PHPExcel AutoFilter Reference Developer Documentation

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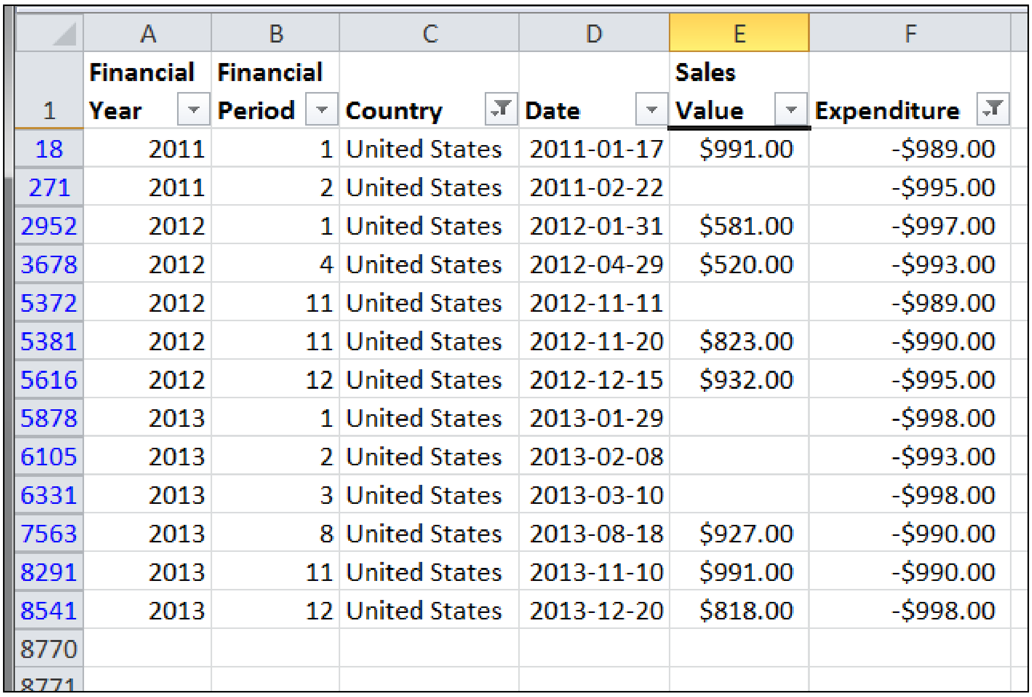
1. Contents

2. AutoFilters

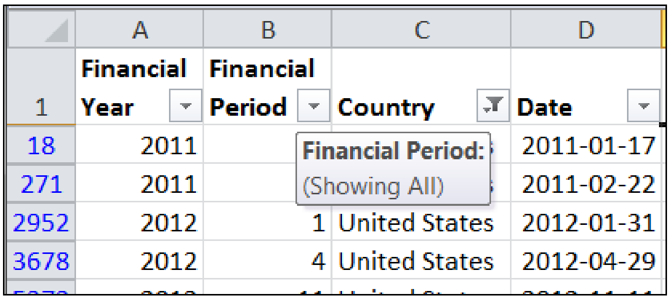
Each worksheet in an Excel Workbook can contain a single autoFilter range. Filtered data displays only the rows that meet criteria that you specify and hides rows that you do not want displayed. You can filter by more than one column: filters are additive, which means that each additional filter is based on the current filter and further reduces the subset of data.



	A	B	C	D	E	F
1	Financial Year ▼	Financial Period ▼	Country ⧩	Date ▼	Sales Value ▼	Expenditure ⧩
18	2011	1	United States	2011-01-17	$991.00	-$989.00
271	2011	2	United States	2011-02-22		-$995.00
2952	2012	1	United States	2012-01-31	$581.00	-$997.00
3678	2012	4	United States	2012-04-29	$520.00	-$993.00
5372	2012	11	United States	2012-11-11		-$989.00
5381	2012	11	United States	2012-11-20	$823.00	-$990.00
5616	2012	12	United States	2012-12-15	$932.00	-$995.00
5878	2013	1	United States	2013-01-29		-$998.00
6105	2013	2	United States	2013-02-08		-$993.00
6331	2013	3	United States	2013-03-10		-$998.00
7563	2013	8	United States	2013-08-18	$927.00	-$990.00
8291	2013	11	United States	2013-11-10	$991.00	-$990.00
8541	2013	12	United States	2013-12-20	$818.00	-$998.00
8770						
8771						

When an AutoFilter is applied to a range of cells, the first row in an autofilter range will be the heading row, which displays the autoFilter dropdown icons. It is not part of the actual autoFiltered data. All subsequent rows are the autoFiltered data. So an AutoFilter range should always contain the heading row and one or more data rows (one data row is pretty meaningless), but PHPExcel won't actually stop you specifying a meaningless range: it's up to you as the developer to avoid such errors.

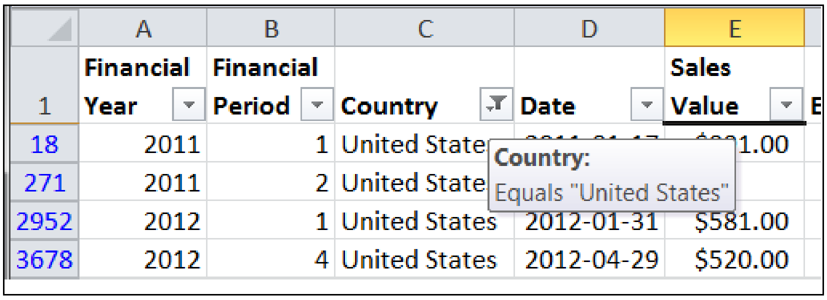
To determine if a filter is applied, note the icon in the column heading. A drop-down arrow (▼) means that filtering is enabled but not applied. In MS Excel, when you hover over the heading of a column with filtering enabled but not applied, a screen tip displays the cell text for the first row in that column, and the message “(Showing All)”.



	A	B	C	D
1	Financial Year ▼	Financial Period ▼	Country ⧩	Date ▼
18	2011			2011-01-17
271	2011			2011-02-22
2952	2012	1	United States	2012-01-31
3678	2012	4	United States	2012-04-29

Financial Period:
(Showing All)

A Filter button (⧩) means that a filter is applied. When you hover over the heading of a filtered column, a screen tip displays the filter applied to that column, such as "Equals a red cell color" or "Larger than 150".



	A	B	C	D	E
1	Financial Year	Financial Period	Country	Date	Sales Value
18	2011	1	United State	2011-01-17	$[illegible]1.00
271	2011	2	United State	[illegible]	[illegible]
2952	2012	1	United States	2012-01-31	$581.00
3678	2012	4	United States	2012-04-29	$520.00

Country:
Equals "United States"

3. Setting an AutoFilter area on a worksheet

To set an autoFilter on a range of cells.

```
$objPHPExcel->getActiveSheet()->setAutoFilter('A1:E20');
```

The first row in an autofilter range will be the heading row, which displays the autoFilter dropdown icons. It is not part of the actual autoFiltered data. All subsequent rows are the autoFiltered data. So an AutoFilter range should always contain the heading row and one or more data rows (one data row is pretty meaningless, but PHPExcel won't actually stop you specifying a meaningless range: it's up to you as the developer to avoid such errors.

If you want to set the whole worksheet as an autofilter region

```
$objPHPExcel->getActiveSheet()->setAutoFilter(
        $objPHPExcel->getActiveSheet()->calculateWorksheetDimension()
);
```

This enables filters, but does not actually apply any filters.

4. Autofilter Expressions

PHPEXcel 1.7.8 introduced the ability to actually create, read and write filter expressions; initially only for Excel2007 files, but later releases will extend this to other formats.

To apply a filter expression to an autoFilter range, you first need to identify which column you're going to be applying this filter to.

```
$autoFilter = $objPHPExcel->getActiveSheet()->getAutoFilter();
$columnFilter = $autoFilter->getColumn('C');
```

This returns an autoFilter column object, and you can then apply filters to that column.

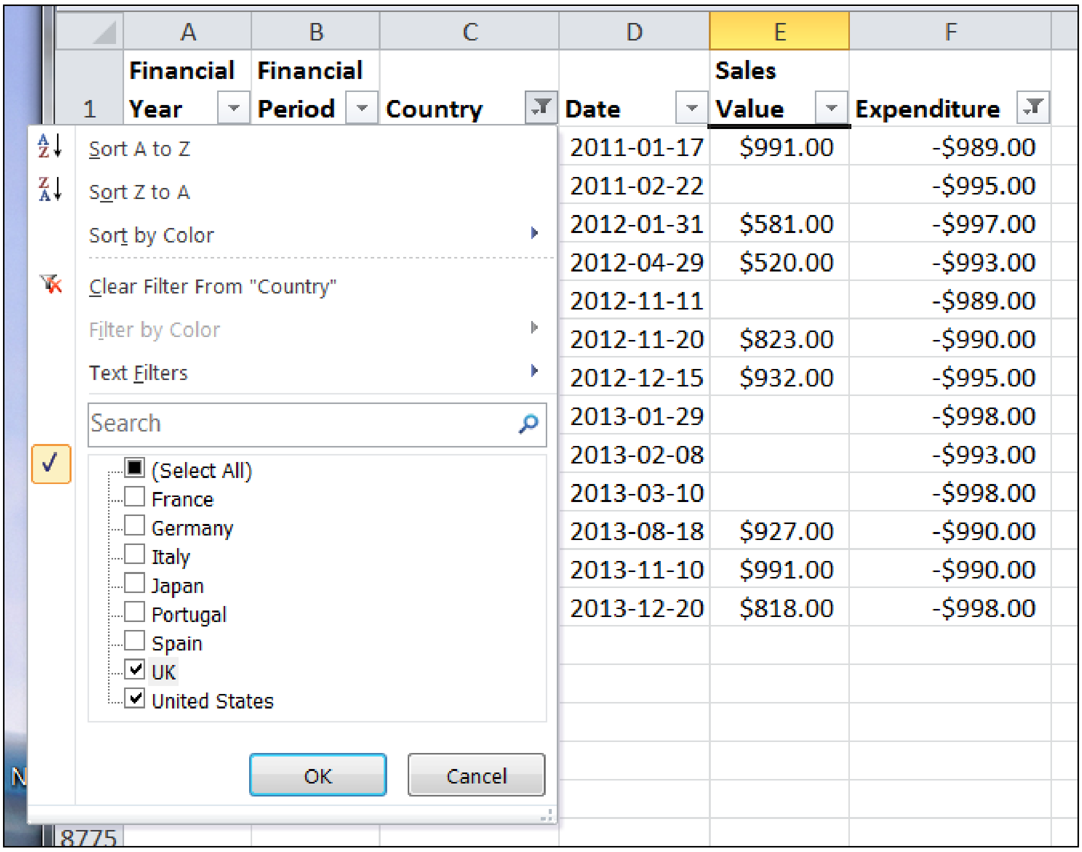
There are a number of different types of autofilter expressions. The most commonly used are:

- Simple Filters
- DateGroup Filters
- Custom filters
- Dynamic Filters
- Top Ten Filters

These different types are mutually exclusive within any single column. You should not mix the different types of filter in the same column. PHPExcel will not actively prevent you from doing this, but the results are unpredictable.

4.1. Simple filters

In MS Excel, Simple Filters are a dropdown list of all values used in that column, and the user can select which ones they want to display and which ones they want to hide by ticking and unticking the checkboxes alongside each option. When the filter is applied, rows containing the checked entries will be displayed, rows that don't contain those values will be hidden.



	A	B	C	D	E	F
1	Financial Year	Financial Period	Country	Date	Sales Value	Expenditure
				2011-01-17	$991.00	-$989.00
				2011-02-22		-$995.00
				2012-01-31	$581.00	-$997.00
				2012-04-29	$520.00	-$993.00
				2012-11-11		-$989.00
				2012-11-20	$823.00	-$990.00
				2012-12-15	$932.00	-$995.00
				2013-01-29		-$998.00
				2013-02-08		-$993.00
				2013-03-10		-$998.00
				2013-08-18	$927.00	-$990.00
				2013-11-10	$991.00	-$990.00
				2013-12-20	$818.00	-$998.00
8775						

■ (Select All)
☐ France
☐ Germany
☐ Italy
☐ Japan
☐ Portugal
☐ Spain
☑ UK
☑ United States

To create a filter expression, we need to start by identifying the filter type. In this case, we're just going to specify that this filter is a standard filter.

```
$columnFilter->setFilterType(
        PHPExcel_Worksheet_AutoFilter_Column::AUTOFILTER_FILTERTYPE_FILTER
);
```

Now we've identified the filter type, we can create a filter rule and set the filter values:

When creating a simple filter in PHPExcel, you only need to specify the values for "checked" columns: you do this by creating a filter rule for each value.

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_EQUAL,
                'France'
        );
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_EQUAL,
                'Germany'
);
```

This creates two filter rules: the column will be filtered by values that match “France” OR “Germany”. For Simple Filters, you can create as many rules as you want
Simple filters are always a comparison match of EQUALS, and multiple standard filters are always treated as being joined by an OR condition.

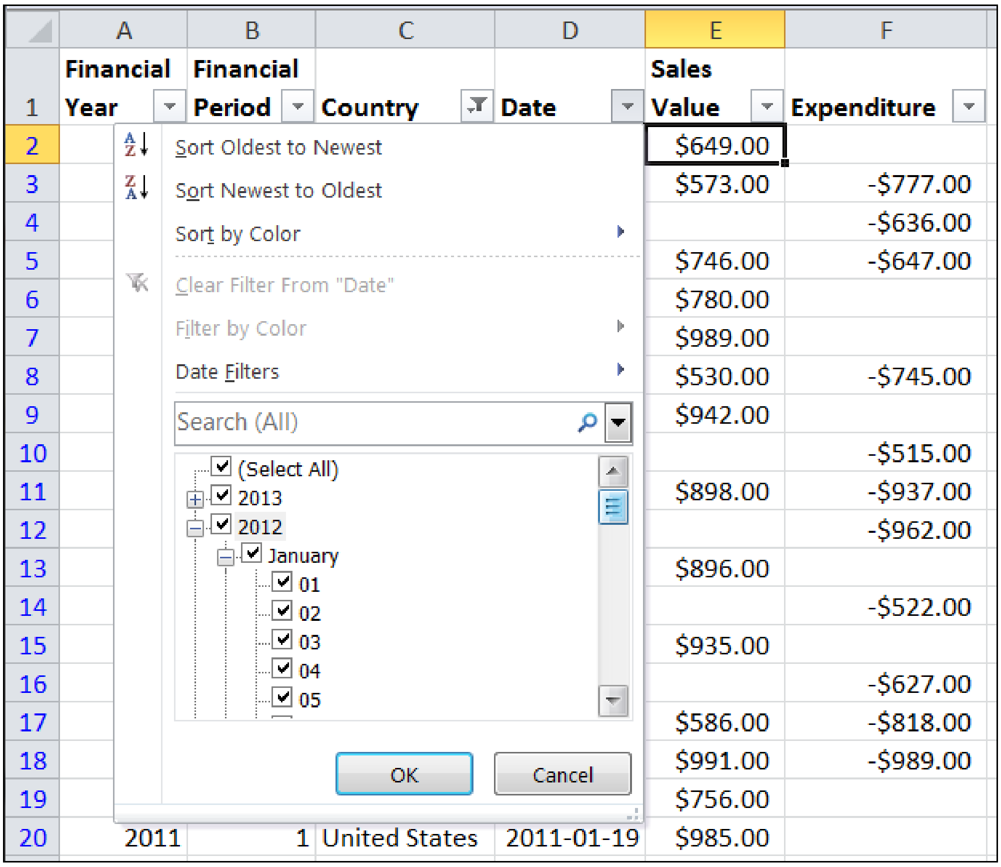
4.1.1. Matching Blanks

If you want to create a filter to select blank cells, you would use:

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_EQUAL,
                ''
        );
```

4.2. *DateGroup Filters*

In MS Excel, DateGroup filters provide a series of dropdown filter selectors for date values, so you can specify entire years, or months within a year, or individual days within each month.



	A	B	C	D	E	F
1	Financial Year	Financial Period	Country	Date	Sales Value	Expenditure
2					$649.00	
3					$573.00	-$777.00
4						-$636.00
5					$746.00	-$647.00
6					$780.00	
7					$989.00	
8					$530.00	-$745.00
9					$942.00	
10						-$515.00
11					$898.00	-$937.00
12						-$962.00
13					$896.00	
14						-$522.00
15					$935.00	
16						-$627.00
17					$586.00	-$818.00
18					$991.00	-$989.00
19					$756.00	
20	2011	1	United States	2011-01-19	$985.00	

DateGroup filters are still applied as a Standard Filter type.

```
$columnFilter->setFilterType(
        PHPExcel_Worksheet_AutoFilter_Column::AUTOFILTER_FILTERTYPE_FILTER
);
```

Creating a dateGroup filter in PHPExcel, you specify the values for "checked" columns as an associative array of year. month, day, hour minute and second. To select a year and month, you need to create a DateGroup rule identifying the selected year and month:

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_EQUAL,
                array(
                        'year' => 2012,
                        'month' => 1
                )
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_DATEGROUP
        );
```

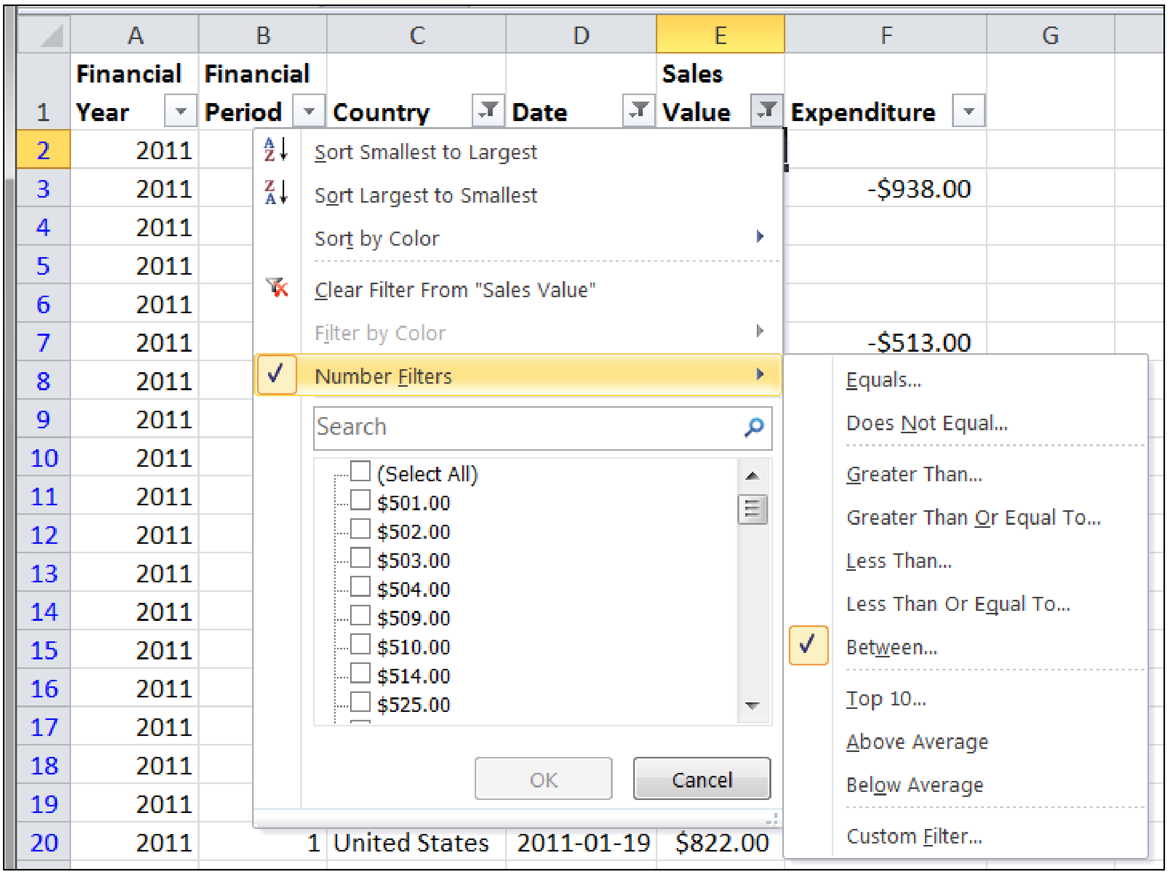
The key values for the associative array are:

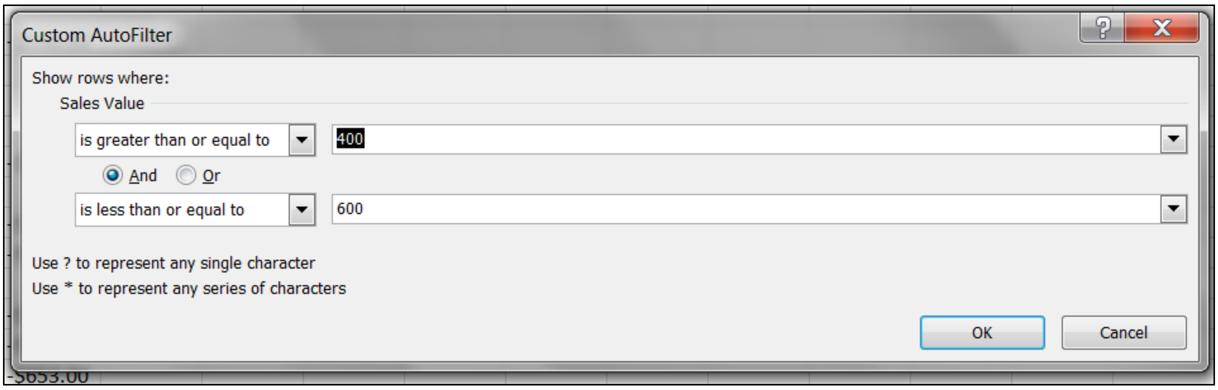
- year
- month
- day
- hour
- minute
- second

Like Standard filters, DateGroup filters are always a match of EQUALS, and multiple standard filters are always treated as being joined by an OR condition.
Note that we alse specify a ruleType: to differentiate this from a standard filter, we explicitly set the Rule's Type to AUTOFILTER_RULETYPE_DATEGROUP. As with standard filters, we can create any number of DateGroup Filters.

4.3. Custom filters

In MS Excel, Custom filters allow us to select more complex conditions using an operator as well as a value. Typical examples might be values that fall within a range (e.g. between -20 and +20), or text values with wildcards (e.g. beginning with the letter U). To handle this, they
Custom filters are limited to 2 rules, and these can be joined using either an AND or an OR.





Show rows where:
Sales Value
is greater than or equal to 400
● And ○ Or
is less than or equal to 600

Use ? to represent any single character
Use * to represent any series of characters

We start by specifying a Filter type, this time a CUSTOMFILTER.

```
$columnFilter->setFilterType(
        PHPExcel_Worksheet_AutoFilter_Column::AUTOFILTER_FILTERTYPE_CUSTOMFILTER
);
```

And then define our rules.

The following shows a simple wildcard filter to show all column entries beginning with the letter 'U'.

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_EQUAL,
                'U*'
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_CUSTOMFILTER
        );
```

MS Excel uses * as a wildcard to match any number of characters, and ? as a wildcard to match a single character. 'U*' equates to "begins with a 'U'"; '*U' equates to "ends with a 'U'"; and '*U*' equates to "contains a 'U'"
If you want to match explicitly against a * or a ? character, you can escape it with a tilde (~), so ?~** would explicitly match for a * character as the second character in the cell value, followed by any number of other characters. The only other character that needs escaping is the ~ itself.

To create a "between" condition, we need to define two rules:

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::
                        AUTOFILTER_COLUMN_RULE_GREATERTHANOREQUAL,
                -20
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_CUSTOMFILTER
        );
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::
                        AUTOFILTER_COLUMN_RULE_LESSTHANOREQUAL,
                20
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_CUSTOMFILTER
        );
```

We also set the rule type to CUSTOMFILTER.

This defined two rules, filtering numbers that are >= -20 OR <= 20, so we also need to modify the join condition to reflect AND rather than OR.

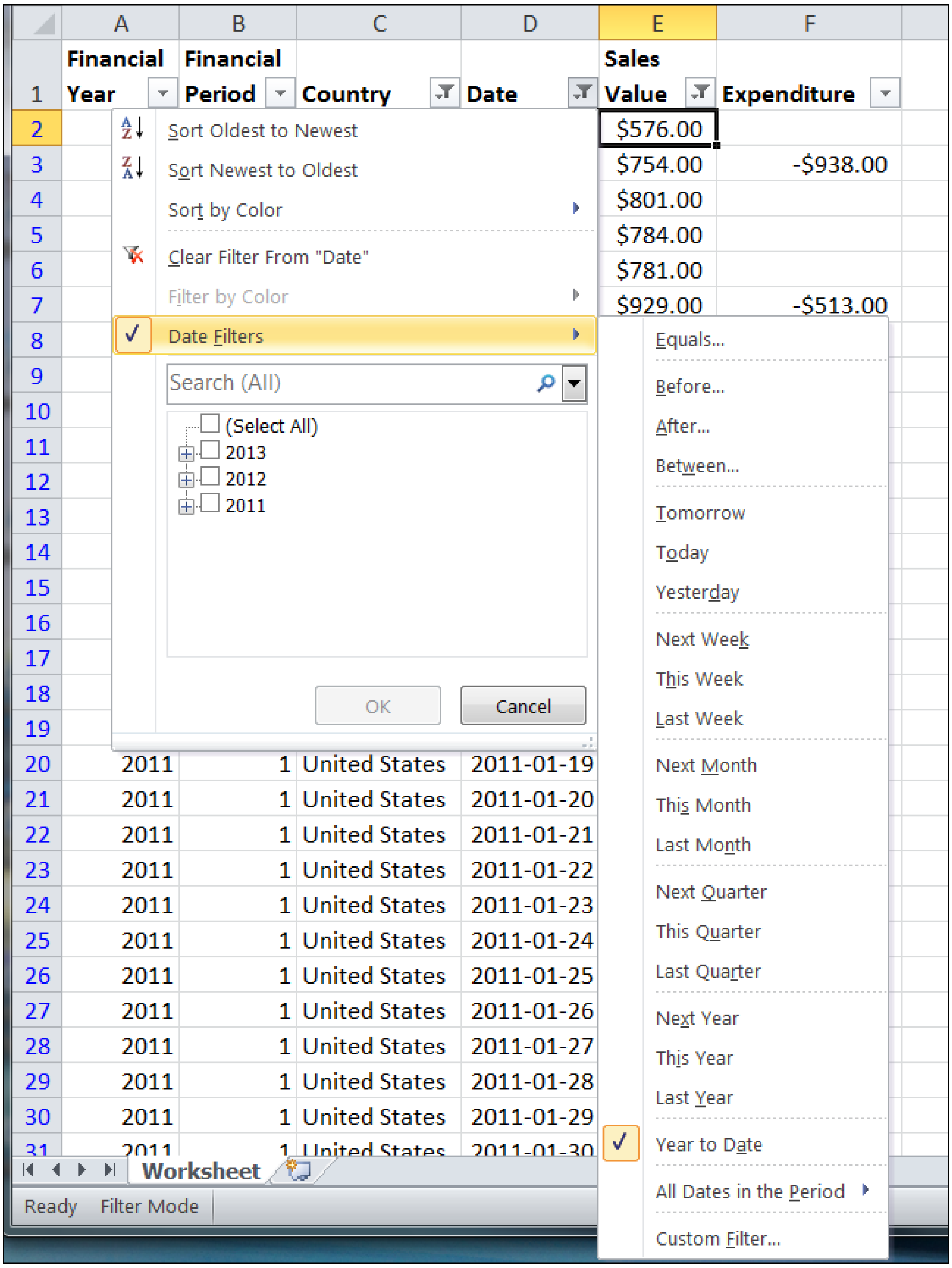
```
$columnFilter->setAndOr(
        PHPExcel_Worksheet_AutoFilter_Column::AUTOFILTER_COLUMN_ANDOR_AND
);
```

The valid set of operators for Custom Filters are defined in the PHPExcel_Worksheet_AutoFilter_Column_Rule class, and comprise:

AUTOFILTER_COLUMN_RULE_EQUAL	= 'equal';
AUTOFILTER_COLUMN_RULE_NOTEQUAL	= 'notEqual';
AUTOFILTER_COLUMN_RULE_GREATERTHAN	= 'greaterThan';
AUTOFILTER_COLUMN_RULE_GREATERTHANOREQUAL	= 'greaterThanOrEqual';
AUTOFILTER_COLUMN_RULE_LESSTHAN	= 'lessThan';
AUTOFILTER_COLUMN_RULE_LESSTHANOREQUAL	= 'lessThanOrEqual';

4.4. Dynamic Filters

Dynamic Filters are based on a dynamic comparison condition, where the value we're comparing against the cell values is variable, such as 'today'; or when we're testing against an aggregate of the cell data (e.g. 'aboveAverage'). Only a single dynamic filter can be applied to a column at a time.



	A	B	C	D	E	F
1	Financial Year	Financial Period	Country	Date	Sales Value	Expenditure
2					$576.00	
3					$754.00	-$938.00
4					$801.00	
5					$784.00	
6					$781.00	
7					$929.00	-$513.00
20	2011	1	United States	2011-01-19		
21	2011	1	United States	2011-01-20		
22	2011	1	United States	2011-01-21		
23	2011	1	United States	2011-01-22		
24	2011	1	United States	2011-01-23		
25	2011	1	United States	2011-01-24		
26	2011	1	United States	2011-01-25		
27	2011	1	United States	2011-01-26		
28	2011	1	United States	2011-01-27		
29	2011	1	United States	2011-01-28		
30	2011	1	United States	2011-01-29		
31	2011	1	United States	2011-01-30		

Again, we start by specifying a Filter type, this time a DYNAMICFILTER.

```
$columnFilter->setFilterType(
        PHPExcel_Worksheet_AutoFilter_Column::AUTOFILTER_FILTERTYPE_DYNAMICFILTER
);
```

When defining the rule for a dynamic filter, we don't define a value (we can simply set that to NULL) but we do specify the dynamic filter category.

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_EQUAL,
                NULL,
                PHPExcel_Worksheet_AutoFilter_Column_Rule::
                        AUTOFILTER_RULETYPE_DYNAMIC_YEARTODATE
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_DYNAMICFILTER
        );
```

We also set the rule type to DYNAMICFILTER.

The valid set of dynamic filter categories is defined in the PHPExcel_Worksheet_AutoFilter_Column_Rule class, and comprises:

AUTOFILTER_RULETYPE_DYNAMIC_YESTERDAY	= 'yesterday';
AUTOFILTER_RULETYPE_DYNAMIC_TODAY	= 'today';
AUTOFILTER_RULETYPE_DYNAMIC_TOMORROW	= 'tomorrow';
AUTOFILTER_RULETYPE_DYNAMIC_YEARTODATE	= 'yearToDate';
AUTOFILTER_RULETYPE_DYNAMIC_THISYEAR	= 'thisYear';
AUTOFILTER_RULETYPE_DYNAMIC_THISQUARTER	= 'thisQuarter';
AUTOFILTER_RULETYPE_DYNAMIC_THISMONTH	= 'thisMonth';
AUTOFILTER_RULETYPE_DYNAMIC_THISWEEK	= 'thisWeek';
AUTOFILTER_RULETYPE_DYNAMIC_LASTYEAR	= 'lastYear';
AUTOFILTER_RULETYPE_DYNAMIC_LASTQUARTER	= 'lastQuarter';
AUTOFILTER_RULETYPE_DYNAMIC_LASTMONTH	= 'lastMonth';
AUTOFILTER_RULETYPE_DYNAMIC_LASTWEEK	= 'lastWeek';
AUTOFILTER_RULETYPE_DYNAMIC_NEXTYEAR	= 'nextYear';
AUTOFILTER_RULETYPE_DYNAMIC_NEXTQUARTER	= 'nextQuarter';
AUTOFILTER_RULETYPE_DYNAMIC_NEXTMONTH	= 'nextMonth';
AUTOFILTER_RULETYPE_DYNAMIC_NEXTWEEK	= 'nextWeek';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_1	= 'M1';
AUTOFILTER_RULETYPE_DYNAMIC_JANUARY	= 'M1';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_2	= 'M2';
AUTOFILTER_RULETYPE_DYNAMIC_FEBRUARY	= 'M2';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_3	= 'M3';
AUTOFILTER_RULETYPE_DYNAMIC_MARCH	= 'M3';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_4	= 'M4';
AUTOFILTER_RULETYPE_DYNAMIC_APRIL	= 'M4';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_5	= 'M5';
AUTOFILTER_RULETYPE_DYNAMIC_MAY	= 'M5';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_6	= 'M6';
AUTOFILTER_RULETYPE_DYNAMIC_JUNE	= 'M6';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_7	= 'M7';
AUTOFILTER_RULETYPE_DYNAMIC_JULY	= 'M7';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_8	= 'M8';
AUTOFILTER_RULETYPE_DYNAMIC_AUGUST	= 'M8';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_9	= 'M9';
AUTOFILTER_RULETYPE_DYNAMIC_SEPTEMBER	= 'M9';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_10	= 'M10';
AUTOFILTER_RULETYPE_DYNAMIC_OCTOBER	= 'M10';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_11	= 'M11';
AUTOFILTER_RULETYPE_DYNAMIC_NOVEMBER	= 'M11';
AUTOFILTER_RULETYPE_DYNAMIC_MONTH_12	= 'M12';
AUTOFILTER_RULETYPE_DYNAMIC_DECEMBER	= 'M12';
AUTOFILTER_RULETYPE_DYNAMIC_QUARTER_1	= 'Q1';

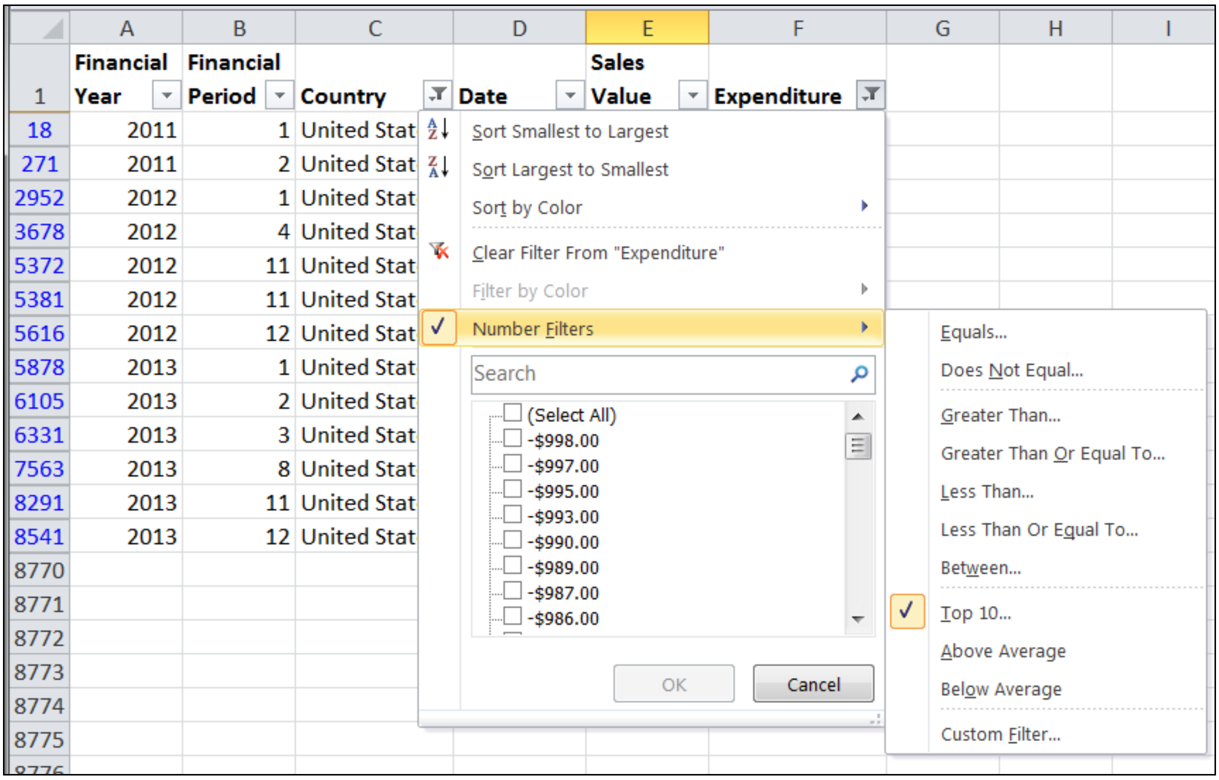
```
AUTOFILTER_RULETYPE_DYNAMIC_QUARTER_2        = 'Q2';
AUTOFILTER_RULETYPE_DYNAMIC_QUARTER_3        = 'Q3';
AUTOFILTER_RULETYPE_DYNAMIC_QUARTER_4        = 'Q4';
AUTOFILTER_RULETYPE_DYNAMIC_ABOVEAVERAGE     = 'aboveAverage';
AUTOFILTER_RULETYPE_DYNAMIC_BELOWAVERAGE     = 'belowAverage'
```

We can only apply a single Dynamic Filter rule to a column at a time.

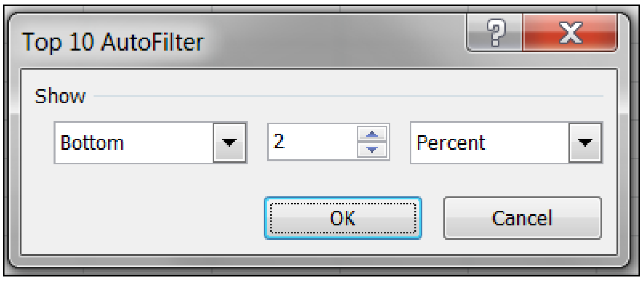
4.5. Top Ten Filters

Top Ten Filters are similar to Dynamic Filters in that they are based on a summarisation of the actual data values in the cells. However, unlike Dynamic Filters where you can only select a single option, Top Ten Filters allow you to select based on a number of criteria:

- You can identify whether you want the top (highest) or bottom (lowest) values.
- You can identify how many values you wish to select in the filter
- You can identify whether this should be a percentage or a number of items.



	A	B	C	D	E	F	G	H	I
1	Financial Year	Financial Period	Country	Date	Sales Value	Expenditure			
18	2011	1	United Stat						
271	2011	2	United Stat						
2952	2012	1	United Stat						
3678	2012	4	United Stat						
5372	2012	11	United Stat						
5381	2012	11	United Stat						
5616	2012	12	United Stat						
5878	2013	1	United Stat						
6105	2013	2	United Stat						
6331	2013	3	United Stat						
7563	2013	8	United Stat						
8291	2013	11	United Stat						
8541	2013	12	United Stat						
8770									
8771									
8772									
8773									
8774									
8775									



Top 10 AutoFilter

Show: Bottom 2 Percent

Like Dynamic Filters, only a single Top Ten filter can be applied to a column at a time.

We start by specifying a Filter type, this time a DYNAMICFILTER.

```
$columnFilter->setFilterType(
        PHPExcel_Worksheet_AutoFilter_Column::AUTOFILTER_FILTERTYPE_TOPTENFILTER
);
```

Then we create the rule:

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::
                        AUTOFILTER_COLUMN_RULE_TOPTEN_PERCENT,
                5,
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_COLUMN_RULE_TOPTEN_TOP
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_TOPTENFILTER
        );
```

This will filter the Top 5 percent of values in the column.

To specify the lowest (bottom 2 values), we would specify a rule of:

```
$columnFilter->createRule()
        ->setRule(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::
                        AUTOFILTER_COLUMN_RULE_TOPTEN_BY_VALUE,
                5,
                PHPExcel_Worksheet_AutoFilter_Column_Rule::
                        AUTOFILTER_COLUMN_RULE_TOPTEN_BOTTOM
        )
        ->setRuleType(
                PHPExcel_Worksheet_AutoFilter_Column_Rule::AUTOFILTER_RULETYPE_TOPTENFILTER
        );
```

The option values for TopTen Filters top/bottom value/percent are all defined in the PHPExcel_Worksheet_AutoFilter_Column_Rule class, and comprise:

AUTOFILTER_COLUMN_RULE_TOPTEN_BY_VALUE	= 'byValue';
AUTOFILTER_COLUMN_RULE_TOPTEN_PERCENT	= 'byPercent';

and

AUTOFILTER_COLUMN_RULE_TOPTEN_TOP	= 'top';
AUTOFILTER_COLUMN_RULE_TOPTEN_BOTTOM	= 'bottom';

5. Executing an AutoFilter

When an autofilter is applied in MS Excel, it sets the row hidden/visible flags for each row of the autofilter area based on the selected criteria, so that only those rows that match the filter criteria are displayed.
PHPExcel will not execute the equivalent function automatically when you set or change a filter expression, but only when the file is saved.

5.1. Applying the Filter

If you wish to execute your filter from within a script, you need to do this manually. You can do this using the autofilters showHideRows() method.

```
$autoFilter = $objPHPExcel->getActiveSheet()->getAutoFilter();
$autoFilter->showHideRows();
```

This will set all rows that match the filter criteria to visible, while hiding all other rows within the autofilter area.

5.2. Displaying Filtered Rows

Simply looping through the rows in an autofilter area will still access ever row, whether it matches the filter criteria or not. To selectively access only the filtered rows, you need to test each row’s visibility settings.

```
foreach ($objPHPExcel->getActiveSheet()->getRowIterator() as $row) {
    if ($objPHPExcel->getActiveSheet()->getRowDimension($row->getRowIndex())->getVisible()) {
        echo '    Row number - ' , $row->getRowIndex() , ' ';
        echo $objPHPExcel->getActiveSheet()->getCell(
            'C'.$row->getRowIndex()
        )->getValue(), ' ';
        echo $objPHPExcel->getActiveSheet()->getCell(
            'D'.$row->getRowIndex()
        )->getFormattedValue(), ' ';
        echo EOL;
    }
}
```

6. AutoFilter Sorting

In MS Excel, Autofiltering also allows the rows to be sorted. This feature is not supported by PHPExcel.