

Basics Series-4010

Query and Reporting 2

Version 9.0

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Notes

Workbook

Field Modifiers

Field modifiers are used to return a portion of the actual field in a specified format. For example, with date fields, you can return the month, day, or year portion of the date rather than the whole date. Field modifiers can be used in conjunction with row modifiers. If you request a range of salary dates and then request to see only the month of the salary date, the month of the salary date for the range of dates is returned. Field modifiers can only be used with date and currency fields. If you try to select a field modifier for other field types, a message will appear stating that there are no valid modifiers.

Modifier	Description	Sample Output
M	Numeric month	1 to 12
D	Numeric day of the month	1 to 31
Y	Numeric year	2008
WD	Word day of the week	Monday, Tuesday, etc.
WM	Word month	December
WMD	Word month and day	December 31
WMDY	Word month, day and year	December 31, 2008
W\$	Word currency	Twenty three and 0/100 Dollars

Row Modifiers

Row modifiers only apply to the grid-style data entry screens for People-Trak. On these screens, you could have multiple lines of information for each employee. For example, you could have multiple salary records for a given employee. Therefore, there would be multiple Salary Dates, multiple Pay Rates, multiple Pay Frequencies, and so on. So, when you use fields from these grid-type screens in the report definition, you must tell People-Trak which line of the given screen contains the field for the report. Each modifier is explained in detail with examples of how these modifiers will change your report.

Note: Non-grid fields only allow blank or 1 in the Row Modifier, and the popup in this column only shows 1 as an option as well.

Blank

If no modifier is entered, the modifier is assumed to be "1". So, for data items for which there are multiple rows, the first row and only the first row will be printed.

* (all rows)

This modifier is used with data items for which there are multiple rows. It indicates that all rows are to be printed. For example, if you have chosen to print a skills inventory and you

wish to list all of the skills for each employee, use the field name and modifier as shown below.

Skill *

+ (last row)

This modifier is used with data items for which there are multiple rows. It indicates that the bottommost row is to be printed. For example, if you wish to print the starting salary for an employee and the salary records are stored in descending order, use the field and modifier as shown below.

Pay Rate +

(specific row reference)

This modifier is used with data items for which there are multiple rows. It indicates that the specifically numbered row is to be printed. For example, if you wish to print the current salary for an employee, the prior salary, and the starting salary, use the field name and modifiers as shown below.

Pay Rate 1
Pay Rate 2
Pay Rate +

Note: The Select Row Modifiers popup screen shows codes 1-10, but higher row numbers can be manually entered as well.

#:# (range of rows)

This modifier is used to specify that a range of rows is to be included. The range is formed from a “from value” and “to value” separated by a colon. For example, if you wish to print the pay rate from rows 2 through 5, use the field name and range modifiers as shown below.

Pay Rate 2:5

There are no limits to the range you can enter. If you specify an upper value that exceeds the number of rows, only the number of actual rows is returned. If the starting value is above the number of rows, no rows are returned. If you enter the range in reverse order (larger number first), the range will corrected when you leave the field.

= (row that matches the query)

This modifier is used with data items for which there are multiple rows. It is used to print the specific row that matched the query. For example, if you created a query that was to list employee names and salaries for all salaries greater than 30000, you could use either the “*” modifier or the “=” modifier. The “*” modifier would print all of the salaries for each employee who had a least one salary greater than 30000. The “=” would list only those salaries that actually met the query criteria: greater than 30000.

You can only use the “=” modifier when the same data item has been used in the query. The query equation and matching field name/modifier combination for example described above are shown below.

<i>Pay Rate</i>	*	>	30000
<i>Pay Rate</i>	=	>	30000

Query Operators and Modifiers- Date

There are three sets of date operators. Each set is used to compare a specific part of the date to a numeric month, day, or year.

MO=

Requires that the month portion of the date match to the numeric month specified in order for a record to be included in the report. For example, to select those employees with a birth date in the month of September, use the equation shown below.

Birth Date MO= 9

MO>

Requires that the month portion of the date be greater than the numeric month specified in order for a record to be included in the report. For example, to select those employees with a birth date in the last half of the year (July or later), use the equation shown below.

Birth Date MO> 6

MO<

Requires that the month portion of the date be less than the numeric month specified in order for a record to be included in the report. For example, to select those employees with a birth date in first half of the year (June or earlier), use the equation below.

Birth Date MO< 7

MO>=

Requires that the month portion of the date be greater than or equal to the numeric month specified in order for a record to be included in the report. For example, to select those employees with a birth date in last half of the year (July or later), use the equation below.

Birth Date MO>= 7

MO<=

Requires that the month portion of the date be less than or equal to the numeric month specified in order for a record to be included in the report. For example, to select those employees with a birth date in first half of the year (June or earlier), use the equation below.

Birth Date MO<= 6

MO<>

Requires that the month portion of the date be not equal to the numeric month specified in order for a record to be included in the report. For example, to select those employees who do not have birthdays in the month of June, use the equation listed below.

Birth Date MO<> 6

DY=

Requires that the day portion of the date be equal to the numeric day specified in order for a record to be included in the report. For example, to select those employees hired on the fifteenth day of any month, use the equation listed below.

Hire Date DY= 15

DY>

Requires that the day portion of the date be greater than the numeric day specified in order for a record to be included in the report. For example, to select those employees hired on days after the fifteenth day of any month, use the equation listed below.

Hire Date DY> 15

DY<

Requires that the day portion of the date be less than the numeric day specified in order for a record to be included in the report. For example, to select those employees hired on dates before the fifteenth day of any month, use the equation listed below.

Hire Date DY< 15

DY>=

Requires that the day portion of the date be greater than or equal to the numeric day specified in order for a record to be included in the report. For example, to select those employees hired on or after the fifteenth day of any month, use the equation listed below.

Hire Date DY>= 15

DY<=

Requires that the day portion of the date be less than or equal to the numeric day specified in order for a record to be included in the report. For example, to select those employees hired on or before the fifteenth day of any month, use the equation listed below.

Hire Date DY<= 15

DY<>

Requires that the day portion of the date be not equal to the numeric day specified in order for a record to be included in the report. For example, to select those employees who do not have birthdays on the fifteenth day of any month, use the equation listed below.

Hire Date DY<> 15

YR=

Requires that the year portion of the date be equal to the year specified in order for a record to be included in the report. For example, to select those employees hired in 1980, use the equation listed below.

Hire Date YR= 1980

YR>

Requires that the year portion of the date be greater than the year specified in order for a record to be included in the report. For example, to select those employees hired after 1980, use the equation listed below.

Hire Date YR> 1980

YR<

Requires that the year portion of the date be less than the year specified in order for a record to be included in the report. For example, to select those employees hired prior to 1980, use the equation listed below.

Hire Date YR< 1980

YR>=

Requires that the year portion of the date be greater than or equal to the year specified in order for a record to be included in the report. For example, to select those employees hired in or after 1980, use the equation listed below.

Hire Date YR>= 1980

YR<=

Requires that the year portion of the date be less than or equal to the year specified in order for a record to be included in the report. For example, to select those employees hired in or before 1980, use the equation listed below.

Hire Date YR<= 1980

YR<>

Requires that the year portion of the date be not equal to the year specified in order for a record to be included in the report. For example, to select those employees who were not hired in 1980, use the equation listed below.

Hire Date YR<> 1980

Anniv

Requires that the month and day portions of the date are the same as the month and day specified in order for a record to be included in the report. For example, to select those employees who were hired on the same month and day as today, use the equation listed below.

Hire Date Anniv TODAY

Anniv-M

Requires that the month portion of the date is the same as the month specified in order for a record to be included in the report. For example, to select those employees who were hired in the same month as today, use the equation listed below.

Hire Date Anniv-M TODAY

Query Operators and Modifiers- Time – Hours

HR=

Requires that the hour portion of the time is equal to the hour specified in order for a record to be included in the report. For example, to select those employees who clocked in at 8:00 AM, use the equation listed below.

Start Time HR= 8

HR>

Requires that the hour portion of the time be greater than the hour specified in order for a record to be included in the report. For example, to select those employees who clocked in after 8:00 AM, use the equation listed below.

Start Time HR> 8

HR<

Requires that the hour portion of the time be less than the hour specified in order for a record to be included in the report. For example, to select those employees who clocked in prior to 8:00 AM, use the equation listed below.

Start Time HR< 8

HR>=

Requires that the hour portion of the time be greater than or equal to the hour specified in order for a record to be included in the report. For example, to select those employees who clocked in at or after 8:00 AM, use the equation listed below.

Start Time HR>= 8

HR<=

Requires that the hour portion of the time be less than or equal to the hour specified in order for a record to be included in the report. For example, to select those employees who clocked in at or before 8:00 AM, use the equation listed below.

Start Time HR<= 8

HR<>

Requires that the hour portion of the time be not equal to the hour specified in order for a record to be included in the report. For example, to select those employees who did not clock in at 8:00 AM, use the equation listed below.

Start Time HR<> 8

Query Operators and Modifiers- Time – Minutes

The time operators for minutes use the operator prefix of MN and work just like the operators for hours.

Linking Query Equations with AND and OR Operators

Whenever more than one equation is used, the equations must be linked with an operator. The operators “AND” and “OR” can be used to link the equations. The “AND” operator is used to link two equations so that the results of both must be true for the record to qualify. For example, in the combined equation Age >= 21 AND Gender = Female, only those employees who are at least 21 years of age and who are also female will be included.

The “OR” operator is used to link two equations so that the results of either can be true for the employee to be included. For example, in the combined equation Age >= 21 OR Gender = Female, employees who are at least 21 years of age or who are female will be included. This is a more complex comparison that actually allows males who are at least 21 years of age and females of any age to be included. If an employee meets either of the two criteria, the employee is included. The “AND” and “OR” operators can be used to link equations in any combination.

Examples:

<i>Department Code</i>	=	100	OR
<i>Department Code</i>	=	200	OR
<i>Department Code</i>	=	300	

In this example, the “OR” operator is used with a single field in a series comparison. Employees in any of the three departments will be included.

<i>Gender</i>	=	<i>Female</i>	<i>AND</i>
<i>Pay Rate</i>	>	<i>50000</i>	<i>AND</i>
<i>Age</i>	>=	<i>21</i>	

In this example, female employees 21 years of age or older with annual salaries greater than \$50,000, will be included.

<i>Age</i>	<	<i>18</i>	<i>OR</i>
<i>Employment Status</i>	=	<i>Part-Time</i>	<i>AND</i>
<i>Citizen</i>	=	<i>N</i>	

In this example, both the “AND” and “OR” operators are used. For a record to be included, the employee must NOT be a United States citizen, but can be less than 18 or a part-time employee. This specification would thus include all non-citizens less than 18 (part-time or otherwise) and all non-citizens who are part-time employees (regardless of any age).

The use of “AND” and “OR” operators is very powerful, but it takes some thought. In general, the “OR” operator broadens the qualification criteria while the “AND” operator narrows the criteria. The only way to master these concepts is to practice.

Order of Precedence

When “AND” and “OR” operators are mixed in a set of equations, there is a defined order in which the individual equations are evaluated. For example, the equations below could be interpreted in more than one way.

<i>Gender</i>	=	<i>Male</i>	<i>AND</i>
<i>Age</i>	>	<i>30</i>	<i>OR</i>
<i>Pay Rate</i>	>	<i>50000</i>	

This set of equations could mean: include all men older than 30 or all men with salaries greater than 50000. It could also mean: include men older than 30 or anyone with a salary greater than 50000. In complex equation sets, the interpretations can be endless.

When “AND” and “OR” operators are mixed in a set of equations, the equation processor evaluates the AND equations from top to bottom and then the OR equations from top to bottom. In the equations above, the employee would have to be either male AND older than 30, OR be any gender of any age as long as the salary is greater than \$50,000. The interpretation that forces the employee to be male is ruled out because the gender and age are AND'ed and are evaluated before the OR statement.

Mixing ANDs and ORs can be somewhat confusing. If filters of such complexity are required, they can be achieved. To simplify the reading of combined AND/OR equations, the equation processor allows the use of parenthesis. These are described next.

Parentheses

Parentheses can be used to determine the order in which the equations are to be evaluated. They are useful when ANDs and ORs are used together to make the equation set more explicit.

<i>(Gender</i>	=	<i>Male</i>	<i>AND</i>
<i>Age</i>	>	<i>30)</i>	<i>OR</i>
<i>Pay Rate</i>	>	<i>50000</i>	

The simple addition of the parentheses to the equations used earlier makes the equations much easier to read (although they do not actually change the result).

Parentheses can also be used to override the default order in which the individual equations are to be evaluated. For example, in our sample equations, the default order may not be what is desired. If only males who are greater than 30 or who have salaries greater than 50000 are to be included, the equations would be entered this way.

```

Gender           =           Male           AND
(Age             >           30             OR
Pay Rate         >           50000)
    
```

By changing the parentheses, the Gender = Male equation is actually AND 'ed against the result of the age and salary “OR” comparison.

The equation processor follows the rules listed below.

1. Each set of parenthesis is evaluated from top to bottom in the order they appear.
2. Within each set of parenthesis, all AND statements are evaluated first. The OR statements are evaluated last.
3. After the equations in parentheses are evaluated, the equations not in parentheses are evaluated. They are evaluated from top to bottom with AND statements first and OR statements last.

Design Mode

Design Mode is a tool that enables you to change the default characteristics of an adhoc report. The Design Mode feature can be turned on or off for a user in Security Setup by selecting or clearing the Design Mode check box on the General tab. If you have access to the Design Mode feature, it is available both as an option on the File menu and on the Tool Bar when a document has been opened.

Design Mode is only partly applicable when the Auto Format feature is used. Auto Format overrides font sizes and column widths, but uses the font names, font types, font colors, and alignments.

Columnar Reports

When Design Mode is selected for a columnar report, a screen similar to the one shown below is displayed.



For a columnar report, the columns are oriented horizontally just as in the report itself. You can use the horizontal scroll bar to scroll and expose columns that are not visible within the screen.

Note: Non-printing columns are not shown in design mode.

To change a column width, place the cursor over the gridline between two columns. Drag the gridline to the right to expand the column or to the left to contract the column. When the design changes are saved, the new column width is written to the hidden Column Width column on the report grid and saved with the report definition.

For tabular reports, you can change column widths for any of the three columns. If you wish to change field names and you need a wider space for the longest field name, expand the header column. If you wish to increase the gap between the field names and that data itself, expand the separator column. If you wish to increase the space provided for data, expand the data column.

Changing Font Attributes

To change font attributes for a heading or body, select the desired heading with the mouse. Once selected, you can perform the following tasks: change font names, change font sizes, change the font style, change column alignment, or change the font color using the appropriate dropdowns and buttons on the Tool Bar.

When the design changes are saved, they are saved to the corresponding hidden columns on the report grid and then saved with the report definition.

Restore Defaults

At some point, you may wish to return the document to the format it would have had if you had not changed it with Design Mode. Use the Restore Defaults option on the File menu to do this. This option re-reads all of the attributes associated with each field as well as the defaults established for the current user and completely resets the report just as if the fields were all deleted and reentered.

On columnar reports, this means that the column headings and data will be left justified for text fields and right justified for numeric fields. On tabular reports, this means that the column headings will be right justified for all fields, but the data will be left justified for text fields and right justified for numeric fields. All standard People-Trak font settings will be restored as well.

If the default settings for the report have changed since the report was first keyed or if customization has been performed on any of the fields in the report, these will take effect when the Restore Defaults option is used.

People-Trak provides a number of query-based options. These are options that use a standard query format to retrieve records for reporting, export, update, etc. When a query has been created, it can be saved in a record known as a “specification”. Each query-based option has a unique specification.

A security filter can be defined for each user in Security Setup - Module that limits what information is available when using the query process.

Lesson 4

Report Modifiers

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This lesson covers the row and field modifiers that add a tremendous amount of flexibility to your reports.

Tutorials

Using Date Field Modifiers: shows how to use the date field modifiers to print the individual parts of a date whenever needed.

Reporting on Specific Rows: demonstrates how to create reports that list individual rows from a grid.

Creating History Reports: shows how to use the “*” wildcard row modifier to create reports that show all rows from a grid.

Using Query and Report Definition Modifiers: demonstrates how to use query and report definition modifiers at the same time.

Tutorial 4.1 – Using Date Field Modifiers

Date field modifiers allow you to return the month, day, or year portion of a date rather than the whole date. In this tutorial, you will learn how to use them.

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.

6. On the **Documents** menu, select **Adhoc Reports**.
7. On the Tool Bar, click the **New Adhoc Report** button to create a new document.
8. On the **Report Definition** tab, enter the following three **Field Names: Full Name** and then **Hire Date** twice.
9. Run the report for reference purposes.

Now, let's demonstrate the modifiers.

10. For the first **Hire Date**, set the **Field Modifier** to **M** and run the report.

The report will now list the month from each Hire Date.

11. For the first **Hire Date**, set the **Field Modifier** to **D** and run the report.

The report will now list the day from each Hire Date.

12. For the first **Hire Date**, set the **Field Modifier** to **Y** and run the report.

The report will now list the year from each Hire Date.

That's how the Field Modifiers work separately. Now let's show them together.

13. Add the **Hire Date** field to the report two more times. Set **Field Modifiers** for the first three **Hire Date** fields to **M, D** and **Y**. Run the report.

You will see each part of the date, followed by the full date.

The date field modifiers can be used with any date. A typical use of the date modifiers

applies to the Birth Date field. You can use the date modifiers to show a birthday without showing the year. Try it.

14. Delete the **Hire Date** rows and replace them with two **Birth Date** rows. Set the first **Field Modifier** to **M** and the second to **D**. Set the **Sort Type** field on both **Birth Date** fields to **Sort**. Now run the report and you will have a nicely formatted and politically correct “Birthday Report”.

There are also word field modifiers for date fields as well as currency fields. For example, a field modifier of WM (Word Month) on a date of 12-31-08 returns December while a field modifier of W\$ on an amount of \$23.17 returns twenty three and 17/100 Dollars. There are also WD, WMD and WMDY field modifiers for date fields.

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

Tutorial 4.2 – Reporting on Specific Rows

Row modifiers apply to the grid-style data entry screens for People-Trak. On these screens, you can have multiple lines of information for each employee, applicant, etc. For example, you could have multiple salary records for a given employee. Therefore, there would be multiple Salary Dates, multiple Pay Rates, multiple Pay Frequencies, and so on. Thus, when you use fields from these grid-type screens on a report, you must tell People-Trak which line of the given screen contains the field to be shown on the report by using row modifiers. This tutorial shows how to create reports that list specific rows.

1. Modify the sample report by deleting the **Birth Date** rows added in the prior tutorial. Add three **Salary Date** fields. Run the report for reference purposes.

All of the dates should be the same. Because the Row Modifier column is blank, the first Salary Date is shown three times.

2. On the second **Salary Date**, change the **Row Modifier** row to **1** and run the report.

The report remains the same which proves that a blank modifier is the same as the 1 modifier.

3. On the second **Salary Date**, change the **Row Modifier** row to **2**. On the third **Salary Date**, change the **Row Modifier** row to **3**. Run this report.

You can see that you can place dates in ascending order horizontally across the page. However, the Row Modifiers need not be consecutive, and they need not be in any order. You can list any row that you want in any order that you want.

4. On the third **Salary Date**, change the **Row Modifier** to “+” and run the report.

The “+” modifier lists the last (bottom-most) salary date for each employee.

You can report on fields from any screen. Let’s try the simple version first by changing the report to show the Salary Date and Pay Rate for the first three rows.

5. Make your **Field Name** and **Row Mod** rows look like this:

Full Name	
Salary Date	1
Pay Rate	1
Salary Date	2
Pay Rate	2
Salary Date	3
Pay Rate	3

6. Run the report.

This report is essentially a “Recent Salary History” and might be useful. The only thing that would be nice to change is the column headings. The report would be more meaningful if the headings reflected the row number. There is a way to modify these headings, but that is the subject of another lesson.

Now let’s change the report to include recent appraisal history. There are both salary and Performance Appraisal dates in People-Trak. You might want to see both.

7. Make your **Field Name** and **Row Mod** rows look like this:

Full Name	
Salary Date	1
Change Reason	1
Salary Date	2
Change Reason	2
Appraisal Initiation Date	1
Items Rating	1
Appraisal Initiation Date	2
Items Rating	2

8. Run the report.

You will see the two most recent salary reviews adjacent to the two most recent Performance Appraisals. Again the report would be more useful if the headings could be changed, but we'll see about that later.

Another way to produce this report looking at the two most recent salary reviews would be to use a range of rows for the row modifier. The range is formed from a "from value" and "to value" separated by a colon. Let's replace the report above with one that uses a range for the row modifier.

9. Make your **Field Name** and **Row Mod** rows look like this:

Full Name	
Salary Date	1:2
Change Reason	1:2
Appraisal Initiation Date	1:2
Items Rating	1:2

10. To make the report more readable, clear the **Repeat** check box for the **Full Name** field and also place a **Break** on the **Full Name** field.

11. Run the report.

Notice that the salary information for the two most recent appraisals is printed vertically rather than side by side as in the previous example.

There are no limits to the range you can enter. If you specify an upper value that exceeds the number of rows, only the number of actual rows are returned. If the starting value is above the number of rows, no rows are returned.

12. Close the **Document Viewer**.

13. Continue with the next tutorial

Tutorial 4.3 – Creating History Reports

More comprehensive history reports can be produced using the “*” modifier. This modifier is demonstrated in this tutorial.

1. Modify the sample report by deleting all rows after the **Salary Date** field. Add the following fields: **Pay Rate**, **Change Amount**, **Change Percent**, and **Change Reason**. Clear the **Row Modifier** for the **Salary Date** field.

2. Run the report.

The report should list the salary detail for the most current salary record. The records should be separated with a blank line due to the “break” that was inserted.

3. Now, change the **Row Modifier** for each of the salary fields (everything but **Full Name**) to “*”.

The “*” modifier is a wildcard and it indicates that all records should be listed.

4. Place a **Sort** on the **Salary Date** field and set the **Sort Order** to **Descending**. Run the report.

You now have a nicely formatted Salary History Report.

5. To place each employee’s salary history on a separate page, change the **Break** on the **Full Name** field to **Eject**. Run the report.

This is a report that WILL be used.

6. For the **Full Name** field, change the **Eject** back to **Break**.

Let’s create another history report using data from the Performance Appraisal screen.

7. Delete the salary fields and add the following fields: **Appraisal Completion Date**, **Appraisal Type**, **Items Rating**, **Appraisal Next Date**, and **Appraisal Next Type**. Set the **Row Modifiers** for these fields to “*” and set a **Sort** on the **Appraisal Completion Date** field. Run the report.

Once again, we have created a nicely formatted Performance Appraisal History report.

Note: If you inadvertently do not set all of the Row Modifiers to “*” on a history report, the value from the first row will be repeated for each line in the report.

8. Close the **Document Viewer**.
9. Continue with the next tutorial.

Tutorial 4.4 – Using Query and Report Definition Modifiers

When the “*” row modifier is used in a query, one additional row modifier, “=”, can be used in the report definition. This modifier will show only those rows that actually matched the query. This is an example of the query and the report definition working in conjunction with one another. Let’s build the report.

1. Modify the sample report into a simple salary history. Delete all rows after the **Full Name** field and insert the **Salary Date** and **Pay Rate** fields. Set the **Row Modifiers** to “*” and set a **Descending Sort** on the **Salary Date** field. You can run the report for verification.
2. On the **Query** tab, insert the equation shown below.

Pay Rate * > **3000.0000**

The query equation will include all employees with at least one pay rate greater than \$3,000. The report definition will list all of the salary records for the employees who meet the minimum salary requirement.

3. Run the report.

Some employees have been excluded, but for those employees included all of their salary records are shown.

4. Change the **Row Modifiers** for the salary fields on the **Report Definition** screen to “=”.

This modifier will cause the individual salary records (not the employee records) that meet the minimum salary requirement to be shown.

5. Run the report and study it.

The “=” **Row Modifier** triggers special processing that checks each record for each employee and causes each record that meets the query to be included. Thus, this report is no longer a full history for each employee, but rather a list of those pay rates greater than \$3,000 for each employee with at least one pay rate greater than \$3,000.

The “=” **Row Modifier** is very, very powerful. There are many reports that can take advantage of this feature. Here’s another. Consider a report that shows those performance appraisals for each employee that were performed by a specific appraiser or had a specific rating. Just use the “*” modifier on the query and the “=” row modifier on the report definition to look for all occurrences of the situation you are looking for and then only show information about those specific occurrences.

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

Notes

Lesson 5

Design Mode

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This lesson covers how to make changes to the format of a report using the Design Mode feature.

Tutorials

Changing Column Headings: shows how to change column headings from the defaults provided by the data entry screen to any desired value.

Changing Column Width: demonstrates how to change column widths from the defaults provided by the data entry screen.

Changing Font Attributes: shows how to change the default font attributes. Font size, font name, bold, italic, underscore, alignment, and color attributes can be changed.

Tutorial 5.1 – Changing Column Headings

In an earlier lesson we found that some reports were not as meaningful with the default report headings. This tutorial shows how to change the column headings using the Design Mode feature. The Design Mode feature is only available if the user has been allowed access to it in Security Setup.

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. On the **Specification** tab, clear the **Auto Format** check box.
4. On the **Report Definition** tab, enter the following four **Field Names: Full Name** and then **Pay Rate** three times. Set the **Row Modifiers** for the **Pay Rates** to **1, 2,** and **“+”**. Run the report and you will see a mini salary history report.

The problem is that the three headings for the Pay Rate fields are all the same. A person reading this report will not understand what the report is. Let's fix that.

5. Close the **Document Viewer**.
6. On the Tool Bar, click the **Design Mode** button.

The Design Mode screen is displayed. You should see your four fields spread across the grid. To change a column heading, double-click on the heading itself. This will activate editing in that cell of the grid.

7. Double-click on the first **Pay Rate** heading and change it to **Current Pay**. Change the second **Pay Rate** heading to **Prior Pay**. Change the third **Pay Rate** heading to **Starting Pay**.
8. On the **File** menu, select **Exit** to close the **Design Mode** screen.
9. Run the report.

Now the report is both meaningful and useful. The headings that have been modified will remain modified until you change them; they are part of the report.

10. Change the heading of the last **Pay Rate** field to **Initial Pay** and run the report again.

That's all there is to it.

If you wish to create a two-line heading, you can separate the words in the heading with a backslash (“\”) character. If you wish to change a two-line heading to a single-line heading, replace the backslash with a space. You can try this if you wish.

Note: Headings can be one or two lines, but no more.

11. Continue with the next tutorial.

Tutorial 5.2 – Changing Column Widths

In this tutorial, you will learn how to change column widths on a report.

1. Change the sample report as follows. Delete the three **Pay Rate** fields and add **Address 1**, **Address 2**, **City**, **State**, and **Zip Code**. Run the report.

Note that without auto-formatting, the width of the fields often exceed the maximum amount required. Address 2 in particular has a lot of “white space”. Let’s use Design Mode to solve the problem.

2. On the Tool Bar, click the **Design Mode** button to select **Design Mode**.

The default column widths are based on the widths of the field used on the data entry screens. To change a column width, move the cursor over the vertical grid line on the heading row of the grid. A special cursor is displayed. When the cursor is displayed, you can hold the mouse button down and drag the heading border in the desired direction.

3. Click on the line between **Address 2** and **City**. Hold the left mouse button down and reduce the width of **Address 2** by dragging the border to the left. Release the mouse button. Close the **Design Mode** screen and run the report.
4. If you have removed too much space, use **Design Mode** to increase it slightly. If you have not removed enough space, use **Design Mode** to decrease it slightly.

The process of changing column widths can require some trial and error. If you shrink a column too much, nothing terrible happens. The text uses word wrapping and expands vertically to allow for the additional lines. In some cases, where a very small number of fields are wide and the rest are thin, this can be acceptable.

5. Use **Design Mode** to cut the width of **Address 1** in half. Run the report and note how lines are wrapped when they do not fit the space allowed. Set the width of **Address 1** back to a more reasonable width.

Column widths are set automatically by auto-format. If you use auto-formatting, column widths set in Design Mode are completely ignored.

6. Continue with the next tutorial

Changing Font Attributes

Font attributes can be changed for both the headings and the body of the text. This tutorial shows how.

Font attributes can be changed using word-processor-like features in **Design Mode**.

1. Start **Design Mode** and click on the heading for **Full Name**. On the Tool Bar, click on the **Bold** button to change the heading to bold text.
2. Click on the body for the **Full Name** field. On the Tool Bar, click the **Text Color** button and change the body color to **Red**.
3. Close the **Design Mode** screen and run the report.

The changes will be shown.

4. Return to **Design Mode** and make the following changes. Change the alignment of the **City** body text to right justified. Make the **Zip Code** field underlined. Center the heading for **Address 1**. Change the **Font Size** for **State** to **12**. Change the **Font Name** for **Full Name** to anything other than what it is. Now, this is a ransom note. Run it.

Besides being perfectly awful, the report demonstrates what can be done with font attributes. In most cases, font attributes should be changed with discretion.

Fortunately, should a document ever reach “ransom note” status, you can restore the report to defaults quite easily.

5. Start **Design Mode**. On the **File** menu, select **Restore Defaults**.

All of the settings will be instantly restored both on the Design Mode screen and within the report itself. On columnar reports, this means that the column headings and data will be left justified for text fields and right justified for numeric fields. On tabular reports, this means that the column headings will be right justified for all fields, but the data will be left justified for text fields and right justified for numeric fields. All standard People-Trak font settings will be restored as well.

If you use auto-formatting, all of the font attributes are honored except for the Font Size. Font sizes are automatically determined by auto-formatting and all font sizes are set to the same size.

6. Close the **Adhoc Reports** screen, saving your changes. Close the **Explorer**.
7. This concludes this tutorial and lesson.

Lesson 6

Query Operators and Modifiers

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This lesson covers the advanced operators used for reporting on the individual parts of date fields. In addition, you will learn about modifiers that allow you to query against specific rows in a grid.

Tutorials

Using Date Operators: shows how to use the date operators to select records based on the month, day and year parts of a date.

Using Row Modifiers: demonstrates how to use row modifiers to identify the specific lines within a grid for comparison purposes

Using Date Operators

Date operators are used to compare parts of a date to specific values. Here's how to use them.

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. On the **Report Definition** tab, enter the following three **Field Names: Last Name, First Name, and Hire Date**.
4. On the **Query** tab, select the **Hire Date** field for the first query row.
5. In the **Operator** field, enter **MO=**.

This operator compares the month of the date to the numeric month value entered into the Contents column. The two must be equal.

Your cursor should now be in the Contents field. When the special date operators are used, the edit attributes for the Contents field are switched from the date attributes to a numeric attribute of either two digits (for the month and day) or four digits (for the year).

6. Enter **9** and run the report.

Note that all of the dates listed are in the month of September.

7. Change the **Operator** to **MO<>**.

This operator compares the month of the date to the numeric month value entered into the Contents column. The two must not be equal.

8. Run the report.

Note that all of the dates listed are not in the month of September; records from all other applicable months are listed.

9. Change the **Operator** to **MO>**.

This operator checks for records where the month in the date is greater than the value in the Contents column.

10. Run the report.

Dates listed in October, November, and December are shown.

11. Change the **Operator** to **MO>=** to include September as well.

12. Run the report.

13. Now try two more reports, one using **MO<** and another using **MO<=** operators to find those dates with months less than September and less than or equal to September.

The six Operator types (equal, not equal, greater than, greater than or equal, less than, and less than or equal) are also available for the day of the month and the year. Let's try one of each.

14. Set the **Operator** to **YR>** and the **Contents** to **2000**.

This will list those employees hired since the year 2000.

15. Run the report to see for yourself.

16. Now change the **Operator** to **DY=** and the **Contents** to **25** to list those employees hired on the 25th of any month, of which there may be none.

17. Run the report.

18. Close the **Document Viewer**.

There are very few time fields in People-Trak, but there is a set of time operators for both the hours and minutes of a time field. These work identically to the date operators.

19. Continue with the next tutorial

Tutorial 6.1 – Using Row Modifiers

You learned about how to use row modifiers on the Report Definition tab in an earlier lesson. Now, you will learn how to use row modifiers to tell People-Trak which lines of a grid-style screen to use for the query.

1. Update the sample report by changing the **Hire Date** field on the **Report Definition** tab to **Pay Rate**.
2. On the **Query** tab, change **Hire Date** to **Pay Rate**, **Operator** to **>** and **Contents** to **3000.0000**.

In this form, the query will return the last name, first name and pay rate for each employee with a pay rate greater than \$3,000.

3. Run the report and see.

All of the employees in the DEMO area of the database have one or more salary history records. How do you know which of these records is being used in the comparison? You did not specify. If you do not use a modifier, it is assumed that the Row Modifier is 1, which represents the current salary record for each employee.

4. Change the **Row Modifier** to **1** and try it.

You will see the same report you saw the last time because the query is identical.

5. Change the **Operator** to **<** and run the report again.

This time, the report will show all employees with a current pay rate less than \$3,000.

Now, let's look at another scenario. What if you wanted to check for employees where ANY pay rate record is less than \$3,000? You can do this by changing the Row Modifier to ******. Let's do just that.

6. Change the **Row Modifier** to ******.

The asterisk character is a wildcard. It means that the comparison process should check each and every salary history record for a pay rate less than \$3,000. Because older pay rates are typically less, we should see more records than the last time.

7. Run the report and you will see more records.

Note: The Pay Rate being printed is the Pay Rate for the first record (as determined by the Row Modifier column in the Report Definition grid) and thus may not correspond to the query. This is because the value for the first record (current pay rate) may not be the value that actually qualified the employee to be included in the report.

Sometimes you need to check the last record only, which is actually the first record (in this case "starting pay") that was entered (when records in the grid are sorted descending, as recommended). The **+** Row Modifier is provided for this purpose.

8. Change the **Row Modifier** to **+**.

This report will now list the current (topmost) pay rate for those employees who were initially hired with a pay rate under \$3,000.

9. Run the report to confirm this.

Finally, there are times when you wish to compare a specific row. When you need to do this, enter the row number directly into the Row Modifier column.

10. Change the **Row Modifier** to **2**.

This will change the meaning of our sample report as follows: show the first pay rate for each employee who has a second most recent pay rate under \$3,000.

11. Run the report.

Query modifiers are not limited to pay rates. They can be used with any of the records that are tracked in grids. Let's try another scenario.

12. On the **Report Definition** tab, change the **Pay Rate** field to the **Appraisal Next Date** field from the **Performance** category.

13. On the **Query** tab, replace the current query with a search of Performance Appraisal records with a **Appraisal Next Date** sometime greater than **January 1, 2005**. The equation should look like the following:

Appraisal Next Date * > 01-01-2005

14. Run the report.

This report will list the topmost next appraisal date for every employee who has any next appraisal date greater than the first day of January 2005.

Assuming that Performance Appraisals have been entered in descending order, what operator should you use to check the current next appraisal date? The first record can be specified by leaving the Row Modifier blank or by using 1. If the Performance Appraisals were entered in ascending order (newest at the bottom), what Row Modifier would you use then? (Answer: +)

Let's look at another example.

15. On the **Report Definition** tab, change the **Appraisal Next Date** field to **Dependent First Name**. In the **Calculation** field Enter **Count**.

16. Add the **Dependent Age** field on the next row.

17. On the **Query** tab, delete any rows.

Suppose we are planning a picnic, and we want to see how many children employees have between the ages of 2 and 16.

18. Enter the following equation for the query:

Dependent Age * Between 2 and 16

19. Run the report.

Hmm, why are there dependents with an age greater than 16 showing up? Because we didn't do something very important when working with grid-style fields such as

dependent name and age. We didn't put an "=" sign in their Row Modifiers on the Report Definition tab. Without the "=" sign, the report only displayed the first row of dependent information for records that had dependents that met the query criteria.

Let's fix the problem.

20. On the **Report Definition** tab, add an "=" in the **Row Modifier** field for both the **Dependent First Name** and **Dependent Age** fields.
21. Run the report again.

This time, your report will list all dependents with ages between 2 and 16, and ONLY those dependents. Success!

22. Close the **Document Viewer**, the **Adhoc Reports** screen and the **Explorer**.
23. This concludes this tutorial and lesson.

Lesson 7

Linking Query Equations

Contents

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Tutorial 7.2 – Mixing Link Types	32
Tutorial 7.3 – Simplifying Multi-Line Queries	35
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This lesson covers how to develop multi-line queries by linking query equations. Special instructions are provided for creating standard “point-in-time” queries.

Tutorials

Creating Simple Multi-Line Queries: shows how to refine your queries by using more than one equation.

Mixing Link Types: demonstrates how to use parentheses to clarify equations that mix link types.

Simplifying Multi-Line Queries: shows how to simplify multi-line queries by using the In and Not In operators.

Point in Time Queries: demonstrates the standard query for selecting records that are active at a specific point in time.

Tutorial 7.1 – Creating Simple Multi-Line Queries

So far, you have only created a single-line query. In this tutorial, you will learn how to create a simple multi-line query using the same link types.

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. On the **Report Definition** tab, enter the following three **Field Names: Full Name, Gender, and Age**.
4. On the **Query** tab, enter the equation shown below.

Gender = Female

This is an obvious query that will list those employees with the phrase Female in the Gender field.

5. Run the report for reference.
6. In the **Link** field of the first line, use the popup button to select **AND**. Then add the second equation shown below.

Age > 50

These two equations are linked with an AND. This means that both equations must be met and thus the only records listed should be those who are female and older than 50.

7. Run the report and see.
8. Now change the **Link** to **OR** and run the report.

What do you see? The OR indicates that if either equation is met, the employee will be listed. This means that females of any age will be listed and that all males and females over 50 will be listed. This is what the report demonstrates.

9. Change the query to the two-line example shown below and run the report.

Age >= 30 AND
Age <= 50

The results should list those employees with an age between 30 and 50. Switch the AND to an OR and run the report again. What happens this time? Everybody shows up. Why? Because every age is either less than 50 or greater than 30.

From these simple examples, you can see that the AND link tightens the filtering and the OR link loosens the filter. Let's try more equations.

10. Enter the equation set below.

Gender = Female AND
Age >= 50 AND
Last Name Starts B

11. Run the report and see what you get.

There is only one record that meets all of these criteria. If we entered another equation, it would likely eliminate even this record. Conversely, if we switched all of the AND operators to OR operators, the number of records would increase.

When used separately, multiple AND links narrow the search while multiple OR links widen the search.

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

Tutorial 7.2 – Mixing Link Types

In the prior tutorial, we used the two link types of AND and OR exclusively. That is certainly not a requirement. The link types can be mixed in any way. Here are a few working examples.

1. On the **Report Definition** tab, modify the sample report by adding the **Pay Rate** field.
2. On the **Query** tab, enter the equation set below.

Gender	=	Male	AND
Age	<	30	OR
Pay Rate	<	3000.0000	

This set combines the link types. Let's see what we get.

3. Run the report.

This set of equations could mean: include all men younger than 30 or all men and women with pay rates less than \$3000. It could also mean: include only men who are younger than 30 or have a pay rate less than \$3000. In complex equation sets, the interpretations can be endless.

When AND and OR operators are mixed in a set of equations, the equation processor evaluates the AND equations from top to bottom and then the OR equations from top to bottom. In the equations above, the employee would have to be either male AND younger than 30, OR be any gender of any age as long as the pay rate is less than \$3000. The interpretation that forces the employee to be male is ruled out because the gender and age are AND'ed and are evaluated before the OR statement.

Mixing ANDs and ORs can be somewhat confusing, but if filters of such complexity are required, they can be achieved. To simplify the reading of combined AND/OR equations, the equation processor allows the use of parentheses. Parentheses can be used to determine the order in which the equations are to be evaluated. They are useful when ANDs and ORs are used together to make the equation set more explicit.

To add a parenthesis, you can double-click in the appropriate '(' or ')' column. You also have the choice of typing in the appropriate parenthesis character in those columns.

4. Add parenthesis as shown below.

(Gender	=	Male	AND
Age	<	30)	OR
Pay Rate	<	3000.0000	

The simple addition of the parentheses to the equations used earlier makes the equations much easier to read (although, in this case, they do not actually change the result).

5. Run the report and see.

Parentheses can also be used to override the default order in which the individual equations are to be evaluated. For example, in our sample equations, the default order may not be what is desired. If only males who are greater than 30 or who have salaries

greater than \$3000 are to be included, the equations would be entered as shown in the next step.

- Change the location of the parenthesis as shown below.

Gender	=	Male	AND
(Age	>	30	OR
Pay Rate	>	3000.0000)	

By changing the parentheses, the Gender = Male equation is actually AND'ed against the result of the age and salary OR comparison.

- Run the report.

Let's look at one more example. Suppose we want to find all dependents of employees who are 19 and older as of the current year, not including spouses.

- On the **Query** tab, delete all existing rows.

- Enter the following query information, which is correct if we are in the year 2013:

Dependent Relation	*	<>	Spouse	AND
Dependent Age	*	>=	19	OR
Dependent Birth Date	*	YR<=	1994	

- On the **Report Definition** tab, delete all existing rows so we have a clean slate with which to work.

- Enter the following four **Field Names: Full Name, Dependent Relation, Dependent Age, and Dependent Birth Date.**

- An employee can have several dependents, so we need to add a **Row Modifier** of “=” to all 3 dependent fields to only show those dependents that meet the query criteria.

Note: You can only use a Row Modifier of “=” on the Report Definition if there is a field on the Query with a Row Modifier of “*”. This is the only time that the Query and Report Definition tabs are interdependent.

- Run the report.

You should see some spouses (and husbands and wives!) included on the report, which is not what you intended. This is because there were no parentheses in the formula so the AND part of the equation was done first. The OR part of the equation was then done by itself, which found everyone with a birth year less than or equal to 1990. This would include some spouses!

Note: Currently, the Relation table has Spouse, Husband and Wife as entries. As a result, all three are being used. You should decide whether to use Spouse or Husband/Wife and then remove the other option(s) from the table.

Let's fix the problems. First, we need to eliminate all spouses by using the Not In operator and all possible “spouse” values. Second, we need parentheses around the age related criteria.

14. For the **Dependent Relation** field, change the **Operator** to **Not In** and use the **Contents** popup to select **Spouse, Husband** and **Wife**. Change the parentheses as shown below.

Dependent Relation	*	Not In	Spouse, Husband, Wife	AND
(Dependent Age	*	>=	19	OR
Dependent Birth Date	*	YR<=	1994)	

Note: We will learn more about the Not In operator in the next tutorial.

15. Run the report.

You now have the correct results.

16. Close the **Document Viewer**.

17. Continue with the next tutorial.

Tutorial 7.3 – Simplifying Multi-Line Queries

Earlier in this lesson, we learned about simple multi-line queries. Now we are going to see how we can further simplify those types of queries with the In and Not In operators.

1. On the **Report Definition** tab, delete all rows and enter the **Department Code** and **Full Name** fields. Enter a **Sort Type** of **Sort** on both rows.
2. On the **Query** tab, delete all rows.

The In operator 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
```

with a single, simple query as shown in the next step.

3. Enter the following query:

```
Department Code    In    100, 300, 500
```

If you are entering the Contents field manually, enter the values separated by commas (the space after each comma is optional). If you use the popup in the Contents field, these values are returned and formatted for you.

4. Run the report to see the results.

The Not In operator 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
```

with a single, simple query as shown in the next step.

5. Enter the following query:

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

6. Run the report to see the results.

Simple and less typing!

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

Tutorial 7.4 – Point in Time Queries

Many times it is necessary to determine which records were active at a given point in time. It takes four equations to isolate a point in time. Here they are in plain English.

- Active prior to or during “date in time” AND
- Still active OR
- Active prior to or during “date in time” AND
- No longer active

Let’s translate these equations into something we can use in People-Trak. We will assume that we wish to know all of the employees active on January 1, 2006.

1. On the **Report Definition** tab, delete all rows and enter the **Full Name**, **Hire Date**, **Active**, and **Termination Date** fields.
2. On the **Query** tab, delete all rows and enter the equation shown below.

Hire Date <= **01-01-2006**

This equation provides a list of those employees hired on or before January 1, 2006.

3. Run the report.

The report should indicate that we are on the right track.

4. Now to limit the employees to those who are still active, add the equation shown below. Do not forget to add an **AND** on the first equation.

Active = **Y**

5. Run the report.

This report now includes only those employees who were hired on or before January 1, 2006, but it has excluded those who were hired prior to that date and terminated at some point prior to today. Thus, we need to expand the criteria to include those who are no longer active. It takes the following two equations.

Hire Date <= **01-01-2006** **AND**
Termination Date >= **01-01-2006**

6. Add these equations and include an **OR** on line two.

We now have two pairs of equations linked by an OR as shown below. The AND equations will be evaluated first and then the OR equation will be evaluated.

Hire Date <= **01-01-2006** **AND**
Active = **Y** **OR**
Hire Date <= **01-01-2006** **AND**
Termination Date >= **01-01-2006**

7. Run the report.

It should look good. However, to make the formula much easier to read, let’s combine the

first two equations with open and close parenthesis and combine the third and fourth equations within parenthesis.

8. Add the parenthesis as shown below.

```
(Hire Date          <=    01-01-2006   AND
Active              =     Y)          OR
(Hire Date          <=    01-01-2006   AND
Termination Date   >=    01-01-2006)
```

9. Run this report. The results will be the same but the formula is now easier to read.

This formula can be even further simplified and return the same results as the report you created above.

10. Change the query to use the simplified formula as shown below. (You can do this by deleting the third row in the existing equation and changing the parentheses.)

```
Hire Date          <=    01-01-2006   AND
(Active            =     Y)          OR
Termination Date   >=    01-01-2006)
```

11. Run this report. The results will be the same but the formula is now in its simplest form.

The point in time formula can be used over and over again. You can change the actual date to any date or a date range. To set a date range simply move the termination date forward in time to expand the period during which an employee can be active. People-Trak is shipped with a Point in Time report that is similar to the report you created, and you only need to change the dates and run it.

12. Close the **Document Viewer**, the **Adhoc Reports** screen and the **Explorer**.

13. Exit **People-Trak**.

14. This concludes this tutorial and lesson.