Print Template Syntax Reference

The following is a reference to assist you when creating print templates. The syntax required for inserting field variables, formulas, conditions, and other elements are listed below.

Field Variables

Field variables can be inserted into print templates so that the field's value is displayed in the document when the print template runs.

The general form for field variables is `$FieldLabel`. For example, in the People table the variable for the Login field is `$login`.

You can construct chains of field variables to find values in other tables linked to the current record. These are in the form `$Field1.Field2` where Field2 references a field in another table linked through Field1. Field variable chains must be constructed manually by locating the appropriate field names in each table.

Syntax

```
$formula($field)
$formula($field1.field2)
```

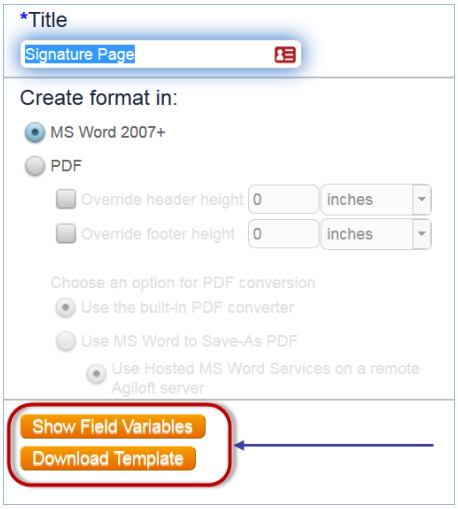
Examples

`$formula($login)`	Insert the Login value.
`$formula($account_rep.backup_person)`	Insert the name of the Account Rep's backup person.
`$formula($related123123123)`	Insert a related table from the current record.

Note that if you are putting dollar signs ($) into a print template to format values in a number field, you can enter a backslash (\) to ensure that the dollar sign does not get eliminated by the system while it is processing the variables and formulas in the print template. For example, \$25,000 will appear as $25,000. You can configure the system so that it does not eliminate the backslash by changing the value of the Keep slash prior escaped dollar sign global variable to Yes.

View or Download Field Variables

A list of field variables for the current table can be displayed when creating or editing a print template.



- Click Show Field Variables to open the Formula Help wizard with a list of the Fields, Global Variables, and Functions.
- Click Download Template to save an MS Word file which lists the field name and field label for each field in the current table.

Formulas and Conditions

Formulas and conditions are used in print templates to calculate totals, insert different fields based on the values, and insert or delete text when a condition is met. A longer list of available formulas can be found in the Formula Help window, available from the Mass Edit Wizard and other system locations.

The following formulas and examples represent the most common uses and will help you create complex print templates.

Basic Formulas

Standard mathematical operations can be used with numeric data types such as integer, floating point, and calculated result fields.

Syntax

```
$formula($equation)
```

Examples

`$formula ($contract_amount*$discount_percentage)`	Multiply the *Contract Amount* by the *Discount Percentage*
`$formula($total_cost - $refund_amount)`	Subtract the *Refund Amount* from the *Total Cost*

Concatenate Strings

concatenatestringsexcerpt

The concatenate strings command allows you to combine field values with text strings, field variables, or other formulas that use variables. For example, if you use `$formula(concat("x",$field_name,"z",...))`, the "x" and "z" placeholders are where you insert text strings, field variables, or formulas.

Syntax

```
$formula(concat("x",$field,"z",...))
```

The variables may be text strings, field variables, or other formulas and variables. Text strings must be surrounded in double quotation marks (""), while variables and formulas do not.

If the first piece is a text string, you can use shorthand to combine variables and strings, but $formula() is still required in email templates:

```
$formula("x"+$variable+"z"+...)
```

Examples

Example formula	Output
`$formula(concat("Your account representative is ",$account_rep,"."))`	Your account representative is Hector Gomez.
`$formula(concat($company_name," Support Contract"))`	Agiloft Support Contract.
`$formula(""+$field1*$field2+" Total")`	2,142 Total
`$formula(concat($contract_start_date," to ",$contract_end_date))`	09/01/19 to 08/31/2020

Dateformat

dateformatexcerpt

`Dateformat()` is used to display a date/time field in a particular format, often for localization. `Dateformat()` takes two arguments: the desired pattern format, and the field variable. Date time patterns are indicated with a series of letters that represent elements such as month, day in month, day of week, year, hour, and minute. For a full list of possible formats see this page from Java about SimpleDateFormat().

Syntax

```
dateformat("output pattern","$field")
```

Date/time Pattern	Example output
"MM/dd/yy"	05/31/16
"yyyy/dd/MM"	2016/22/09
"MMMMM"	July (name of month)
"d"	10 (day of month)

Examples

The following results are expected when `$contract_start_date` evaluates to February 10, 2016 at 01:00:00.

Formula	Sample output
$formula(dateformat("d",$contract_start_date))	10. *Inserts which day of the month the contract starts.*
$formula(dateformat ("MMMMM",$contract_start_date))	February. *Inserts the full text name of the month.*
$formula(dateformat("yyyy",$contract_start_date))	2016. *Inserts the year of the contract start date.*
$formula(dateformat("yyyy",NOW()))	*Inserts the current year when the print template runs.*

Look through the Sample Output column for the format you want to use, then use the corresponding Formula entry to use this format in your print templates. These examples use `$contract_start_date` with a value of February 10, 2016, so if you're referring to a different Date field, replace `$contract_start_date` with the logical name of the new field.

Sample Output	Formula
2/10/16	$formula(dateformat("M",$contract_start_date)) $formula(dateformat ("d",$contract_start_date)) $formula(dateformat("yy",$contract_start_date))
2/10/2016	$formula(dateformat("M",$contract_start_date)) $formula(dateformat ("d",$contract_start_date)) $formula(dateformat("yyyy",$contract_start_date))
10/2/16	$formula(dateformat("d",$contract_start_date)) $formula(dateformat ("M",$contract_start_date)) $formula(dateformat("yy",$contract_start_date))
10/2/2016	$formula(dateformat("d",$contract_start_date)) $formula(dateformat ("M",$contract_start_date)) $formula(dateformat("yyyy",$contract_start_date))
February 10, 2016	$formula(dateformat("MMMM",$contract_start_date)+" "+dateformat ("d",$contract_start_date)+", "+dateformat("yyyy",$contract_start_date))
February 10th, 2016	$formula(dateformat("MMMM",$contract_start_date)+" "+dateformat ("d",$contract_start_date)+((dateformat("dd",$contract_start_date))=="11"||(dateformat ("dd",$contract_start_date))=="12"\|\|(dateformat("dd",$contract_start_date))=="13"?"th": (((replace(dateformat("dd",$contract_start_date),".*(.)","$1"))=="1"?"st":((replace(dateformat ("dd",$contract_start_date),".*(.)","$1"))=="2"?"nd":((replace(dateformat ("dd",$contract_start_date),".*(.)","$1"))=="3"?"rd":"th")))))+", "+dateformat ("yyyy",$contract_start_date))

February 10th, 2016 (alternate formula)	$formula(dateformat("MMMM",$contract_start_date)+" "+(dateformat ("d",$contract_start_date))+((dateformat("dd",$contract_start_date))=="01"||(dateformat ("dd",$contract_start_date))=="21"\|\|(dateformat("dd",$contract_start_date))=="31" ?"st": ((dateformat("dd",$contract_start_date))=="02"\|\|(dateformat("dd",$contract_start_date))==" 22"?"nd":((dateformat("dd",$contract_start_date))=="03"\|\|(dateformat ("dd",$contract_start_date))=="23" ? "rd" : "th")))+", "+dateformat ("yyyy",$contract_start_date))
February 10th, 2016	$formula(dateformat("MMMM",$contract_start_date)) $formula(dateformat ("d",$contract_start_date))$formula(((dateformat("dd",$contract_start_date))=="11"||(dateformat ("dd",$contract_start_date))=="12"\|\|(dateformat("dd",$contract_start_date))=="13"?"th":(((replace(dateformat ("dd",$contract_start_date),".*(.)","$1"))=="1"?"st":((replace(dateformat("dd",$contract_start_date),".*(.)","$1")) =="2"?"nd":((replace(dateformat("dd",$contract_start_date),".*(.)","$1"))=="3"?"rd":"th")))))), $formula (dateformat("yyyy",$contract_start_date))
10th day of February, 2016	$formula(dateformat("d",$contract_start_date)+((dateformat("dd",$contract_start_date))==" 11"\|\|(dateformat("dd",$contract_start_date))=="12"||(dateformat ("dd",$contract_start_date))=="13"?"th":(((replace(dateformat("dd",$contract_start_date),".* (.)","$1"))=="1"?"st":((replace(dateformat("dd",$contract_start_date),".*(.)","$1"))=="2"?"nd": ((replace(dateformat("dd",$contract_start_date),".*(.)","$1"))=="3"?"rd":"th")))))+" day of "+dateformat("MMMM",$contract_start_date)), $formula(dateformat ("yyyy",$contract_start_date))

Format Formula Outputs

formatexcerpt

`format()` is used to determine the output format of a formula based on the display characteristics of a chosen field. It is most commonly used to set the appropriate display for the output of a formula that includes Currency fields.

Syntax

```
$formula(format("table_name.field",$value))
```

In the syntax above, table_name.field is the reference to the field whose formatting you want to use. For instance, contract.dollar_amount could indicate using the $1.00 standard US currency display format. The formatting field can be referenced from any table. The $value may be any valid formula such as a field or formula including multiple field variables.

Examples

The following example formulas will help you create your own formulas.

Formula	Output
`$formula(format("contract.display_field",$contract_amount))`	Inserts the contract amount field formatted with the display characteristics of Display_Field.
`$formula(format("quote.base_currency",$total_amount*$discount_percentage))`	Multiplies the Total Amount times the Discount Percentage and formats the output based on the Base Currency field's settings.
`$formula(format("pricing_plan.monthly_price", (($number_of_users*16) + ($number_of_units*5))))`	Formats this formula using the Monthly Price field in the Pricing Plan table: multiply the number of users times 16 and add five times the number of units.

Conditional Text, Paragraphs, or Clauses

A common requirement is whether to show words, multiple lines, or paragraphs of text based on the values in a record or a condition based on those values. Conditions can use a full range of logical operators such as == (equivalency), != (not equal), >, <, >=, <=.

Ternary Operator

ternaryoperatorsexcerpt

Short conditional statements can be inserted with the ternary operator "a ? b : c." This works like an if-else statement: if the condition "a" evaluates true, then insert "b;" if "a" is false, insert "c." You must provide all parameters for the ternary operator to function, even if one parameter simply inserts a blank space. If you want to output a string in the b or c parameters, include quotation marks around the string.

The ternary operator is useful in formulas that divide by a variable, where that variable might sometimes equal zero. Otherwise, the attempt to divide by zero results in an error. Use the ternary operator to check whether that variable is zero and then provide formulas for each situation. For example, if you want to calculate a percentage using two fields, but $field2 might sometimes equal zero, you could use "$field2 == 0 ? 0 : 100*($field1/$field2)" to output zero if $field2 is zero and otherwise output the calculated percentage.

Syntax

```
$formula($condition ? "True Output" : "False output")
```

Example

In this example the statement compares the variable $n to the value 1. If it is 1, "$n is 1" is shown. If it's not 1, "$n is not 1" is shown.

```
($n==1) ? "$n is 1" : "$n is not 1"
```

Additional Examples

Formula	Explanation / Output
$formula($authorized_contract=="Yes" ? "'Authorized contractor' means a third party contracted to develop or assist with the development of an Authorized Application." : "")	Inserts the sentence "'Authorized contractor' means a third party contracted to develop or assist with the development of an Authorized Application." if the *Authorized Contract* field value is Yes; otherwise, a blank space is inserted.
$formula((isEmpty($company_id.fax)) ? "" : "Fax: " + $company_id.fax)	If the company's linked Fax field is empty, insert nothing. If the Fax field is not empty, insert "Fax: 555-111-2134."
$formula($country=="USA"&&$city=="Redwood" ? "The company is located in Redwood, USA" : "")	Inserts the sentence "The company is located in Redwood, USA" if the *Country* is USA and the *City* is Redwood; otherwise, a blank space is inserted.

If-Then-Else Conditions to Display Field Variables

The `$if` statement evaluates a condition to decide which field variable to display. It is similar to the ternary operator, but the true and false outputs may only be field variables or the $merge command with an attached file field.

Syntax

```
$if(condition) ? $fieldTrue : $fieldFalse
```

The second (else) field variable may be left out to display blank if the condition is not met.

```
$if(condition) ? $fieldTrue
```

Or, the `$merge($filefield)` command may be used as an output:

```
$if(condition) ? $merge($filefield) : $fieldFalse
```

Examples

`$if ($discount_applied == "Yes") ? $percentage_discount`	If a discount is applied, show the Percentage Discount field.
`$if ($contract_amount > 100000) ? $related123456 : $customer.related345678`	If the contract amount is greater than $100,000, show the field $related123456; else, show the field $related45678 in the linked customer record.
`$if ($include_appendix == "Yes") : $merge($attached_file)`	If an appendix should be included, merge the file held in the Attached File field.

Conditional Paragraphs using $startif

Use the `$startif()` command in a print template if some paragraphs of text should only be included under certain conditions. For example, suppose a certain liability clause only appears in a printed contract when the contract amount is over $50,000. The conditional text comes after the `$startif($condition)` and is followed by `$endif` to close the statement.

Syntax

```
$startif($condition)
Paragraph 1
Paragraph 2
$endif
```

Examples

$startif ($contract_amount > 50000) Contracts over $50,000 require an additional insurance certificate. $endif	If the *Contract Amount* is over 50,000, the paragraph appears in the final document. If the *Contract Amount* is less than 50,000, the paragraph is deleted.
$startif ($extended_warranty=="Yes") Your extended warranty is in effect until $formula ($warranty_end_date). $endif	If the *Extended Warranty* field is Yes, insert the sentence listing the *Warranty End Date.*
$startif(($service_name ~= "Installation")&& ($flag = "Yes")) Lorem ipsum dolor sit amet. $endif	If the Service Name field contains "Installation" and the Flag field is set to Yes, then show the paragraph. This example combines conditions using && and extra parentheses surrounding the conditions.

$startif(find ("Amended", concat("", $contract_updates)) Lorem ipsum dolor sit amet. $endif	Checks if the value "Amended" is found in a multi-value choice field "Contract Updates". The `concat` function gets a string representation of the values in the multi-value field, and if it contains the value "Amended", returns the text below. To handle cases where none of the values are selected, you can add the following after the startif: `||` isEmpty($contract_updates)) `isEmpty` returns "true" and outputs the text if none of the values are selected.

isEmpty

isemptyexcerpt

The `isEmpty` operator checks whether a field has a value or not, and is formatted as follows:

```
isEmpty($field)
```

This returns `true` when the $field is null or empty and `false` if the field has a value.

New line or insert line break

linebreakexcerpt

To insert a new line or a line break, use \n within a print template or field value formula. This can help start new paragraphs in certain cases.

Merge Documents

The `$merge` command can be used to merge multiple files held in a single field, or files held in multiple fields into one final document.

Using the `$merge($fieldname)` command within a print template will merge all attached .docx/.html files from the field in the current record into the resulting print template's .docx file. Documents held in a versioned file field will be merged in the order in which they were uploaded or appended to the field.

Syntax

To merge multiple documents held in a single file field with versioning or multiple files enabled:

```
$merge($fieldname)
```

To merge multiple documents held in separate file fields, use the format:

```
$merge($field1) $merge($field2) $merge($field3) ...
```

This makes it possible to compile a large PDF or Word document from several attachments.

The $merge command must be placed within the body of the print template. This function will not work if the $merge function is placed within the header or footer of the template, or within a table.