
People-Trak®

Technology Training Guide

Query and Reporting

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Lesson 1– Introduction to Reporting

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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. The reports can be customized as to which records are to be included and which fields from the database are to be printed.

Tutorial 1.1 – Create a Simple Report

1. Start People-Trak and select the **Personnel Management** module.
2. Select the **Document Explorer** option from the **Documents** menu. Documents are broken down into categories. For our purposes, click on the **General** category.
3. To begin a new report, use the **New Document** button on the toolbar or the **New Document** option on the **File** menu. A list of the different kinds of documents will appear. Select **Adhoc Report** and click **OK**. The **Adhoc Report** screen is displayed. The cursor will be positioned to the **Report Title** field on the **Specification** tab.
4. Change the **Report Title** to **Test Report**. The **Explorer Category** is **General** because we selected the **General** category in the **Document Explorer** before creating this report. Leave the **Explorer Category** as **General**. The **Organizer Category** allows you to pick the category in which you want your report to reside when in **Organizer** mode. Leave **Organizer Category** blank so that your report will not be added to the **Organizer**.
5. Switch to 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.
6. 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.
7. Click on the popup button in the **Field Name** column. 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 – corresponding to screens in People-Trak. 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. Select the **Personal** screen and then scroll down to highlight the **First Name** field. Double-click on the field or click the **OK** button to select the field.
8. 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 called defaults and can be overridden when necessary.
9. It may be surprising, but this simple selection of a field constitutes a report. Click on the **Run** button on the toolbar or use the **Run** option on the **File** menu to start 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 for each employee in the DEMO area of the database.
10. Now let's expand our report. Close the **Document Viewer**. Use the **Field Name** popup button to add the **Last Name** field to the report and then run the report again. Now we have a first and last name report for all employees in the company. 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 in 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.

11. Add the following five **Field Names** to our ever-improving report: **Address 1**, **Address 2**, **City**, **State**, and **Zip Code**. Now run the report. We now have a name and address report for the employees in the DEMO area of the database. 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. Close the **Document Viewer**.

Note: Listed in **All Fields** are several entries known as “compound fields”. Compound fields are fields that are created for you and that 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, created for you from the **First Name**, **Middle Name**, and **Last Name** fields.

12. The 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.
13. Position the cursor to the **Field Name** column for the first row. Change the first field from **First Name** to **Full Name** using the **Field Name** popup button, and **All Fields**. Then use the **Delete Row** function to delete the row containing the **Last Name** field. Then run the report. Note that the combined full name makes this report easier to read. There is another compound field that is even more useful in reporting. This is the **Full Name Backward** field. Change the **Full Name** field to this field using the **Field Name** popup button. Run the report.
14. The **Full Name Backward** field provides a combination of the **First Name**, **Last Name**, and **Middle Initial** 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 the first letter of the **Middle Name** followed by a period. Our name and address report is getting better by the minute. Close the **Document Viewer**.
15. To further simplify the report, delete the rows containing the **City**, **State**, and **Zip Code** fields and add the compound field that contains all three values. 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. Close the **Document Viewer**.
16. Thus far, all of the fields in our report have been taken from either the compound fields or the **Personal** screen. 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.
17. On the first blank row in the grid, select the **Employment Status** field from the **Status** screen. On the next row, select the **Pay Rate** field from the **Compensation** screen. 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.
18. Close the **Document Viewer**.
19. Delete the **Pay Rate** field from the report.
20. This report is used in the next tutorial. Read on.

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. Change to the **Specification** tab and position the cursor to 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.
2. A table supports the **Document Type** field, but there are only two document types: **Columnar**, which you have been using, and **Tabular**. Use the table 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.
4. 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.
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. We'll take a look at these now.

1. Position the cursor to the **Orientation** field. The field should indicate **Portrait**. As with the **Document Type**, the **Portrait** orientation is a default. In **Portrait** orientation, the page is oriented vertically. In **Landscape** orientation, the page is oriented horizontally.
2. Use the **Orientation** table to change the orientation of our report from **Portrait** to **Landscape**. 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. Change the **Orientation** back to **Portrait** and then position to the **Spacing** field and select **Double**. Run the report in double-space mode and 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.
4. Now, select the **Show Gridlines** check box. This feature causes gridlines to be inserted between rows and between columns. Try our report in this mode to see if you like it. You can see that the white space is contained within the gridlines, which can assist in the annotation process.
5. 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.
6. Close the **Document Viewer** and the **Document Explorer**, without saving the report.
7. This tutorial and this lesson are complete.

Notes

Lesson 2 – Introduction to Query

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Tutorial 2.1 – Developing Simple Queries

1. Select the **Personnel Management** module, and then select the **Document Explorer** from the **Documents** menu.
2. Create a new **Adhoc Report** using what you have learned in prior lessons. Give your new report the title **Test Query**. Position to the **Report Definition** tab and select the following three fields in the order shown:

Last Name
Gender
Age

3. Position the cursor to the **Query** tab. Now let's 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. Close the **Document Viewer**.
4. Enter the following query equation:

Gender = **Female**

5. **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.
6. 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”.
7. Close the **Document Viewer** and change the query to look for males. Run the report and note how the report has changed. Only the males should be listed.
8. Let's try some other options based on the **Last Name** field. Change the query to the following and run the report.

Last Name = **Wilson**

9. There are two employees with a **Last Name** of **Wilson**, so the two employees are listed.
10. 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. Now change the **Contents** to **Bogus** and run the report. There is no employee with the last name **Bogus** and the following message is printed on the report:

No information to report

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

First Name = **Donald**

-
12. 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.
 13. In some queries, you may wish to look for fields that do not contain a value. Clear the **Contents** field completely. Now run the report again. The report should indicate that there are no records that have a blank **First Name**. There are a number of records, however, that have a blank **Other ID** field. Change the query to the following and run the report.

Other ID =

14. You should see a list of the employees who have nothing in the **Other ID** field.
15. 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.
16. Change the **Field Name** to **Hire Date**. Then position the cursor to the **Contents** field. Note that the **Date** popup button is now adjacent to the field. Enter an invalid date such as **33-33-3333** and try to run the report. The invalid date will be rejected.
17. Now change the **Field Name** to **City** and then return to the **Contents** field. Note that there is a table popup button adjacent to the field. 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.
18. Numeric fields are also validated for length and format. Change the **Field Name** to **Pay Rate** and try to enter an alphabetic character. This will not be allowed. Try a rate such as **99.99999** and press the **TAB** key. Since the **Pay Rate** field cannot accept five digits to the right of the decimal point, the value is adjusted.
19. 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. 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 message shown below is displayed:

Field and contents are not compatible
20. 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.
21. 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.

1. The **Contains** operator is used to find records where the field specified contains the contents somewhere. Try the equation shown below.

Last Name **Contains** **ils**

2. At first glance, this query seems odd, but it will return all the records that have the three characters **ils** somewhere in the **Last Name**. This includes two **Wilson**s and one **Pilsner**. For the inverse query, change the **Operator** to $\langle \rangle$ CN, which is used to list those records that do not contain **ils** in the **Last Name**.
3. The **Starts** operator is used to find records where the field specified starts with the phrase specified in the **Contents**. Try the equation shown below.

Last Name **Starts** **S**

4. This equation will return every record that has a **Last Name** starting with **S**. You are not limited to a single character. You could enter the equation below to find employees with **Last Name** starting with the seven-character phrase **Carring**. There is one. Try it and see. This will find all of the records that start with this phrase.

Last Name **Starts** **Carring**

5. The inverse **Operator** is $\langle \rangle$ ST. This will find all of the records that do not start with this phrase.
6. The **Ends** operator is used to find records where the field specified ends with the phrase specified in the contents. The equation below is an example you can try yourself.

Last Name **Ends** **son**

7. 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. Try the following equation. It will list all employees with an age greater than 21. If you change the **Operator** to “>=”, you will also include those employees who are currently 21.

Age **>** **21**

8. The numeric operators can also be used on text fields. Try the equation shown below.

Last Name **>** **Jones**

9. The report will list all employees with a **Last Name** that is greater (alphabetically speaking) than **Jones**. This would include **Stern** and **Wilson**, but not **Jamison**.
10. If you switch the query to that shown below, the report would include **Adams** and **Healy**, but not **Stern**.

Last Name **<** **Jones**

11. 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.
2. Position the cursor to the **Contents** field. Note that there is a popup button adjacent to the field. This button is used to capture the range. Click the button now to display the **Between** screen.
3. 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.
4. Enter **30** in the **From Value** field and **40** in the **To Value** field. 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.
5. The **Between** screen makes entering ranges quite easy, but you can actually enter them manually. Return the cursor to the **Contents** field and 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

6. 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 1-01-2004 And 12-31-2006

7. 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.
8. 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. Change the operator in the equation listed above 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.
9. 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.
10. Close and save your report.
11. This tutorial and this lesson are now complete.

Notes

Lesson 3 – Sorting and Calculating

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Tutorial 3.1 – Simple Sorting

1. Select the **Document Explorer** option from the **Documents** menu. Start a new document using the **New Document** button on the toolbar. When the list of document types is displayed, select **Adhoc Report**.
2. Name the report **Sample Sorting Report** and place it in any category you desire.
3. Select the **Report Definition** tab and 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.)
4. Set the **Sort Type** column on the **Last Name** field 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. Run the report and you will now see that the records are sorted alphabetically by **Last Name** in ascending order.
5. 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.
6. Deactivate sorting on the **Last Name** field by setting the **Sort Type** column to **None**. Activate sorting on the **Age** field by setting **Sort Type** column to **Sort**. Run the report. The records are listed in ascending order by **Age**. Switch the **Sort Order** to descending and run the report again.
7. That is simple sorting with a single field. Now let’s try simple sorting with two fields. First, remove the sort on **Age**. 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 toolbar to push the **Last Name** row down. Now, we can double-sort.
8. Set the **Sort Type** column on the **City** field 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.
9. Let’s make this report much easier to read. Clear the **Repeat** check box for the **City** column 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.
10. When using compound sorts, it is not necessary to use the same **Sort Order** on each column. Change the **Sort Order** on the **Last Name** field 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.
11. As a final step in this tutorial, reverse the **Sort Order** for the **City** column and run the report. Now both columns are in descending order.
12. 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. Switch to the **Specification** tab and verify that the **Show Gridlines** check box is cleared. Now return to the **Report Definition** tab and change the **Sort Type** column on 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. Reselect the **Repeat** check box for the **City** field and run the report again. Note that even when repeating is active, the break makes the report easier to read.
2. Switch to the **Specification** tab and select the **Show Gridlines** check box. Run the report and note that a horizontal line is drawn between each city. 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. Clear the **Show Gridlines** check box.
3. As with the basic sort, you can have compound breaks. Let’s insert a new field. Click the **Insert Row** button to insert a blank row after the **City** field. 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**. Run the report and see how it looks. That is a triple sort with a double break.
4. 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. 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. 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.
5. Close the **Document Viewer**.
6. 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. Position to the **Sort Type** column for the **City** field and 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. Now move to the **Sort Type** column for the **Supervisor Email** field and 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.
3. An email break works just like a page break in normal use. 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.
4. 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.
5. 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. Click the **Email Document** button on the toolbar to send the email.
6. When using email breaks, the email screen is not displayed because the report itself defines the email criteria. Thus, the first thing you will see is the email simulation for the first email. This email is directed to the first supervisor in the break. Attached to the email is the corresponding page (or pages) of the report.
7. Click the **OK** button for each email simulation to process through the report sections. When the sections are complete, the email simulations will stop. In production, the email simulations are not displayed. Instead, the emails are sent directly as defined.
8. Close the **Document Viewer**.
9. Remove the **Supervisor Email** field from the report.
10. Close and save the **Adhoc Report** screen.
11. 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.
12. The email break feature can also be used with letters and forms, but it works a little differently. Let's demonstrate this.
13. Open the **Default Reports** category in the **Document Explorer** and select 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. Position to the **Sort By 1** field. Use the popup button to select the **Last Name** field. These letters will now be sorted by **Last Name**.

-
14. 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.
 15. Change the first sort 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 **Send Email** option is used within the **Document Viewer**, individual emails will be sent to each employee.
 16. Change the first sort field back to **Last Name**. Note what happens. The **Email Break** is automatically disabled because you cannot email break on a non-email field.
 17. This capability works the same way with output forms.
 18. Close the **Letter** screen, without saving.
 19. 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. Open the **Sample Sorting Report** we created earlier.
2. 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 (on the report) that indicates the number of records in the sort.
3. Subtotals are provided as long as there is an **Eject** or a **Break** used in the report. Change the **Eject** to **Break** and run the report again. This time, you can see the counts for each city without needing to move between pages. 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.
4. Now change the **Break** to a **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. Change the **Sort Type** on the **City** field back to **Break** and continue with the next step.
5. Now that you have learned about counts, let’s learn about the other calculation types. 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. Try the report. Note that the count for the records within the city remains while a minimum age calculation is provided. Add the **Age** field to the report a second time at the bottom of the report and place a **maximum** calculation on this field. 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.
6. The next calculation to learn about is “average”. 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.
7. 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. 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. 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.
8. We have one more calculation type to learn about: “total”. The “total” calculation is used to sum the contents of numeric fields. To demonstrate it, we need to modify our sample report. 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. 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.

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9. Let's change this report to something you will need. 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. 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 setting the **Print** column off for all three 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.
 10. 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.
 11. 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. 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. Run the report. The data in the DEMO area of the database indicates relative parity among gender.
 12. 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.
 13. Close and save the report. Close the **Document Explorer**.
 14. This tutorial and this lesson are complete.

Notes

Lesson 4 – Report Modifiers

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Tutorial 4.1 – Using Date Field Modifiers

1. Select the **Document Explorer** option from the **Documents** menu. Start a new document using the **New Document** button on the toolbar. When the list of document types is displayed, select **Adhoc Report**.
2. Select the **Report Definition** tab and enter the following three **Field Names: Full Name** and **Hire Date** twice. Run the report for reference purposes. Now, let's demonstrate the modifiers.
3. Set the **Field Modifier** for the first **Hire Date** to **M** and run the report. The report will now list the month from each **Hire Date**.
4. Set the **Field Modifier** for the first **Hire Date** to **D** and run the report. The report will now list the day from each **Hire Date**.
5. Set the **Field Modifier** for the first **Hire Date** to **Y** and run the report. The report will now list the year from each **Hire Date**.
6. That's how the **Field Modifiers** work separately. Now let's show them together. 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.
7. 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. 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".
8. 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. Change the **Row Modifier** on the second **Salary Date** 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. Change the **Row Modifier** on the second **Salary Date** row to **2** and the **Row Modifier** on the third **Salary Date** 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. Change the **Row Modifier** on the third **Salary Date** to “+” and run the report. The “+” modifier lists the last (bottom-most) salary date for each employee.
5. You can report on fields from any screen. Let’s try the simple version first by creating a report to show the **Salary Date** and **Pay Rate** for the second and third rows.
6. 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 change the report to include recent review history. There are both salary and Performance Appraisal dates in People-Trak. You might want to see both. Make your report rows look like this:

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

7. Run the report and 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.
8. 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. Modify the report to look like the following example.

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

9. 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.
10. Run the report. Notice that the salary information for the two most recent reviews is printed vertically rather than side by side as in the previous example.
11. 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. 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. 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. If you want each employee’s salary history to be placed on a separate page, change the **Break** on the **Full Name** field to **Eject**. Try it now. This is a report that WILL be used. Change the **Eject** back to **Break**.
4. Let’s create another history report using data from the Performance Appraisal screen. Delete the salary fields and add the following fields: **Appraisal Completion Date**, **Appraisal Type**, **Appraisal Items Rating**, **Appraisal Next Date**, and **Appraisal Next Type**. Set the **Row Modifiers** for these fields to “*” and set a **Sort** on the **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.

5. 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. Switch to the **Query** tab and insert the equation shown below.

Pay Rate * > **3000.0000**

3. 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. 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. Run the report and study it.
5. 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.
6. 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 reviews for each employee that were performed by a specific reviewer 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.
7. Close the **Adhoc Report** screen without saving, and close the **Document Explorer**.
8. This tutorial and this lesson are complete.

Lesson 5 – Design Mode

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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.

1. Select the **Document Explorer** option from the **Documents** menu. Start a new document using the **New Document** button on the toolbar. When the list of document types is displayed, select **Adhoc Report**.
2. On the **Specification** tab, clear the **Auto Format** check box.
3. Select the **Report Definition** tab and enter the following four **Field Names: Full Name** and **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. Close the **Document Viewer**.
4. Click the **Design Mode** button on the toolbar. The **Design Mode** screen is displayed. You should see your four fields spread across the grid.
5. To change a column heading, double-click on the heading itself. This will activate editing in that cell of the grid. Try it now and change the first **Pay Rate** heading to **Current Pay**. Change the second **Pay Rate** heading to **Prior Pay**. Change the third **Pay Rate** heading to **Starting Pay**.
6. Close the **Design Mode** screen using the **Exit** option on the **File** menu. Then run the report. Now the report is both meaningful and useful.
7. The headings that have been modified will remain modified until you change them; they are part of the report. Change the heading of the last **Pay Rate** field to **Initial Pay** and run the report again. That's all there is to it.
8. 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.
9. Continue with the next tutorial.

Tutorial 5.2 – Changing Column Widths

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. Select **Design Mode** using the **Design Mode** button on the toolbar. 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. Position the cursor 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. 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.
4. 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. 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.
5. 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.

Tutorial 5.3 – Changing Font Attributes

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

1. Font attributes can be changed using word-processor-like features in **Design Mode**. Start **Design Mode** and click on the heading for **Full Name**. Click on the **Bold** button on the toolbar to change the heading to bold text. Click on the body for the **Full Name** field and use the **Text Color** button on the toolbar to change the body color to **Red**. Close the **Design Mode** screen and run the report. The changes will be shown.
2. 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.
3. Besides being perfectly awful, the report demonstrates what can be done with font attributes. In most cases, font attributes should be changed with discretion.
4. Fortunately, should a document ever reach “ransom note” status, you can restore the report to defaults quite easily. Start **Design Mode** and then select the **Restore Defaults** option on the **File** menu. All of the settings will be instantly restored both on the **Design Mode** screen and within the report itself.
5. 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. Exit the **Adhoc Report** screen and the **Document Explorer**.
7. This tutorial and this lesson are complete.

Lesson 6 – Query Operators and Modifiers

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Tutorial 6.1 – Using Date Operators

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

1. Select the **Document Explorer** option from the **Documents** menu. Start a new document using the **New Document** button on the toolbar. When the list of document types is displayed, select **Adhoc Report**.
2. Select the **Report Definition** tab and enter the following three **Field Names: Last Name, First Name, and Hire Date**.
3. Select the **Query** tab and select the **Hire Date** field for the first query row.
4. Enter **MO=** in the **Operator** field. This operator compares the month of the date to the numeric month value entered into the **Contents** column. The two must be equal. Position the cursor to 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). Set the **Contents** to **9** and run the report. Note that all of the dates listed are in the month of September.
5. 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. 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.
6. 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. Run the report. Dates listed in October, November, and December are shown. Change the **Operator** to **MO>=** to include September as well. Try it now.
7. 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.
8. 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.
9. Set the **Operator** to **YR>** and the contents to **2000**. This will list those employees hired since the year 2000. Run the report to see for yourself. Now change the **Operator** to **DY=** and the **Contents** to **20** to list those employees hired on the 20th of any month, of which there may be none.
10. 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.
11. Continue with the next tutorial.

Tutorial 6.2 – 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**. Delete any rows on the **Query** tab.
2. Add the **Pay Rate** field to the **Query** tab and set the **Operator** to “>”. Set the **Contents** field 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. Run it and see.
3. 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. 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.
4. 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 “*”. 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. Try it 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.

5. 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. Change the **Row Modifier** on the **Query** tab in the sample report 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. Run the report to confirm this.
6. 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. Use **2** now. 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. Try the report.
7. 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. Change the **Report Definition** to include the **Appraisal Next Date** field from the **Performance Appraisal** screen. You can delete the **Pay Rate** field if you wish.
8. Change the **Query** for this report to search all Performance Appraisal records for an **Appraisal Next Date** sometime greater than **January 1, 2005**. The equation should look like the following:

Appraisal Next Date * > 01-01-2005

-
9. Once you have the equation entered, try 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.
 10. 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? Try it and see if it works.
 11. Close the **Document Viewer**.
 12. Let's look at another example. Change the **Pay Rate** field on the **Report Definition** tab to **Dependent First Name**. Enter **Count** in the **Calculation** field.
 13. Add the **Dependent Age** field on the next row.
 14. Delete any rows on the **Query** tab.
 15. Suppose we are planning a picnic, and we want to see how many children employees have between the ages of 2 and 16. Enter the following equation for the query:

Dependent Age * Between 2 and 16
 16. 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.
 17. Let's fix the problem. Go to the **Report Definition** tab and add an "=" in the **Report Modifier** field for both the **Dependent First Name** and **Dependent Age** fields.
 18. Run the report again. This time, your report will list all dependents with ages between 2 and 16, and ONLY those dependents. Success!
 19. Close the **Document Viewer**.
 20. Close the **Document Explorer**, without saving the report.
 21. This tutorial and this lesson are now complete.

Lesson 7 – Linking Query Equations

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Tutorial 7.1 – Creating Simple Multi-line Queries

1. Select the **Personnel Management** module, and then select the **Document Explorer** option from the **Documents** menu. Start a new document using the **New Document** button on the toolbar. When the list of document types is displayed, select **Adhoc Report**.
2. Select the **Report Definition** tab and enter the following three **Field Names: Full Name, Gender, and Age**.
3. Select the **Query** tab and enter the equation shown below.

Gender = Female

4. This is an obvious query that will list those employees with the phrase **Female** in the **Gender** field. Run the report for reference. Now add an **AND** link to the first line and the second equation shown below.

Age > 50

5. 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. Run the report and see.
6. 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.
7. Change the query to the two-line example shown below and run the report.

Age >= 30 AND
Age <= 50

8. 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.
9. 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 are a few records that meet all of these criteria. If we entered another equation, it would likely eliminate even these records as well. Conversely, if we switched all of the **AND** operators to **OR** operators, the number of records would increase.
12. When used separately, multiple **AND** links narrow the search while multiple **OR** links widen the search.
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. Modify the sample report by adding the **Pay Rate** field to the bottom of the **Report Definition**.
2. Enter the equation set below into the **Query** tab.

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

3. This set combines the link types. Let's see what we get. 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.
4. 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.
5. Mixing **AND**'s and **OR**'s 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 **AND**'s and **OR**'s are used together to make the equation set more explicit. To add a parenthesis, you can either type in the correct symbol or click on the column.

(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). Try it and see.

6. 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 this way.

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. Try this change and run the report.

-
7. Close the **Document Viewer**.
 8. 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. Clear the **Report Definition** tab so we have a clean slate with which to work.
 9. Enter the following four **Field Names: Full Name, Dependent Relation, Dependent Age, and Dependent Birth Date**.
 10. 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.
 11. Clear the **Query** tab.
 12. Enter the following query information, which is correct if we are in the year 2008:

Dependent Relation	*	<>	Spouse	AND
Dependent Age	*	>=	19	OR
Dependent Birth Date	*	YR<=	1989	

13. 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 1989. 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.

14. 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 as follows:

Dependent Relation	*	Not In	Spouse, Husband, Wife	AND
(Dependent Age	*	>=	19	OR
Dependent Birth Date	*	YR<=	1989)	

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. Clear the **Report Definition** tab and enter the **Full Name** and **Department** fields.
2. Clear all current equations in the **Query** tab.
3. 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	=	100	OR
Department	=	300	OR
Department	=	500	

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

4. Enter the following query:

Department **In** **100, 300, 500**

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

5. Run the report to see the results.
6. 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	<>	100	AND
Department	<>	300	AND
Department	<>	500	

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

7. Enter the following query:

Department **Not In** **100, 300, 500**

8. Run the report to see the results.

Simple, and less typing!

9. Close the **Document Viewer**.
10. 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. Clear the **Report Definition** tab and enter the **Full Name**, **Hire Date**, and **Active** fields.
2. Clear all current equations in the **Query** tab. Enter the equation shown below.

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

3. This equation provides a list of those employees hired on or before January 1, 2006. Run the report. The report should indicate that we are on the right track. Now to limit the employees to those who are still active, add the equation show below. Do not forget to add an **AND** on the first equation.

Active = **Y**

4. 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**

5. Add these equations and include an **OR** on line two. We now have two pairs of equations linked by an **OR** as shown below.

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

6. Run the report. It should look good. However, to ensure the results, combine the first two equations with open and close parenthesis and combine the third and fourth equations within parenthesis. This is shown below.

(Hire Date <= **01-01-2006** **AND**
Active = **Yes)** **OR**
(Hire Date <= **01-01-2006** **AND**
Termination Date >= **01-01-2006)**

7. Run this report and you will obtain the results desired.

-
8. This formula can be even further simplified and return the same results as the report you created above. The simplified formula is shown below:

Hire Date <= **01-01-2006** **AND**
(Active = **Yes** **OR**
Termination Date >= **01-01-2006)**

9. 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.
10. Close the document without saving, and close the **Document Explorer**.
11. This tutorial and this lesson are complete.

Notes

Lesson 8 – Date Variable Substitution

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Tutorial 8.1 – Entering Date Variables

Date variables cannot be keyed directly into the Contents column. They must be selected from the Date Variables table. We will learn how to do this in this tutorial.

1. First, we need to update some data to be more current for upcoming reports. For any three employees, go to the **Performance Appraisals** screen and change the **Next Date** in the top row of the grid to be one week from today.
2. Select the **Document Explorer** option from the **Documents** menu. Start a new document using the **New Document** button on the toolbar. When the list of document types is displayed, select **Adhoc Report**.
3. Select the **Report Definition** tab and enter the following **Field Names: Full Name** and **Hire Date**.
4. Select the **Query** tab and enter **Hire Date** as the first field. Set the **Operator** to “>”. At the **Contents** column, click on the popup button.
5. A screen with three buttons is displayed. The **Use Calendar** button is used to select a date from a calendar. The **Use Date Variables** button is used to select a date variable from a list of variables. The **Cancel** button is used to cancel the process. Select the **Use Date Variables** button. The list of date variables, sorted by categories, is displayed.
6. Let’s assume you are looking for those employees hired since the beginning of last month. Highlight the **Months** category, and notice that the choices appearing to the right of the category all now pertain to months.
7. Select **START-OF-PRIOR-MONTH** from the displayed list.
8. Run the report. You can see that there were no new employees hired since the beginning of last month. Let’s tweak the report a little bit and run it again.
9. Select the **Years** category. Select **START-OF-PRIOR-YEAR**. The equation will now select those employees with a hire date since the start of last year. Run the report. If there are any employees with hire dates since the start of last year, they will be listed.
10. Set the **AND** link on the first row. Then add **Hire Date** on the second row. Set the **Operator** to “<”. Use the **Date Variable** table again using the category **Years** and select **END-OF-PRIOR-YEAR**. Run the report. This sample report will now list those employees with a hire date between the start of last year and the end of last year.
11. Close and save the document.
12. Continue with the next tutorial.

Tutorial 8.2 – Performance Appraisals Due Example

This tutorial guides you through the creation of a “real world” report: a Performance Appraisals Due report. The report will be demonstrated for various date periods.

1. Create a new **Adhoc Report** and use the title: **Performance Appraisals Due**. Enter the following three fields in the **Report Definition** tab: **Department Name**, **Full Name**, and **Appraisal Next Date**. Set an **Eject Sort Type** on the **Department Name** field. Set a **Sort** on **Full Name**. Set a **Sort** on the **Appraisal Next Date**, but use descending order. Set “*” as the **Row Modifier** on the **Appraisal Next Date**.
2. Test the report. The report should list all next reviews for each employee sorted by next review date. Each time the **Department Name** field changes a new page will start. This report is designed for distribution to each manager with a list of the employees who are due for reviews over a specified period. At this point, the report includes all employees and all reviews. Let’s correct that with a query.
3. One typical version of this report is run at the end of each week and is designed to list the Performance Appraisals due the following week. It would use the query equations listed below.

Appraisal Next Date * >= START-OF-NEXT-WEEK AND
Appraisal Next Date * <= END-OF-NEXT-WEEK

4. Enter the equations and run the report. The next review dates you set are next week, so they will show up in this report. This report has an error. It shows all next reviews for any employee who has a review due next week. Change the **Row Modifier** for the **Appraisal Next Date** field on the **Report Definition** to “=”. Now the report will work fine.
5. This basic report can be modified to produce reports that look ahead over any of the available periods. The most useful for Performance Appraisals are the next month, and the next 30 days. The appropriate equations are shown below.

Appraisal Next Date * >= START-OF-NEXT-MONTH AND
Appraisal Next Date * <= END-OF-NEXT-MONTH

Appraisal Next Date * >= TODAY AND
Appraisal Next Date * <= THIRTY-DAYS-FORWARD

6. Note that the second pair of equations makes use of the **TODAY** variable to start the 30 day period from today through a day 30 days from now.
7. Another useful variation of this report is a version that looks backward for a topmost next review that is prior to today. This would represent reviews that were scheduled and not performed. To create this report, you would change the **Modifier** on the **Query** tab to be blank or **1** and then set the date variables to **START/END-OF-PRIOR-WEEK** or **START/END-OF-PRIOR-MONTH**.
8. Close the document and close the **Document Explorer**.
9. This tutorial and this lesson are complete.

Notes

Lesson 9 – Advanced Lookup and Favorites

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Tutorial 9.1 – Creating Custom Queries

The Custom tab on the Lookup screen is used to look up records using a simple single-line equation.

1. Select the **Open Employee** option from the toolbar to start a **Lookup**. Select the **Custom** tab. The **Custom** tab contains three fields: **Field Name**, **Operator**, and **Contents**. These three fields are used to perform single line queries for record lookups.
2. Position the cursor to the **Field Name** field. You can enter a field name if you know it by name or you can select the field by using the popup button. Enter **City**.
3. The cursor is positioned to the **Operator** field. This field is supported by a list of operators in the same way as the **Query** grid. The valid operators are determined by the type of field. Enter the “=” operator.
4. The cursor is positioned to the **Contents** field. This field takes on the edit attributes of the field specified. For the **City** field, this means that the **Contents** field is supported by the **City** table. Select any city from the table.
5. Click on the **Search** button to start the search. The list box shows all of the records that match your query. You can select any record from the list or you can start another query. Instead of selecting a record, use the **Clear** button to clear the query.
6. Return to the **Custom** tab. Enter the following query: **Hire Date > 01-01-2006**. Note that the **Contents** column takes on the edit characteristics of a date field, allowing you to choose from either a calendar or a date variable. Select **Use Calendar** to perform this lookup, and then **Cancel** the lookup to close the screen.
7. Continue with the next tutorial.

Tutorial 9.2 – Creating a Favorite

Favorites are queries that you create and save. A favorite is essentially a named query that you can recall when performing a lookup. This tutorial shows how to create a favorite.

1. Select **Document Explorer** from the **Documents** menu.
2. Select the **New Document** option from the toolbar of the **Document Explorer**. Select **Lookup** as the document type. The **Lookup** screen (the screen used for creating lookup documents) is displayed.
3. Enter **My Favorite** in the **Lookup Name** field, and choose **<Blank Category>** as the **Explorer Category**.
4. On the **Query** tab, enter the following set of equations.

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

5. You will recall that a similar set was used in an earlier lesson. Test the query using the **Run** button on the toolbar. The test is a report that uses the standard lookup fields.
6. Exit the **Lookup** screen and save the favorite. Close **Document Explorer**.
7. Continue with the next tutorial.

Tutorial 9.3 – Using Favorites

This tutorial shows how to use favorites. As an example, we will use the favorite created in the prior tutorial.

1. Click the **Open Employee** button on the toolbar to start the lookup process. When the **Lookup** screen is displayed, select the **Favorites** tab.
2. The list box on the **Favorites** tab shows all of the Lookup documents that you have created. At the present time, the only favorite will be the Lookup document named **My Favorite** that we just created in the previous lesson.
3. Click on **My Favorite** to select the favorite. Then click on the **Search** button to perform the query associated with the favorite. The list of records presented should match the test report run when the favorite was created. In the future, additional records may be present as records change and then match the criteria of the query. The query associated with a favorite is dynamic. The query equations are executed when the favorite is processed.
4. The results of a favorite are the same as the results of any lookup. You can select any record and return the entire group for editing.
5. The query associated with a favorite can be modified “on the fly” if desired. When a favorite is executed, the query equations from the **Lookup** document are moved into the grid on the **Advanced** tab. (You do not normally see these because you are positioned to the **Favorites** tab.) If you wish to make a change to the query and to select records again, you can do so.
6. Position to the **Advanced** tab and you will see the query equations that you entered when you created the favorite. Modify the first line to look for **Female** instead of **Male**. Click on the **Search** button to perform the lookup. The list of records will change to reflect the new query.
7. The query equations associated with the favorite are not permanently changed. We are merely taking advantage of the fact that the equations are loaded into the grid on the **Advanced** tab just as if they had been keyed by hand.
8. Close the **Lookup** screen and close the employee.
9. This tutorial and this lesson are complete.

Lesson 10 – Other Document Types

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Tutorial 10.1 – Standard Reports

Standard Reports are those reports that have a pre-defined format. You can determine what employee records are to be included in the report, but the layout of the report is already set. Let's create a standard report.

1. Select the **Document Explorer** option from the **Documents** menu.
2. Start a new document using the **New Document** icon on the toolbar. When the list of document types is displayed, select **Standard Report**. On the **Standard Report** screen, name the report **My Gender Graph** and put it into the <**Blank category**>. Leave the **Comment** field blank.
3. A standard report document is composed of a standard report template and a query (which could be blank). Thus, we must select a report template in the **Standard Report** field.
4. Use the popup button in the **Standard Report** field to display a list of the existing report templates. Select the **Workforce Distribution by Gender** template.
5. Position to the **Query** tab and as expected, there are no query equations. Thus, if we run the report, we will see all records in the current company, including those that might be terminated or inactive. Run the report now.
6. The report is a pie chart that graphically indicates the gender makeup of the company. In this instance, it is all employees in the company regardless of status. Scroll down to see the details that support the graph. Close the **Document Viewer**. Now, let's enhance the document by adding a query.
7. Select the **Query** tab and enter the simple equation shown below.

Gender = **Male**

8. This query will limit the employee records in the report to those whose **Gender** is **Male**. Run the report. The graph should indicate that a report that queries only males should list only males. Close the **Document Viewer**. This time, change the query to the more meaningful equation below.

Active = **Y**

9. Now run the report. This report will provide a chart with all currently active employees. Now that's a useful report.
10. Close the **Document Viewer** and close and save the **Standard Report** screen. Your new report should now be listed in the **Document Explorer** in the <**Blank category**> category.
11. Close the **Document Explorer**.
12. Continue with the next tutorial.

Tutorial 10.2 – Cluster Reports

Cluster Reports allow you to run several reports together as a group, without having to select and run each report separately. This feature is particularly valuable if you tend to run a series of reports at the end of each month, or merely on a frequent basis.

1. Select the **Document Explorer** option from the **Documents** menu.
2. Start a new document using the **New Document** icon on the toolbar. When the list of document types is displayed, select **Cluster Report**. Enter **Monthly Reports** for the **Cluster Name** and select **General** for the **Explorer Category**.
3. Position to the **Cluster Type** field. This field is used to specify the type of cluster report that you wish to create. Use the popup button to display the list. There are two types: **Form/Letter/Label** reports that create one page per record and **Other** reports that create reports with multiple records per page. You cannot create a cluster report that contains both types. Let's start with an "other" report by selecting **Other** from the list.
4. Move to the **Documents** tab. Use the popup button to display a list of the available reports. Only those reports that are multi-record reports will be shown.
5. Select the **Salary History by Employee** report from the **Compensation** category, the **Current FMLA Leave** report from the **Leave of Absence** category, and the **Headcount** report from the **Headcount** category.
6. Run the document. Each report is processed independently and you may be able to see the progress bar for each. When the reports are complete, they are merged together and then shown within the **Document Viewer**.
7. The reports are discrete within the **Document Viewer**. The page counter on the toolbar reflects the total number of pages in the report, but each document's pages are numbered from 1 to the total number of pages in the document. Font settings, alignment, spacing, and grid lines are all unique to each document. Move through the pages of the report and you can see that each report is unique. If you choose to print the report, one stream of pages will be printed.

Note: It is not possible to export all of the reports in a cluster to either a spreadsheet or an editor. If you do so, only the last report will be exported.

8. Close the **Document Viewer**. Delete all documents listed on the **Documents** tab. Move to the **Specification** tab. Change the **Cluster Type** to **Form/Letter/Label**. Move back to the **Documents** tab.
9. Use the popup button to display a list of the available reports. This time, only those reports that are "one record per page" such as forms, letters, and labels are shown.
10. Select any three reports from the list. When complete, run the cluster report. Each report is processed independently as before. You may find that forms and letters and labels process a little more slowly than most adhoc and standard reports. When the reports are complete the **Document Viewer** is displayed.
11. With this type of cluster report, there are actually multiple documents for multiple records. Thus, the **Document Viewer** uses the Record toolbar so that you can move between the documents for specific records.
12. Close the **Document Viewer** and close the **Cluster Reports** screen.

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13. Close the **Document Explorer**.
 14. Exit People-Trak.
 15. This tutorial and this lesson are complete.

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