

Basics Series-4010

Query and Reporting 1

Version 9.0

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Contents

Workbook	1
Adhoc Reports	1
Report Defaults	1
Auto Format	3
Adhoc Reports Screen	4
Specification Tab	4
Report Definition Tab	7
Querying	7
Query Grid	8
Standard Comparison Operators	9
Operators for Telephone Fields	11
Sorting	12
Sort Order	14
Calculations	14
Lesson 1 Introduction to Reporting	17
Tutorial 1.1 – Create a Simple Report	18
Tutorial 1.2 – Changing the Report Type	23
Tutorial 1.3 – Basic Formatting Options	24
Tutorial 1.4 – Auto-Formatting	25
Lesson 2 Introduction to Query	27
Tutorial 2.1 – Developing Simple Queries	28
Tutorial 2.2 – Trying Other Operators	31
Tutorial 2.3 – Compound Operators	33
Lesson 3 Sorting and Calculating	35
Tutorial 3.1 – Simple Sorting	36
Tutorial 3.2 – Advanced Sorting	38
Tutorial 3.3 – Email Break	40
Tutorial 3.4 – Using Calculations	43

Notes

Workbook

Adhoc Reports

The adhoc report feature is used to create a large variety of user-defined reports and to select and run any of the hundreds of pre-defined reports provided with the product. The reports can be customized as to which records are to be included and which fields from the database are to be printed.

Report Defaults

When a report is first created, a number of settings default to those that have been defined using settings on the Document Settings tabs of the Enterprise Setup process.

The Document Settings tab allows you to specify key settings that are required for report generation. The following settings are defaulted from the settings in this tab but can be overridden at the individual report level.

- Orientation
- Spacing
- Alignment
- Show Gridlines
- Auto Format

The Document Settings tab also allows you to specify the enterprise-wide standard for the fonts used in reports. This helps ensure a standard “look” for documents that is accepted across the enterprise. The only way a user can change that standard on a specific adhoc report is if he is given access to the Design Mode feature in Security Setup (Allow Design Mode check box selected).

Orientation

This is the page orientation for the reports. There are two orientations: Portrait, which means that the page is oriented vertically, and Landscape, which means that the page is oriented horizontally. In Portrait, a document can contain fewer columns across the page, but more lines down page. In Landscape, a document can contain more columns across the page, but fewer lines down the page. This setting has been provided because some companies dictate that all reports should be in one setting or the other. With the default properly set, it will not be necessary to modify each report individually when it is created.

Spacing

This is the spacing to be used between rows on the report. There are five spacing settings ranging from single to triple spacing. Normally, this feature is set so that reports are printed single space. When a report needs to be printed with another spacing, the feature can be activated within the specific report.

Alignment

This is the alignment to be used for the report. There are two alignment settings: left and center.

Show Gridlines

This check box determines if reports are to include gridlines between the rows and columns. Some organizations prefer that all reports include gridlines.

Auto Format

This check box determines if reports are to use the Auto Format feature.

Note: The default settings for font size (but not font name, font style, or font color) and the default settings for orientation are completely overridden by the Auto Format feature. The settings will be made when the report is created, but they are ignored when the report is actually run. If you deactivate the Auto Format feature for the specific report, the settings will be utilized.

Fonts

There are three parts of a report for which the default font settings can be specified: Heading, Body, and Totals. For each of these sections, the following settings can be made.

- Font Name
- Font Style
- Font Size
- Font Color

The font settings for the Heading and the Body can be changed for any report using the Design Mode feature. However, the font setting for the Totals section cannot be changed. Thus, the default settings for the totals are the settings that will be used for totals at all times.

Standardize for Consistency

While it is possible to allow each user to have their own default settings, this is not necessarily advisable. The eventual readers of reports produced by different users will be irritated by variations in format. It is recommended that a set of standard defaults be set and used. If users are not able to adhere to a standard, it is recommended that you disable the user capability to change report font settings. This can be done by clearing the Allow Design Mode check box on the General tab of the Security Setup process.

Four Basic Questions

The creation of a custom report appears to be a complex process, but it is not. In general, creating a custom report is as simple as responding to the following series of questions.

What is the name of the report?

Which records are to be included?

What information is to be listed?

How is the information to be formatted?

To illustrate the simplicity of creating a custom report, here are the answers to the questions listed above for an employee birthday report.

Report Name?	Birthday List
Which Employees?	Those with birthdays between 9-15 and 10-15
What Information?	Employee name and birth date
How to Format?	Birth date order from soonest to latest

When creating an adhoc report, these questions take the form of fields on the Adhoc Reports screen. As the fields are completed, each of the questions is answered. When all of the questions have been answered, a “report specification” exists. This report specification can be used to generate the report immediately. It can also be saved so that the report can be generated at any later time.

A document specification is complete when all four questions have been answered. The differences between a simple report and a complex report are not based on the number of questions answered, but rather on the criteria used to select records and on the formatting. For example, in the simple report described above the employee selection criteria is simply a birth date between 9-15 and 10-15. More complex criteria might be: birth date between 9-15 and 10-15, for part-time employees, in department “Accounting”, at locations “A” and “B”. A more complex format might include alphabetic sorting by last name with totals for each location.

Auto Format

Auto Format is a unique feature within People-Trak that allows adhoc reports to be generated quickly without user intervention. In reports that do not use the auto format feature, column widths, font sizes, and document orientation are determined by the settings in the report. You can only adjust the report by changing these settings. With the auto format feature, column widths, font sizes, and report orientation are automatically calculated for you so that the report will print correctly without the need to change settings. The Auto Format check box allows you to specify whether or not a report is to use the Auto Format feature.

The Process

The auto format process controls three parts of the document format: column widths, font sizes (same for all columns) and orientation. The goal of the auto format process is to stay in portrait orientation, unless your default is landscape, using the largest possible font. If a switch to landscape orientation is required, it will be made automatically and font sizes will be increased until the report fills the available space.

Column Widths

Column widths are normally determined from the field widths set for the data entry screens. In some cases these widths are too great, while in others they are too small. For example, the middle name field is large enough for at least 12 characters (if not customized). If you choose to use a middle initial, the middle name field will always have a very wide column to accommodate a single character. This limits the number of columns you can place on a report or requires you to use Design Mode to narrow the column. With auto formatting, the column widths are determined from the longest data item in that column. Each column is sized just slightly larger than the widest data item. If a single data item in that column happens to be particularly large, the entire column will be sized large enough to contain that data.

Font Sizing

In conjunction with column widths, the font size used for all columns is automatically adjusted in an attempt to use the largest font possible while retaining portrait orientation. Font sizes start at the default size set and are decreased one point at a time to 6 point to determine if the report can be printed in portrait orientation. Each time the font size is changed, the column widths are recalculated and the overall width of the report recomputed. When the overall width of the report fits the space available on the page, the process stops and the report is printed with those column widths in that font size.

Orientation

If a report cannot be made to fit in portrait orientation, the report automatically switches to landscape orientation. The cycle is then started again to determine the largest font size that can be used within landscape orientation. In many cases, the 6-point font that does not fit in portrait orientation will fit as a 7 or 8-point font in landscape orientation.

Note: When using the auto format feature, a report run one day may be formatted differently than the same report run another day. This is because new or modified data in fields included in the report may be wider or narrower than the last time the report was run. In certain instances, the report may switch between portrait and landscape orientation depending on the size of the data and the records included in the report.

Adhoc Reports Screen

The Adhoc Reports screen utilizes three tabs. The Specification tab is used to define basic information about the document. The Query tab contains the standard query grid for determining which records are to be included in the report. The Report Definition tab is used to define the report itself.

Specification Tab

The Specification tab is used to define setup information for your document. This is the equivalent to “Page Setup” in many word processors.

Document Type

The type of adhoc report. This field is supported by the Adhoc Report Type table and contains the valid entries listed below.

- Columnar
- Tabular

When a new report is created, the report type defaults to Columnar. This can be changed at any time. The following samples indicate the difference.

Columnar

Department Name	Full Name Backward	Email
Administration	Cheng, John E.	jcheng@zti.com
Corporate	Brown, Arthur J.	abrown@zti.com
	Healy, Caroline P.	chealy@zti.com
Human Resources	Cannon, Caroline C.	ccannon@zti.com
	Carpenter, Timothy A.	tcarpenter@zti.com
	Matthews, Susan R.	smatthews@zti.com
IT	Lane, Penny W.	parmstrong@zti.com
	Newton, Brice E.	bnewton@zti.com
	Reilly, William O.	wreilly@zti.com
	Van Buren, Jane E.	jvanburen@zti.com

Tabular

Field Name	Value
Department Name	Administration
Full Name	Cheng, John E.
Email	jcheng@zti.com
Department Name	Corporate
Full Name	Brown, Arthur J.
Email	abrown@zti.com

Orientation

The orientation for the report. This field is supported by the Orientation table and contains the valid entries listed below.

- Portrait
- Landscape

When a new report is created, the Orientation is set to the default value defined for the enterprise in the Document Settings tab of Enterprise Setup. This setting can be overridden.

Spacing

The line spacing for the report. This field is supported by the Spacing table and contains the valid entries listed below. The numbers represent lines.

- 1
- 1.5
- 2
- 2.5
- 3

When a new report is created, the Spacing is set to the default value defined for the enterprise in the Document Settings tab of Enterprise Setup. This setting can be overridden. The following samples indicate the difference between single and double space.

Single Space

Last Name	First Name	Middle Name
Adams	Frank	W
Belamonte	Anna	C
Beyer	Frank	A
Bobbs	Stella	Louise

Double Space

Last Name	First Name	Middle Name
Adams	Frank	W
Belamonte	Anna	C
Beyer	Frank	A
Bobbs	Stella	Louise

Alignment

The alignment for the report. This field is supported by the Alignment table and contains the valid entries list below.

- Left
- Center

When a new report is created, the Alignment is set to the default value defined for the enterprise in the Document Settings tab of Enterprise Setup. This setting can be overridden. The following samples indicate the difference.

Left



Zee Technology, Inc.
Alphabetic Employee List

Full Name Backward
Adams, Frank W.
Beyer, Frank A.
Brown, Arthur J.
Cannon, Caroline C.
Carpenter, Timothy A.
Carrington, Julie E.

Center



Zee Technology, Inc.
Alphabetic Employee List

Full Name Backward
Adams, Frank W.
Beyer, Frank A.
Brown, Arthur J.
Cannon, Caroline C.
Carpenter, Timothy A.
Carrington, Julie E.

Show Gridlines

A check box that allows you to specify whether or not the report is to include gridlines between the rows and columns. When a new report is created, this setting is set to the default value defined for the enterprise in the Document Settings tab of Enterprise Setup. This setting can be overridden.

Without Gridlines

Full Name	Pay Rate
Anna C. Belamonte	8450.00
	8435.00
	8360.00
	8350.00
	8300.00
	8250.00
	7000.00
Arthur J. Brown	7500.00
	7000.00
	2550.00
	2500.00
	2200.00
	1700.00

With Gridlines

Full Name	Pay Rate
Anna C. Belamonte	8450.00
	8435.00
	8360.00
	8350.00
	8300.00
	8250.00
	7000.00
Arthur J. Brown	7500.00
	7000.00
	2550.00
	2500.00
	2200.00
	1700.00

Report Definition Tab

The Report Definition tab is used to record the fields that are to be included in the report and to set formatting and calculation options.

Repeat

Also located on this tab is the Repeat check box that allows you to specify whether or not the field name should be duplicated when repeated. For example, if you are listing salary history for employees, the report is easier to read if you specify that the employee name is not repeated. The following samples indicate the difference.

With Repeat Off

Full Name	Pay Rate
Anna C. Belamonte	8450.00
Anna C. Belamonte	8435.00
Anna C. Belamonte	8360.00
Anna C. Belamonte	8350.00
Anna C. Belamonte	8300.00
Anna C. Belamonte	8250.00
Anna C. Belamonte	7000.00
Anna C. Belamonte	7500.00
Anna C. Belamonte	7000.00
Arthur J. Brown	2550.00
Arthur J. Brown	2500.00
Arthur J. Brown	2200.00
Arthur J. Brown	1700.00

With Repeat On

Full Name	Pay Rate
Anna C. Belamonte	8450.00
	8435.00
	8360.00
	8350.00
	8300.00
	8250.00
	7000.00
	7500.00
	7000.00
Arthur J. Brown	2550.00
	2500.00
	2200.00
	1700.00

Querying

Querying is the process of selecting or “filtering” the records to be included in reports, letters, exports, etc. The format for an equation is presented below.

Fieldname Comparison Value

The *Fieldname* is a short phrase that identifies the field from the record to be used for comparison purposes. The *Comparison* is one of the valid operators that determine how the fieldname is to be compared to the value specified. The *Value* is the data for the comparison. A simple example will make this clear.

Gender = *Female*

In this simple equation, the fieldname “Gender” represents the Gender field in the Employee table. The comparison operator is “=”, which means that the value in the record must be equal to the value specified. The value is “Female”, which means that the value in the record must be “Female”. Another example is shown below.

Pay Rate < 20000

This equation filters the records to include only those employees with annual salaries less than 20000 dollars. The equation uses the “Pay Rate” fieldname with the “<” (less than) comparison and the “20000” value.

Query Grid

Query equations are entered within the query grid shown below.

(Field Name	Row Mod	Operator	Contents)	Link

(open paren

When parentheses are used to surround equations, this field is used to enter the open parenthesis symbol. When the open parenthesis symbol is used, the corresponding close parenthesis symbol **MUST** be used in the current equation or in a subsequent equation. Double-click in the field to automatically insert or delete the open parenthesis symbol. Parentheses can be used to determine the order in which the equations are to be evaluated.

Field Name

This is a field from the database. You can enter the field directly (it will be validated) or you can select from fields in the module using the popup button.

Row Mod

The row modifier that determines which rows from multi-row fields are to be included.

Operator

This is one of the valid comparison operators. You can enter the operator directly (it will be validated) or you can select from the table using the popup. The operators that are available are dependent on the type of field specified by the field name. Date fields have a different set of operators than numeric or character fields.

Contents

This is the value that is to be compared to the contents of the field. The data entry characteristics of this field are adjusted to reflect the field represented by the specified field name. If the field name is for a date field, the Contents field will act like a date field. If the field name is for a monetary field, the Contents field will act like a monetary field.

) close paren

When parentheses are used to surround equations, this field is used to enter the close parenthesis symbol. The close parenthesis symbol is only valid if an open (and not yet closed) parenthesis symbol has been previously used. Double-click in the field to automatically insert or delete the close parenthesis symbol. Parentheses can be used to determine the order in which the equations are to be evaluated.

Link

When more than one equation is used, a link operator (AND or OR) must be used to link the equations. This is a table field. You can enter the operator directly (it will be validated) or

you can select from the table using the popup button. A link operator on the last equation is irrelevant. If it is entered, it is ignored.

Standard Comparison Operators

= (equal to)

Requires that the contents of the field match the value entered in order for a record to be included in the report. For example, the comparison might test for Status = Terminated. Only employees with the status "Terminated" are included.

=My (equals value in my record)

Requires that the contents of the field match the value of a field in the user's record to be included in the report. For example, the comparison might test for Department Code =My Department Code. Only records with the same department as the user are included. You don't have to compare the same fields. For example, the comparison might test for City =My Contact 1 City. Only records with the same City as the user's Contact 1 City are included. The record being checked for the user will be either the user's employee record or applicant record, depending on the user's status. If the user is an applicant, only Applicant Management fields can be used in the Contents field comparison; otherwise, only Personnel Management fields can be used.

Contains

Requires that the contents of the field contain the value entered in order for a record to be included in the report. The contents do not have to occur at a specific point in the field. For example, the comparison might test for City Contains CA. Those records with "CA" anywhere in the city would be included (Carson, Santa Monica, and Yucaipa are examples).

Starts

Requires that the contents of the field start with the value entered in order for a record to be included in the report. If the comparison were to test for City Starts CA, only those records with a city starting with "CA" would be included.

Ends

Requires that the contents of the field end with the value entered in order for a record to be included in the report. If the comparison were to test for Last Name Ends son, only those records with a last name that ends with "son" would be included.

> (greater than)

Requires that the contents of the field be greater than the value entered in order for a record to be included in the report. For example, the equation Pay Rate > 20000 could be used to include employees with annual salaries greater than \$20,000.

< (less than)

Requires that the contents of the field be less than the value entered in order for a record to be included in the report. For example, the equation Pay Rate < 20000 could be used to include employees with annual salaries less than \$20,000.

<> (not equal to)

Requires that the contents of the field not match the value entered exactly in order for a record to be included in the report. It is used to exclude employees rather than to include them. For example, the specification that is to only include female employees can use the comparison Gender <> Male instead of Gender = Female. The results are the same.

=> (greater/equal)

Requires that the contents of the field be greater than or equal to the value entered in order for a record to be included in the report. For example, the equation Pay Rate => 20000 could be used to include those employees with salaries greater than or exactly equal to \$20,000.

<= (less/equal)

Requires that the contents of the field be less than or equal to the value entered in order for a record to be included in the report. For example, the equation Pay Rate <= 20000 could be used to include those employees with salaries both equal to and less than \$20,000.

<>ST (not start)

Requires that the contents of the field not start with the value entered in order for a record to be included in the report. If the comparison were to test for City <>ST CA, those records with a city starting with “CA” would be excluded.

<>CN (not contain)

Requires that the contents of the field not contain the value entered in order for a record to be included in the report. The contents do not have to occur at a specific point in the field. For example, the comparison might test for City <>CN CA. Those records with “CA” anywhere in the city would be excluded (Carson, Santa Monica, and Yucaipa are examples).

In

Requires that the contents of the field be one of the items listed in the Contents field. The “In” operator replaces a series of “equal to” equations using the “OR” link such as the following:

Department Code	=	100	OR
Department Code	=	300	OR
Department Code	=	500	OR

with a single, simple query as shown below.

Department Code	In	100, 300, 500
-----------------	----	---------------

Note that the values in the Contents field are separated by commas and a space.

Not In

Requires that the contents of the field not be one of the items listed in the Contents field. This is the converse of the “In” operator. The “Not In” operator replaces a series of “not equal to” equations using the “AND” link such as the following:

Department Code	<>	100	AND
Department Code	<>	300	AND
Department Code	<>	500	AND

with a single, simple query as shown below.

Department Code	Not In	100, 300, 500
-----------------	--------	---------------

Between

Requires that the contents of the field be between the range defined by the two fields in order for a record to be included in the report. The “Between” operator uses a single equation rather

than two equations and a link. For example, to create a query that limits the employees to those with a hire date between 10-13-2007 and 10-31-2007, use the equation shown below.

Hire Date Between 10-13-2007 AND 10-31-2007

The equation above actually replaces the pair of equations shown below.

Hire Date >= 10-13-2007 AND
Hire Date <= 10-31-2007

The Between operator can also be used with Date Variables as shown below.

Hire Date Between THIRTY-DAYS-BACK AND TODAY

The Between operator is not limited to date fields. It can be used with any field type. To query on a range of ages, use a query similar to the one shown below.

Age Between 21 AND 25

To query on a range of names, use a query similar to the one shown below.

Last Name Between Ames AND Cochran

Outside

Requires that the contents of the field be outside the range defined by the two fields in order for a record to be included in the report. The “Outside” operator uses a single equation rather than two equations and a link. For example, to create a query that excludes employees with hire dates between 10-13-2007 and 10-31-2007, use the equation shown below.

Hire Date Outside 10-13-2007 AND 10-31-2007

The equation above actually replaces the pair of equations shown below.

Hire Date < 10-13-2007 AND
Hire Date > 10-31-2007

The Outside operator is not limited to date fields. It can be used with any field type. To create a query that excludes an age range, use a query similar to the one shown below.

Age Outside 21 AND 25

To create a query that excludes a name range, use a query similar to the one shown below.

Last Name Outside S AND T

Operators for Telephone Fields

Three operators have been provided for the three parts of telephone number fields. You can use these operators to compare the specific portion of a telephone number to the desired value. For example, if you wish to list those employees with a telephone number within a given area code, you could use the equation shown below.

Home Phone *AreaCode* 714

AreaCode

Requires that the contents of the area code portion of a telephone number field contain the value entered in order for a record to be included in the report. The area code portion of a telephone number is assumed to be the first three digits of the telephone number.

Prefix

Requires that the contents of the prefix portion of a telephone number field match the value entered in order for a record to be included in the report. The prefix portion of a telephone number is assumed to be digits 4 through 6.

Suffix

Requires that the contents of suffix portion of a telephone number field match the value entered in order for a record to be included in the report. The suffix portion of a telephone number is assumed to be the last four digits.

Sorting

When a field is first selected, the sort type is set to None. You can specify sorting for more than one sort field. The sort order is determined by the order in which the fields appear in the report definition grid. Sort fields at the top of the grid sort first. If you wish to print a field later in a report that you wish to use for sorting earlier in the report, enter the field twice. The first time, clear the Print check box so that the field is not printed. Then set the sorting as required. On the second occurrence of the field, set the field to print, but not sort. The five valid sorting values are defined below.

None

This sort type is used to prevent sorting. Sorting is not required and sorting is usually not performed on every field in a report. When a field is first selected, the “None” sort type is specified. When records are printed with no sort, they are printed in the order in which they were retrieved from the database. In most cases, this is the order in which the records were originally keyed.

Sort

This sort type is used to sort a column without performing a break. This sort type is useful in simple reports that do not involve historical data or calculations. When you sort without a break, there is no visible change when a new sort occurs. For example, if you are sorting on the Department Code field in ascending order and 100 changes to 200, there will be no blank line between the rows and there is no subtotalling performed. The report sample below shows a simple sort on both the Department Code and Full Name Backward fields.

Department Name	Full Name Backward
Administration	Cheng, John E.
Corporate	Brown, Arthur J.
Corporate	Healy, Caroline P.
Human Resources	Cannon, Caroline C.
Human Resources	Carpenter, Timothy A.
Human Resources	Matthews, Susan R.
IT	Lane, Penny W.
IT	Newton, Brice E.
IT	Reilly, William O.
IT	Van Buren, Jane E.

Break

This sort type is used to sort a column while performing a break when a new sort occurs. It should be used whenever you wish to indicate that a sort has changed and when you wish to perform sub-totals when the value of the field changes. The report sample below shows a sort with a break.

Department Name	Full Name Backward
Administration	Cheng, John E.
Corporate	Brown, Arthur J.
Corporate	Healy, Caroline P.
Human Resources	Cannon, Caroline C.
Human Resources	Carpenter, Timothy A.
Human Resources	Matthews, Susan R.
IT	Lane, Penny W.
IT	Newton, Brice E.
IT	Reilly, William O.
IT	Van Buren, Jane E.

Eject

This sort type is used to sort a column while performing a page eject when a new sort occurs. It should be used whenever you wish to start a new page with each break and when you wish perform subtotals on each page.

Email

This sort type works just like the Eject sort type. However, it also activates the “email by break” feature. With this feature, if you send email, the emails are broken into sections by the break. Each recipient will receive those pages that belong to that recipient. For example, if you Email break by a manager email field, each manager is emailed only those pages that belong to that manager.

Multiple Sorts

You can specify sorting for more than one field. When you do, the order in which the columns are sorted are determined by the order in which the fields appear in the grid. To sort an employee salary history report by salary date within employee name, enter the report definitions as follows.

<i>Full Name</i>	<i>Break</i>	<i>Ascending</i>
<i>Salary Date</i>	<i>Sort</i>	<i>Descending</i>
<i>Pay Rate</i>	<i>None</i>	

Note that the Pay Rate field does not need a sort. It simply follows the descending sort established by the salary date field. The only reason you would need to sort by Pay Rate in this report would be if there were multiple pay rates on the same date for each employee. This would be highly unlikely.

If this report is to be produced so that each employee is on a separate page, switch the sort on Full Name from Break to Eject as shown below.

<i>Full Name</i>	<i>Eject</i>	<i>Ascending</i>
<i>Salary Date</i>	<i>Sort</i>	<i>Descending</i>
<i>Pay Rate</i>	<i>None</i>	

Using a Phantom Sort Field

If you wish to print a field later in a report that you wish to use for sorting earlier in the report, enter the field twice. The first time, clear the Print check box so that the field is not printed. Then set the sort type and sort order as required. On the second occurrence of the field, set the field to print, but not sort.

Sort Order

When a sort type is first selected, the sort order is set to Ascending. You can mix sort orders as desired. For example it is possible to sort pay history in descending order by salary date (newest salary first) within a list of employees sorted alphabetically in ascending order.

If the field is being used for sorting, this field is used to specify the sort order. This field is supported by the Sort Order table that contains the two valid entries listed below.

Ascending

Sort alphabetically from A to Z or Sort numerically from 1 to 10

Descending

Sort alphabetically from Z to A or Sort numerically from 10 to 1

Calculations

For fields used for printing, sorting or both, this field is used to specify the calculations to be performed. This field is supported by the Calculation table and contains the valid entries listed below. There is a difference between counts and totals. A count simply counts the number of occurrences of each item. A total sums the numeric values of each item.

Average

This calculation type is used to take an average of the records in each break and the overall average for each record included in the report. For example, if you take the average on the Age field that is broken by the Department Code field, the report will list the average age for each department and the overall average age for every employee included in the report.

Count

This calculation type is used to count the number of records within a break and within the overall report. For example, if you take a count on the Full Name field that is broken by the Department Code field, the report will list the number of employees in each department and the overall number of employees included in the report.

Maximum

This calculation type is used to list the highest value within a break and within the overall report. For example, if you take the maximum on the Age field that is broken by the Department Code field, the report will list the highest age in each department and the overall highest age for every employee included in the report.

Minimum

This calculation type is used to list the lowest value within a break and within the overall report. For example, if you take the minimum on the Age field that is broken by the Department Code field, the report will list the lowest age in each department and the overall lowest age for every employee included in the report.

Percent Count

This calculation type is used to calculate the percentage of the count of the number of records within a break. For example, if you do a percent count calculation on the Full Name field that is broken by the Department Code field, the report will list the percent of the total count for each department.

Percent Total

This calculation type is used to calculate the percentage of the total (sum) of the numeric values within a break. For example, if you do a percent total calculation on the Pay Rate field that is broken by the Department Code field, the report will list the percent of the total salary burden for each department.

Total

This calculation type is used to total (sum) the numeric values within a break and within the overall report. For example, if you take a total on the Pay Rate field that is broken by the Department Code field, the report will list the total salary burden for each department and the overall salary burden for all employees included in the report.

Multiple Calculations

Multiple calculations can be included in any report and the calculation types do not need to be the same. For example, you may wish to create a report that both counts the employees and totals the salaries in each department. This example would use the report definition lines below.

<i>Department Code</i>	<i>Break</i>	<i>Ascending</i>	
<i>Full Name</i>	<i>Sort</i>	<i>Ascending</i>	<i>Count</i>
<i>Pay Rate</i>	<i>None</i>	<i>Total</i>	

It is also possible to perform multiple calculations on the same field. For example, you may wish to create a report that provides both the average salary and the total salary for each department. This example would use the report definition lines below.

<i>Department Code</i>	<i>Break</i>	<i>Ascending</i>
<i>Pay Rate</i>	<i>None</i>	<i>Average</i>
<i>Pay Rate</i>	<i>None</i>	<i>Total</i>

Totals Only Reports

There will be occasions when you wish to produce reports that list totals only and no detail. This is quite simple. In the report sample shown above, turn printing off for each of the three fields. No detail will be printed, but the totals will be printed for each department and for the overall report.

Notes

Lesson 1

Introduction to Reporting

Contents

Tutorial 1.1 – Create a Simple Report	18
Tutorial 1.2 – Changing the Report Type	23
Tutorial 1.3 – Basic Formatting Options	24
Tutorial 1.4 – Auto-Formatting	25

This lesson covers how to create a simple adhoc report as well as change the report type and formatting options on the report.

Tutorials

Create a Simple Report: demonstrates the technique used to create a simple report. This includes selecting fields and using compound fields.

Changing the Report Type: shows how to change the report type from the columnar format to the tabular format.

Basic Formatting Options: demonstrates how to manipulate a report by changing the orientation, spacing, and gridlines settings.

Auto-Formatting: shows how the auto-formatting feature works.

Tutorial 1.1 – Create a Simple Report

The adhoc report feature is used to create a large variety of user-defined reports and to select and run any of the hundreds of pre-defined custom reports provided with People-Trak. For each adhoc report, you can specify which records are to be selected from the database (the query) and which fields from those records are to be printed (the report definition). We will take a look at the query a bit later. For now, we will just work with the report definition. Let's create a simple adhoc report.

1. Start People-Trak by double-clicking on the **People-Trak Trainee** icon on your desktop (or as instructed).

The Select Product Option screen is displayed.

2. The **Position Control** and **Attendance** options should be the only options that are toggled on. If not select the **Training** button to select them.
3. Click **OK**

The Login screen is displayed.

4. In the **User ID** field, enter **DEMO**.
5. In the **Password** field, enter **DEMO**.

The Organizer desktop is displayed with the Personnel Management module selected.

Let's create an adhoc report.

6. On the **Documents** menu, select **Adhoc Reports**.

The Explorer for Adhoc Reports is displayed. The Explorer categories are listed on the left and the adhoc reports in the highlighted category are listed on the right. The All Adhoc Reports category listed at the top of the categories allows you to see all adhoc reports in the current module, in alphabetical order.

7. Click on the **General** category.
8. On the **File** menu, select **New Adhoc Report** or on the Tool Bar click the **New Adhoc Report** button to create a new document.

The Adhoc Reports screen is displayed.

9. In the **Document Name** field, enter **Test Report**.

The Explorer Category is General because we selected the General category in the Explorer before creating this report. You can change the Explorer Category to any category you want. You can create an unlimited number of different explorer categories.

10. Leave the **Explorer Category** as **General**.

The next field is Category, which is the category that is used throughout People-Trak to secure items as well as specify where the item should be shown in the Categories pane of the Organizer desktop. When you create a document, this is defaulted to User but can be changed to any pre-defined category.

11. In the **Category** field, click the popup button.

The Select Category screen is displayed with a list of the valid categories. The category for the adhoc report must be one of these. You cannot define your own category.

12. Select **Personal** and click **OK**.
13. Click the **Report Definition** tab.

The Report Definition tab uses a grid to collect the fields on which you wish to report. Each row in the grid defines a column in the report. Let's start defining columns now.

The first thing we need to learn is how to select fields. There are two ways. You can enter the name of the field if you know it, or you can select the field from the Select Field screen. In the beginning, the Select Field screen is much easier because you will not know the names of the fields from memory. Later you may find that you do remember many of the field names, and you will be able to simply key them in. For now, let's select a field the easy way.

14. In the **Field Name** column, click on the popup button.

The Select Field screen is displayed. The Select Field screen contains two lists. The list on the left displays all the categories for each field. When you select a category, the corresponding list on the right displays the fields that are associated with that particular category. Additionally, if you scroll to the very top of the category listing you will see one entitled All Fields. If you highlight this option, the list on the right contains all the searchable fields in the current module, listed alphabetically.

15. Select the **Personal** category.
16. Locate the **First Name** field in the list on the right and double-click on the field (or highlight it and click **OK**) to select the field.

When the Select Field screen closes, the field name selected is returned. In addition, the Print and Repeat columns are checked and the Sort Type column is set to None. These settings are defaults and can be overridden when necessary.

It may be surprising, but this simple selection of a field constitutes a report.

17. On the **File** menu, select **Run Adhoc Report** or on the Tool Bar, click the **Run Adhoc Report** button to run the report.

The report you have created will be shown in the Document Viewer. The report will be a simple list of the first names of all employees in the company.

Now let's expand our report.

18. Close the **Document Viewer**.

The changes you made are no longer in the modified color. This is because all documents are saved before they are run.

19. On the second row, use the **Field Name** popup button to add the **Last Name** field to the report. You can find **Last Name** in either the **All Fields** or **Personal** category.

20. Run the report again.

Now we have a first and last name report for all employees in the company.

21. Close the **Document Viewer**.

Note: The reports that we are learning about in this lesson will always contain all of the employees because we are not entering query equations on the second tab. In this lesson, we are learning to determine what information will be shown in a report. In the next lesson, we will learn how to determine which records will be included in the report.

22. Use the **Field Name** popup button to add the following five **Field Names** from the **Personal** category to our ever-improving report: **Address 1, Address 2, City, State and Zip Code**. Be sure to select the three separate fields for **City, State and Zip Code** for now.

23. Now run the report.

We now have a name and address report for all the employees in the company. Note that the order in which the fields are entered from top to bottom in the grid is the order in which the fields are listed as columns across the top of the report.

24. Close the **Document Viewer**.

Now, let's learn about compound fields. Compound fields are fields that are created for you by People-Trak, and you do not enter directly. For example, there is a Full Name field. You do not enter data in the Full Name field. It is compounded for you from the First Name, Middle Name (just the initial), and Last Name fields. Compound fields can be used in reports just like any other field, and they are very, very useful. Let's modify our name and address report to use these fields and learn a new trick along the way.

25. In the first field, which currently is **First Name**, click the popup button. In the list of field categories, select the **Personal** category, if you are not already in that category.

26. In the list of fields on the right, scroll down until you can see the **Full Name** field.

Compound fields are listed in categories just like regular fields. They are also included in the All Fields listing. You could select Full Name from this list, but let's see yet another way to choose Full Name.

27. Close the **Select Field** screen, without making a selection.

Up until now, you have been directed to use the popup button to make your selection. If you know the name of your field, it can be faster to just type in the field name directly. When you do that and there are multiple fields that start with the text you entered, you are asked to select which field you want. Let's see how this works.

28. Change the first field from **First Name** to **Full Name** by clearing the field and then typing in **Full Name**.

A Select Field screen is displayed because there is more than one field that starts with the text "Full Name".

29. Select **Full Name** from the list.

We don't need the Last Name field on the report anymore since it is included in the Full Name compound field. So, let's delete it.

30. Click anywhere on the row containing the **Last Name** field.
31. On the Tool Bar, click the **Delete Row** button to delete that row.
32. Run the report.

Note that the combined full name makes this report easier to read.

33. Close the **Document Viewer**.

There is another compound field that is even more useful in reporting. This is the Full Name Backward field.

34. Change the **Full Name** field to the **Full Name Backward** field using whatever method you choose.
35. Run the report.

The Full Name Backward field provides a combination of the First Name, Last Name, and Middle Name fields in a format that is frequently used: the Last Name comes first, followed by a comma and space, the First Name followed by a space, and then the first letter of the Middle Name followed by a period. Our name and address report is getting better by the minute.

36. Close the **Document Viewer**.
37. To further simplify the report, delete the rows containing the **City, State, and Zip Code** fields and add the **City, State Zip** compound field that contains all three values.
38. Run this version of the report and you will see a very clean name and address report.

The City, State Zip compound field is very useful when creating mail merge labels and letters. It is also useful when creating address lists such as this. For other reports, such as a carpool report that needs to isolate these fields, you would use them separately.

39. Close the **Document Viewer**.

Thus far, all of the fields in our report have been taken from the Personal screen, which is assigned to the Personal category, or are fields compounded from those Personal fields. This is not a limitation. You can select any combination of fields from any screen that you desire. We'll show this as the last step in this tutorial.

40. In the first available row of the report definition, click the popup button in the **Field Name** column. Select the **Status** category in the listing on the left, and then select the **Employment Status** field in the listing on the right.
41. On the next row, use the same procedure to add the **Pay Rate** field from the **Compensation** category.
42. Run the report.

All of the fields are listed just as before. There is a lot of "stuff" going on behind the

scenes to make this easy, but you do not need to know about that. All you need to do is select the fields you wish to report on.

43. Close the **Document Viewer**.
44. Delete the **Pay Rate** field from the report.

This report is used in the next tutorial.

45. Continue with the next tutorial.

Tutorial 1.2 – Changing the Report Type

Because the last tutorial was so long, we will make this one short. Here's how to change the format of the report from columnar to tabular.

1. Click the **Specification** tab and click in the **Document Type** field.

The field should indicate Columnar. When we created our test report, we did not directly specify this type of report. It is a default because it is the type of report you will create the most often. There are other defaults as well, some of which you can change. We will look at those in the next tutorial. A table supports the Document Type field, but there are only two document types: Columnar, which you have been using, and Tabular.

2. Use the popup button to change the **Document Type** to **Tabular**.
3. Run the report in tabular format.

Note that all of the same fields are present, but that there is a sort of “mini-report” for each employee. The fields are oriented vertically in a stack rather than horizontally in columns. This is a tabular report. You can switch documents between types whenever you want.

Tabular reports work best when you have more fields than can stretch across the paper horizontally. You can list a lot more fields vertically, but a report with a large number of employees will take a lot of paper. The decision to use either report type is yours based on your needs.

4. Close the Document Viewer.
5. Change the **Document Type** back to **Columnar** and run the report again.

Now the report is restored to its original glory.

6. Close the **Document Viewer**.
7. Continue with the next tutorial.

Tutorial 1.3 – Basic Formatting Options

There are other basic formatting options that you can set on the Specification tab. The Orientation, Spacing, Alignment, Show Gridlines and Auto Format settings default to their associated settings in Enterprise Setup. In this tutorial, we will take a look at three of those settings.

1. Click in the **Orientation** field.

The field should indicate Portrait, because that is the Default Orientation setting in Enterprise Setup. In Portrait orientation, the page is oriented vertically. In Landscape orientation, the page is oriented horizontally.

2. Use the popup button to change the orientation of our report from **Portrait** to **Landscape** and run the report.

You may not see much of a difference, but there should be more white space to the right of the report. Landscape orientation is useful when you have a lot of fields to print and you do not want to reduce the font size to something only an ant could read. However, with Landscape orientation, you get fewer lines per page and thus the report will be longer.

3. Close the **Document Viewer**.
4. Change the **Orientation** back to **Portrait**.
5. In the **Spacing** field, use the popup button to select **Double** and then run the report.

In double-space mode, you can see that there is a lot more space between the rows. This is a popular feature when reports are submitted for review and editing. Coupled with the landscape feature, you can produce reports with lots of white space for annotation. Of course, if the rows take up twice as much space, the report will require twice as much paper.

6. Close the **Document Viewer**.
7. Now, select the **Show Gridlines** check box and run the report.

Gridlines are now inserted between the rows and columns.

Many users grow accustomed to Excel and the gridlines feature causes People-Trak reports to emulate Excel-style reports. Our current report is a simple report and may or may not look better with gridlines. With the more complex reports that we will produce later, gridlines can be very, very helpful in making reports easier to read.

8. Close the **Document Viewer**.
9. Set **Spacing** back to **Single** and clear the **Show Gridlines** check box.
10. Continue with the next tutorial.

Tutorial 1.4 – Auto-Formatting

The auto-format feature allows you to create reports without regard to formatting and column sizing issues. This is what happened when we created our test report. We just selected fields and let auto-formatting take over. Let's run the report again and make an observation.

1. Run the report.

Note the width of the columns, particularly the Address 2 column. With auto-formatting turned on, columns are automatically sized to be just wider than the longest field or header in that column. In general, the Address 2 field is short, so the column is narrow.

2. Close the **Document Viewer**.
3. Clear the **Auto Format** check box and run the report again.

The document is displayed with only part of the data showing. Note that suddenly the Address 2 column is very wide, much wider than the typical data item. With auto-formatting turned off, column widths are fixed to the length of the field used on the data entry screens. If the field is two inches wide on the screen, it will be two inches wide on the report.

4. Close the **Document Viewer**.
5. Select the **Auto Format** check box.
6. On the **Report Definition** tab, add the **Address 1** field to the end of the report. Run the report.

As the report grows, the font size is reduced as auto-formatting tries to make the report fit in portrait orientation.

7. Close the **Document Viewer**.
8. Add another three **Address 1** fields to the end of the report. Run the report. Use the **View** dropdown to select **Whole Page**, so you can see the current orientation more easily.

The report is now in landscape orientation. When the report cannot fit in portrait, auto-format switches the document to landscape and then starts the font sequence again.

9. Close the **Document Viewer**.
10. Add the **Address 1** field five more times to the end of the report. Run the report.

The document is displayed in a very small font with only part of the last field showing. The minimum font size (6 point) has been reached and the data cannot all fit on the report.

11. Close the **Document Viewer**.
12. Remove the last two **Address 1** fields.

Because of the orientation switch, the orientation setting on the Specification tab is irrelevant when auto-formatting is active. However, the other settings do work. You can double-space and show gridlines with auto-formatting turned on.

13. On the **Specification** tab, select **Double** for **Spacing** and select the **Show Gridlines** check box. Run the report.

14. Close the **Document Viewer**.

There are other features that will allow you to control the formatting of a report, but that is the content of another lesson.

15. Close the **Adhoc Reports** screen.

16. Close the **Explorer**.

17. This concludes this tutorial and lesson.

Lesson 2

Introduction to Query

Contents

Tutorial 2.1 – Developing Simple Queries	28
Tutorial 2.2 – Trying Other Operators	33
Tutorial 2.3 – Compound Operators	35

This lesson introduces the concept of query equations that are used to select records for us in documents and lookups.

Tutorials

Developing Simple Queries: demonstrates how to create and use simple query equations in the production of an adhoc report. All equations use the basic “=” operator.

Trying Other Operators: shows how to use all of the non-compound operators.

Compound Operators: shows how to create equations using the compound operators “Between” and “Outside”.

Tutorial 2.1 – Developing Simple Queries

In the last lesson, we learned how to create a simple report by defining what fields to include on the report. Now, we are also going to specify which records to include on the report. This is known as a “query”.

1. On the **Documents** menu, select **Adhoc Reports**.
2. Create a new **Adhoc Report**.
3. Give your new report the name **Test Query**.
4. Click the **Report Definition** tab and select the following three fields in the order shown:

Last Name

Gender

Age

5. Click the **Query** tab and run this simple report without any type of query.

When the report is displayed, you will see the Last Name, Gender, and Age for every employee.

6. Close the **Document Viewer**.
7. Enter the following query equation, as described below:

Gender = **Female**

Gender is a field name and should be entered in the Field Name column. “=” is an operator and should be entered in the Operator column. Female is the contents we are comparing and should be entered in the Contents column. We will not be using the “(”, “)”, Link, or the Mod columns for this example. Simply leave these blank.

8. Run the report.

The list of employees you saw before has now been reduced. Only those employees with the phrase Female in the Gender field are listed. You can validate this by looking at the Gender column on the report and by checking the number of records. That is a simple query. You have effectively stated “list the last name, gender, and age for those employees with ‘Female’ in the Gender field”.

9. Close the **Document Viewer**.

Note: From this point on, the “Close the Document Viewer” step will usually be assumed after running a report and viewing the results. The step will still occur when wrapping up a tutorial or where clarification is needed.

10. Change the query to look for males and run the report.

Note how the report has changed. Only the males should be listed.

Let’s try some other options based on the Last Name field.

11. Change the query to the following and run the report.

Last Name = Wilson

There are two employees with a Last Name of Wilson, so the two employees are listed.

12. Change the **Contents** portion of the query to **Stern** and run the report.

There is only one employee named Stern and thus only one employee should be listed.

13. Now change the **Contents** to **Bogus** and run the report.

There is no employee with the last name Bogus, and the following message is displayed:

No records qualified

There are plenty of employees in the company, but there are no employees with the last name Bogus. Thus far, we have used Query fields that are also included in the Report Definition tab, but that is not required. We have chosen these fields because it is easier to validate the results of the query. Let's try a query that does not use one of the fields in the Report Definition tab.

14. Change the query to the following and run the report.

First Name = Donald

The report indicates that there is only one employee that meets the criteria: Donald Stern. You have seen Donald Stern many times, but are there others employees with Donald as their first name? You can either trust the query or you can add the First Name field to the Report Definition tab and confirm it yourself.

In some queries, you may wish to look for fields that do not contain a value.

15. Clear the **Contents** field completely and run the report again.

The following message is displayed:

No records qualified

No records have a blank First Name field. There are a number of records, however, that have a blank Other ID field.

16. Change the query to the following and run the report.

Other ID =

You should see a list of the employees who have nothing in the Other ID field.

When you are entering the Contents portion of a query equation, the Contents field assumes the editing attributes of the field identified by the Field Name. For example, if the field specified is the Hire Date field, the Contents field will assume that a date should be entered. Try this now.

17. Change the **Field Name** to **Hire Date**.

18. Click in the **Contents** field.

Note that the Date and Date Variable popup buttons are now adjacent to the field.

19. Enter an invalid date such as **33-33-3333** and try to run the report.

The invalid date is rejected.

20. Now change the **Field Name** to **City** and then click in the **Contents** field.

Note that there is a table popup button adjacent to the field.

21. Click on the button to see a list of the cities in the **City** table.

You can use the corresponding tables to support data entry in a query.

Numeric fields are also validated for length and format.

22. Change the **Field Name** to **Pay Rate** and try to enter an alphabetic character.

This will not be allowed.

23. Try a rate such as **99.99999** and then press **TAB**.

Since the Pay Rate field cannot accept five digits to the right of the decimal point, the value is adjusted.

Even with all of these validation features, you can still create invalid queries. The most popular method is to set the field, enter a valid formatted entry for the contents, and then change the field name. In this way, you can create an equation such as “Hire Date = Donald”. This invalid query will be trapped when you attempt to run the report. Try it now.

24. Clear the **Field Name**. Change the **Contents** to **Donald**. Then return to the **Field Name** and set the field to **Hire Date**. Now run the report.

The following message is displayed:

Query Error at Row: 1- Column: 3

Field and contents are not compatible

There are a number of features that trap invalid equations. If an invalid equation does get through the process, however, the result will usually be that no records qualify for the report. In our example, if the query Hire Date = Donald was able to run; there would be no records that meet the criteria.

25. Continue with the next tutorial.

Tutorial 2.2 – Trying Other Operators

All of the examples in the previous lesson have used the “=” operator. There are actually a wide variety of operators that you can use in your query equations. This lesson will explore many of these operators.

The Contains operator is used to find records where the field specified contains the contents somewhere.

1. Enter the equation shown below and then run the report:

Last Name Contains ils

At first glance, this query seems odd, but it returns all the records that have the three characters ils somewhere in the Last Name. This includes two Wilsons and one Pilsner.

2. For the inverse query, change the **Operator** to <>CN and then run the report, which now lists those records that do not contain **ils** in the **Last Name**.

The Starts operator is used to find records where the field specified starts with the phrase specified in the Contents.

3. Enter the equation shown below and then run the report:

Last Name Starts S

This equation returns every record that has a Last Name starting with S. You are not limited to a single character.

4. Enter the equation shown below and then run the report:

Last Name Starts Carrington

There is a record that starts with this phrase. The inverse Operator of Starts is <>ST. This will find all of the records that do not start with this phrase.

The Ends operator is used to find records where the field specified ends with the phrase specified in the Contents.

5. Enter the equation below and then run the report:

Last Name Ends son

The report lists all employees with a Last Name ending in “son”.

The numeric operators are pretty obvious. You can look for numbers less than, less than or equal to, greater than, or greater than or equal to the value specified.

6. Enter the equation below and then run the report:

Age > 21

The report lists all employees with an age greater than 21. If you change the Operator to “>=”, you will also include those employees who are currently 21.

The numeric operators can also be used on text fields.

7. Enter the equation shown below and then run the report:

Last Name > **Jones**

The report lists all employees with a Last Name that is greater (alphabetically speaking) than Jones. This would include Stern and Wilson, but not Jamison.

8. Enter the equation shown below and then run the report.

Last Name < **Jones**

The report includes Adams and Healy, but not Stern.

Now, let's take a look at the =My operator. The =My operator requires that the contents of the field match the value of a field in the user's record to be included in the report. Let's demonstrate this by doing a report of everyone in your department.

9. Enter the equation shown below:

Department Code =My **Department Code**

In order to verify that this equation has worked; we need to add this field to the report itself.

10. On the **Report Definition** tab, add **Department Code** to the end of the report and then run the report.

You should see yourself, Timothy Carpenter, listed along with everyone else in your department.

You don't have to compare the same fields when using the =My operator. For example, the comparison might test for City =My Contact 1 City. Only records with the same City as the user's Contact 1 City are included. Also, the record being checked for the user will be either the user's employee record or applicant record, depending on the user's status. If the user is an applicant, only Applicant Management fields can be used in the Contents field comparison; otherwise, only Personnel Management fields can be used.

We won't need the Department field in later reports, so let's remove that.

11. On the **Report Definition** tab, delete the **Department Code** field.
12. Return to the **Query** tab for the next tutorial.
13. Continue with the next tutorial.

Tutorial 2.3 – Compound Operators

There are two remaining operators to demonstrate. These are the compound operators that use two entries in the Contents field. Here's how they work.

1. Change the **Field Name** to **Age** and set the **Operator** to **Between**.

Between is a compound operator that compares the contents of the field to the range specified. After entering Between in the Operator field, your cursor should now be in the Contents field. Note that there is a popup button adjacent to the field. This button is used to capture the range.

2. Click that popup button now to display the **Between** screen.

The Between screen contains two fields. These fields are used to set the starting and ending values for the range. Both fields take on the attributes of the appropriate field type. In our example, we have used Age as the field. Thus, the two fields on the screen use the numeric attributes of the Age field.

3. In the **From Value** field, enter **30** and in the **To Value** field, enter **40**. Then close the screen and run the report.

Note that the ages listed for the employees are all between 30 and 40 inclusive. That means that employees aged 30 and 40 are also included.

The Between screen makes entering ranges quite easy, but you can actually enter them manually.

4. In the **Contents** field, clear the entry that was generated by the screen. Now enter the phrase shown below and run the report. The results will be the same as before.

30 And 40

The Between operator can be used for numeric fields, date fields, and text fields. If you were looking for employees hired over a given period, you could use a query of the format shown below:

Hire Date Between 1-01-2005 And 12-31-2008

5. Change the **Field Name** to **Hire Date** and use the **Between** screen to create this equation. Now run it.

Only employees hired during that time will be listed. You can add the Hire Date field to the Report Definition to confirm this if you wish.

The Between operator has an inverse operator named Outside. It is used to find records that are outside of the stated range rather than within the range.

6. Change the **Operator** to **Outside**. Now run the report.

The report will now include all of the employees that were not listed in the prior report and none of those who were. The range specified by the Outside operator is exclusive. Thus, in this example, employees hired since the beginning of time through 12-31-2003 and from 01-01-2007 through the present are included.

7. Close the **Document Viewer** and the **Adhoc Reports** screen.
8. This concludes this tutorial and lesson.

Lesson 3

Sorting and Calculating

Contents

Tutorial 3.1 – Simple Sorting	36
Tutorial 3.2 – Advanced Sorting	38
Tutorial 3.3 – Email Break	40
Tutorial 3.4 – Using Calculations	43

This lesson covers the sorting and calculation features in the adhoc report writer.

Tutorials

Simple Sorting: shows how to perform simple sorting using one or more fields.

Advanced Sorting: demonstrates the “break” and “eject” sort options.

Email Break: demonstrates how the email break can send an email to each email address with only the part of the report that relates to that email address.

Using Calculations: shows how to use each of the calculation options provided while demonstrating the relationship between sorting and calculations.

Tutorial 3.1 – Simple Sorting

In this tutorial, you will learn about how to do simple sorting on a report.

1. On the **Documents** menu, select **Adhoc Reports**.
2. On the Tool Bar, click the **New Adhoc Report** button to create a new document.
3. Name the report **Sample Sorting Report** and place it in any **Explorer Category** you desire. Leave the **Category** field set to **User**.
4. On the **Report Definition** tab, enter the following three **Field Names: Last Name, City, and Age**. Note that when fields are selected, the **Sort Type** column defaults to **None**. Run the report.

The records are listed in no particular order because no sort was supplied. (In actuality, the records are listed in the order in which they were entered into the database.)

5. For the **Last Name** field, change the **Sort Type** column to **Sort**.

Note that the Sort Order column defaults to Ascending. Ascending order means “A to Z” for text-based fields and “1 to 999” for numeric fields.

6. Run the report and you will now see that the records are sorted alphabetically by **Last Name** in ascending order.
7. For the **Last Name** field, change the **Sort Order** from **Ascending** to **Descending**. Run the report.

The records should now be sorted alphabetically by Last Name in descending order. Now let’s see how it works on numeric fields.

8. Deactivate sorting for the **Last Name** field by setting the **Sort Type** column to **None**. Activate sorting for the **Age** field by setting the **Sort Type** column to **Sort**. Run the report.

The records are listed in ascending order by Age.

9. For the **Age** field, switch the **Sort Order** to **Descending** and run the report again.

That is simple sorting with a single field. Now let’s try simple sorting with two fields.

10. First, remove the sort on **Age**.
11. Then, change the order of the fields in the **Report Definition** grid so that **City** comes before **Last Name**. If you remember grid conventions, you can use the **Row Down** button on the Tool Bar to push the **Last Name** row down.

Now, we can double-sort.

12. For the **City** field, set the **Sort Type** column to **Sort**. Set the **Sort Type** column on the **Last Name** to **Sort**. This report should now sort the records alphabetically by **Last Name** within **City**. Try it.

You should see that the cities are sorted alphabetically in ascending order. Within each

unique City, the records are sorted in ascending order by Last Name. This is a double-sort or a compound sort. The reason we needed to move City to the first row is that the order in which fields are sorted is determined by the order in which the fields appear on the Report Definition grid.

Let's make this report much easier to read.

13. For the **City** field, clear the **Repeat** check box and run the report.

Only the first occurrence of each City is printed and the report has a "pan-handle" format. This format is much easier to read because it becomes very obvious when the sort order changes.

When using compound sorts, it is not necessary to use the same Sort Order on each column.

14. For the **Last Name** field, change the **Sort Order** to **Descending** and run the report again.

The Sort Order for the City field remains the same, but the Sort Order for Last Name within City is reversed.

15. As a final step in this tutorial, reverse the **Sort Order** for the **City** field and run the report.

Now both fields are in descending order.

16. Close the **Document Viewer**.
17. Continue with the next tutorial.

Tutorial 3.2 – Advanced Sorting

The next level of sorting is called a “break”. “Break” works just like “sort” and also inserts a space (when gridlines are not shown) or inserts a line (when gridlines are shown) each time the Sort field changes. Let’s try a break now.

1. On the **Specification** tab, verify that the **Show Gridlines** check box is cleared.
2. On the **Report Definition** tab, change the **Sort Type** column for the **City** field to **Break** and run the report.

Note that it is even more obvious when the city name changes because of the additional space between city groups.

3. For the **City** field, select the **Repeat** check box and run the report again.

Note that even when repeating is active, the break makes the report easier to read.

4. On the **Specification** tab, select the **Show Gridlines** check box. Run the report and note that a horizontal line is drawn between each city.
5. On the **Report Definition** tab, clear the **Repeat** check box for the **City** field and try the report one more time.

Now the line is only drawn when the city name changes. This makes the report easy to read.

6. On the **Specification** tab, clear the **Show Gridlines** check box.

As with the basic sort, you can have compound breaks. Let’s insert a new field.

7. Click the **Report Definition** tab and click anywhere on the **Last Name** row.
8. On the Tool Bar, click the **Insert Row** button to insert a blank row above the **Last Name** field.
9. Add the **Gender** field to the report and set the **Sort Type** column to **Break**.

We are now breaking by Gender within City and sorting by Last Name within Gender.

10. Run the report and see how it looks.

That is a triple sort with a double break. Sounds like an ice skating move.

There is another level of sorting known as Eject. Eject works just like Break except that rather than insert space or a line, Eject starts a completely new page.

11. To set up this example, delete the **Gender** row we added in the last step. Then set the **Sort Type** column for the **City** field to **Eject**.

In theory, we have created a report that lists the employees in each city on a separate page.

12. Run the report and see what you get.

You will need to use the navigation features of the Document Viewer to jump through the pages, but they are there: one city of employees per page.

13. Close the **Document Viewer**.
14. Continue with the next tutorial.

Tutorial 3.3 – Email Break

In this tutorial, we are going to add an Email break to our report.

1. On the **Report Definition** tab, insert the **Supervisor Email** field above the **City** field.
2. In the **Sort Type** column for the **City** field, use the popup button to display a list of the available sort methods. You will see the four methods you have learned about before. Click **Cancel** to exit and leave the **Sort Type** as **Eject**.
3. In the **Sort Type** column for the **Supervisor Email** field, display the list of sort methods again. This time, there is an additional method: **Email**. This additional sort method will be available on any field that has been defined as an email field. Select this method.

An email break works just like a page break in normal use.

4. Run the report now.

You will see that the employees are grouped by the supervisor email and then by city. Each group starts on a new page.

An email break differs from an eject break when you email reports. If you email a report with ejects, each email recipient will receive the entire report. If you email a report with email breaks, each email recipient will receive only the part of the report associated with their email address.

The report that is currently displayed is a list of employees grouped by the supervisor email address and then by city. We can send each supervisor a listing of his/her employees sorted by city from this one combined report. Try it now.

5. On the Tool Bar, click the **Output to Email** button to send the email.

The following message is displayed:

Internal email breaks will cause emails to be sent automatically.
Do you wish to continue?

This warning allows you to choose not to continue in this case. We want to continue.

6. Click **Yes**.

You will now see the email simulation for the first email that is based on the email break defined in the document. This email is directed to the first supervisor in the break. Attached to the email is the corresponding page (or pages) of the document.

7. Click **OK** for each email simulation to process through the document sections.

When the sections are complete, the email simulations stop, and you are notified that emails were sent based on the breaks. In production, the email simulations are not displayed.

As the message also states, the following dialog can be used to email the entire document to whomever you want.

8. Click **OK** to close that message.

The Output to Email screen is displayed. If you had any email destinations specified in this document's properties, they would have been defaulted in the To field. We don't have any in our case, so this screen is blank. You could add email addresses at this time and those emails would have the whole document included as an attachment.

You will learn much more about the Email feature in People-Trak in the Essential Tools training, so we will just close out of this screen.

9. Close the **Output to Email** screen.
10. Close the **Document Viewer**.
11. Remove the **Supervisor Email** field from the report.
12. Close and save the **Adhoc Reports** screen and close the **Explorer**.

Email fields are used throughout the modules in People-Trak. You can use the email break feature with any email field. For example, if you wish to distribute some type of document such as an attendance history to each employee by email, you can email break by the employee's email address. If the report lists 250 employees, 250 separate emails will be generated with each employee receiving their appropriate portion of the report.

The email break feature can also be used with letters and forms, but it works a little differently. Let's demonstrate this.

13. On the **Documents** menu, select **Letters**.
14. Open the **Anniversary Letter** for editing.

At the bottom of the Specification tab, there are fields that can be used to sort the individual letters when they are printed.

15. Click the **Specification** tab. In the **Sort By 1** field, use the popup button to select the **Last Name** field.

These letters will now be sorted by Last Name.

16. Attempt to select the **Email Break** check box.

This field is used to force an email break. However, the Last Name field is not an email field. You cannot force an email break on a non-email field.

17. Change the **Sort by 1** field to **Email**. Now try to select the **Email Break** check box.

It is possible now. These letters will now be sorted by the employee's Email address. If the Output to Email option is used within the Document Viewer, individual emails will be sent to each employee.

18. Change the **Sort by 1** field back to **Last Name**.

Note what happens. The Email Break is automatically disabled because you cannot email break on a non-email field.

This capability works the same way with output forms.

19. Close the **Letters** screen, without saving. Close the **Explorer**.
20. Continue with the next tutorial.

Tutorial 3.4 – Using Calculations

The simplest type of calculation is a “count”. A “count” is a count of the number of records within a break and does not reflect the contents of a field. For example, if you count the salary for 30 employees, the count will be 30, not the sum of the salary for each employee. Let’s apply a “count” to our sample report.

1. On the **Documents** menu, select **Adhoc Reports**.
2. Open the **Sample Sorting Report** we created earlier.
3. Our sample report should have three fields: **City**, **Last Name**, and **Age**. There should be an **Eject** on the **City** field and a **Sort** on the **Last Name** field. Add a count to the **City** field by putting the phrase **Count** into the **Calculation** column. Now run the report.

You will see a subtotal added under the City column that indicates the number of records in the sort.

Subtotals are provided as long as there is an Eject or a Break used in the report.

4. On the **City** field, change the **Sort Type** to **Break** and run the report again.

This time, you can see the counts for each city without needing to move between pages.

5. Before leaving the report, scroll down to the bottom of the report and note that a grand total is provided for all records in the report.
6. On the **City** field, change the **Sort Type** to **Sort** and run the report.

This time there are no subtotals because subtotals are only included when you Break or Eject. If you scroll to the bottom of the report, however, you will note that a grand total is provided.

7. On the **City** field, change the **Sort Type** back to **Break**.

Now that you have learned about counts, let’s learn about the other calculation types.

8. Without changing the calculation on the **City** field, add a **Minimum** calculation to the **Age** field.

The “minimum” calculation will determine the lowest value for the field within the break.

9. Run the report.

Note that the count for the records within the city remains while a minimum age calculation is provided.

10. Add the **Age** field to the report a second time at the bottom of the report and place a **Maximum** calculation on this field. Run the report.

We should now have a report that calculates the number of employees in each city and shows the minimum and maximum ages for employees within that city. You have also just learned that you can use the same field on a report more than once.

The next calculation to learn about is “average”.

11. Add another row to the report using the **Age** field again. This time put an **Average** calculation on the **Age** field. Run the report and you will see that we now know the average age of the employees in each city.

You can see that calculations can be used to provide some very interesting statistics. Our report, however, is getting redundant. If we really want to see this degree of statistics, we probably do not need to see the level of detail shown. Let's make this statistics report into a "totals-only" report.

12. Clear the **Print** check box for each field on the report.

This will eliminate the detail for the city name, last name, and each of the ages.

13. Now run the report.

You can see why this report is called a "totals-only" report; the only thing you can see are the totals.

Now, let's learn about the "total" calculation, which is used to sum the contents of numeric fields. To demonstrate it, we need to modify our sample report.

14. Delete all three **Age** fields. Delete the **Last Name** field. Reactivate printing for the **City** field. Finally, add the **Pay Rate** field and include a **Total** calculation.

This report can best be described as a "Salary Total by City" report.

15. Run it and have a look.

Each pay rate for each employee is shown, but the employee name is not shown for confidentiality purposes. For each city, the total salary amount has been calculated and is shown.

Let's change this report to something you will need.

16. Change the field on the first row from **City** to **Department Name**.

Note that when you select a field, the default settings for Print, Repeat, Sort Type, Sort Order, and Calculation are inserted.

17. Place a **Break** on the **Department Name** field and set a **Count**. Add **Pay Rate** to the bottom of the report so that it appears twice and set an **Average** calculation. Finally, change the report to a "totals-only" report by clearing the **Print** check box for all fields. Run the report.

This report is a "Salary Statistics by Department" report. It lists the total salary burden and average salary for each department in the company. Very powerful stuff.

Let's add percentages to our report.

18. Add another **Department Name** field and include a **Percent Count** calculation.

19. Add another **Pay Rate** field and include a **Percent Total** calculation.

20. Run the report.

You can now see the percentage of the count and total for each department. These calculations are very useful analytical tools.

One final example will demonstrate the power of sorts and calculations. Please be aware that this report has been known to create trouble in organizations. However, we are not responsible for this trouble; we merely report the facts.

21. Change the field on the first row to **Gender**. Be sure to reset the **Break**, deactivate printing, and set a **Count**. Now delete the **Pay Rate** row that contains the total, but leave the **Pay Rate** row that contains the average. Delete the rows with the **Percent Count** and **Percent Total** calculations.

This report is now the dreaded “Average Salary by Gender” report, and in an instant, it will indicate “potential” pay equity issues in an organization.

22. Run the report.

The data in the DEMO area of the database indicates relative parity among gender.

If you think this last sample through, you will notice that the report does not take into account the job performed by the different genders. This report could be modified to break by gender within job code and to average the pay rate for different genders performing the same job. With that report, you would have a true indication of salary parity. Unfortunately, our time is up.

23. Close the **Document Viewer** and the **Adhoc Reports** screen.
24. Close the **Explorer**.
25. Exit **People-Trak**.
26. This concludes this tutorial and lesson.