on different sets of similar data. Refer to the [Using Quick Queries](#) section of the [General Help Index](#) for descriptions and systematic guidance on **Quick Query** creation and execution.

Chapter 5: Links to Other Topics of Interest

The following list of topics represents some other features that may be of interest to you. This list is intended as a suggested starting point for users to further acclimate themselves to 1010data. This list is not a complete representation of all important and useful features of 1010data. We encourage users who wish to harness the full power and potential of 1010data to read all topics listed in the [General Help Index](#).

- 1) [Uploading Your Data](#)
- 2) [Downloading](#)
- 3) [Viewing, Undoing, and Editing Actions](#)
- 4) [Moving Tables](#)
- 5) [Writing Efficient Queries](#)