



User Guide

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Introduction

In our day-to-day routine we find ourselves with a need to manually copy information from our Salesforce.com applications in order to fill out forms.

In many cases during the business process we are required to fill in the same information into different forms over and over again.. This process is error prone and time consuming both for your customers and for you.

Fortunately most of the forms today can be found in digital formats, like PDF. These forms might be of your own or you might receive them from your business partners, vendors or government institutions, etc.

PerForm by Novidea

PerForm is as a form data populating engine which allows you to create filled copies of multiple layouts derived from a single data object. This data objects might be from your Salesforce.com CRM or from any other Force.com application you use.

PerForm allows you with an easy way of populating data to **both preexisting and new** forms owned by you or by a 3rd parties such as: business partners, customers, vendors and more.

By using PerForm you will able to fully automate and significantly reduce repetitive and manual completion of forms. PerForm also minimize human errors and save valuable time spent by you and your employees.

PerForm by Novidea is a 100% Native Force.com solution this means it integrates easily into you Salesforce.com environment and is simple to use for Salesforce.com users.

In its Current version PerForm supports forms in PDF format which include input fields. PerForm enables the user to populate data to the PDF files subject to the form's license and authorizations set by the form owner. Please refer to [Supported PDF formats](#) for supported standards and formats.

Contact details

For Sales and Tech support please contact us by email support@novideasoft.com

For more information visit us in www.novideasoft.com

Quick Reference

This document provides information required for deploying and using PerForm in a Salesforce.com environment. The document is organized to help you quickly and efficiently understand key features and get the best out of this software.

In this Help file you will find the following chapters:

The **[Getting Started](#)** chapter will guide you through prerequisites, the installation steps, and workflow overview of PerForm.

The **[Forms](#)** chapter provides basic and advanced concepts of the Forms.

The **[Mapping](#)** chapter provides a comprehensive guide for mapping the data source from your CRM or any other Force.com application to the PDF form.

The **[Formulas](#)** chapter provides a detailed overview of the Formula feature in PerForm which allows you to manipulate your source data.

The **[Formats](#)** chapter provides a detailed overview of the Format feature in PerForm which allows you to define different representation of the source data in the populated Form.

The **[Tools](#)** chapter provides a guide relating to the management tools and advanced features that exist in PerForm.

The **[Appendix](#)** covers troubleshooting, advanced and technical issues.

Getting started

System requirements

PerForm can be installed on any version of Salesforce.com.

Make sure you have compatible PDF files reader.

Your browser should be configured to view PDF files; if you encounter any problems viewing PDF files please see [Troubleshooting](#).

Installation guide

Please make sure that you have administrative credentials before you start.

Step 1: Visit our listing on AppExchange and install PerForm.

Step 2: Grant security permissions to PerForm objects for the relevant User Profiles.

Step 3: Make PerForm Application and Tabs visible in the relevant User Profiles.

Step 4: Define “generate to PerForm button” on the desired objects. In order to do so please follow the following instructions:

- 4.1 To associate the PerForm button with your standard object you should define a custom button on the desired object. Then you may add the button to the object page layouts.

Step 1:

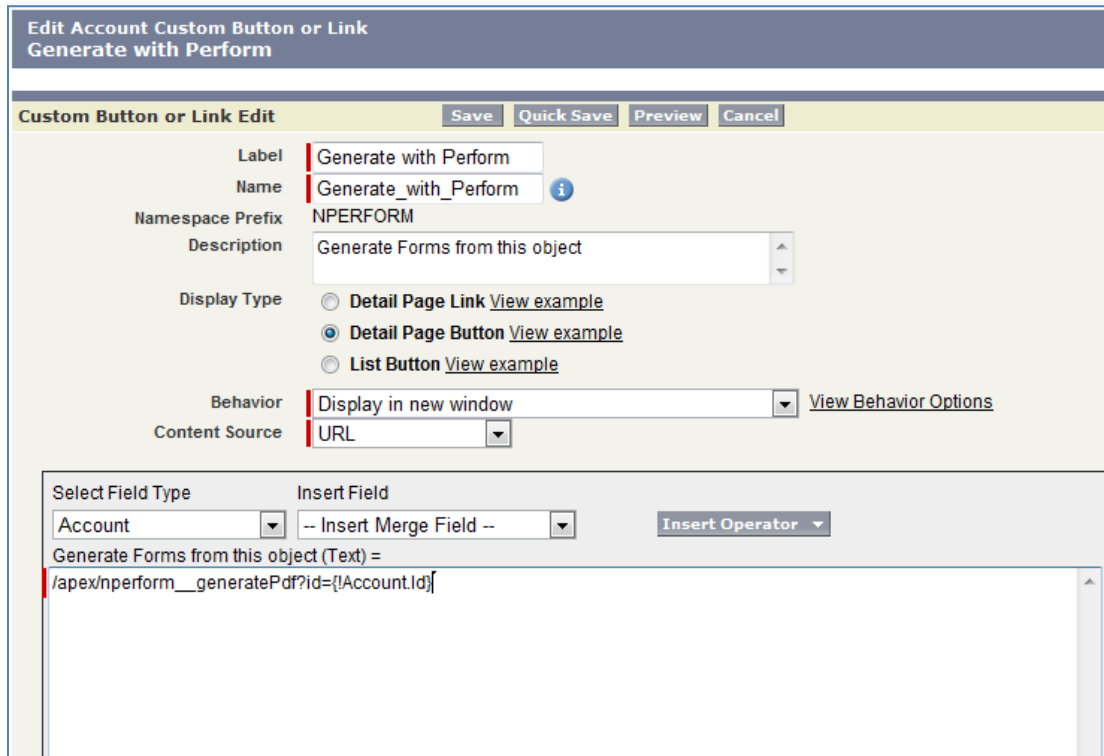
Go to **Setup** → **App Setup** → **Customize** → **[Object Name]** → **Buttons and Links**

The [Object Name] is the object you would like to add the custom button (e.g. Accounts).

Click **New** in the “Custom Buttons and Links” section.

Step 2:

Fill in the fields as illustrated in the example:



Label – Generate with PerForm

Name – Generate_with_PerForm

Description – Generate Forms from this object

Display Type – Detailed Page Button

Behavior – Display in new window

Content Source – URL

In the text area copy-paste the following text:

/apex/nperform__generatePdf?id={!Object.id}

Change the **Object** to the name of the object you are customizing (like Account, Contact).

For example in the Contact object the text will look like:

/apex/nperform__generatePdf?id={!Contact.id}

Click **Save** to store the customized button.

Step 3:

Go to **Setup** → **App Setup** → **Customize** → [Object Name] → **Buttons and Links**

The [Object Name] is the object you would like to add the custom button (e.g. Accounts).

Click on the **Name** of the newly added custom button:

Custom Buttons and Links			New	Default Custom
Action	Label	Name		
Edit Del	Billing	Billing		
Edit Del	Generate with Perform	Generate_with_Perform		

Step 4:

In the opened window click on :

Window Open Properties

Fill in the details as illustrated in the example:

Window Properties

Width (in pixels)

600

Height (in pixels)

300

Window Position

No Preference

Resizable

☐

Show Address Bar

☐

Show Scrollbars

☐

Show Toolbars

☐

Show Menu Bar

☐

Show Status Bar

☐

Width – 600

Height – 300

Window Position – No Preference

Resizable – Unchecked

Show Address Bar – Unchecked

Show Scrollbars – Unchecked

Show Menu Bar – Unchecked

Show Status Bar – Unchecked

Click **Save**.

Now after creating the "Generate with PerForm" button you can associate it with the desired object pages.

Step 1:

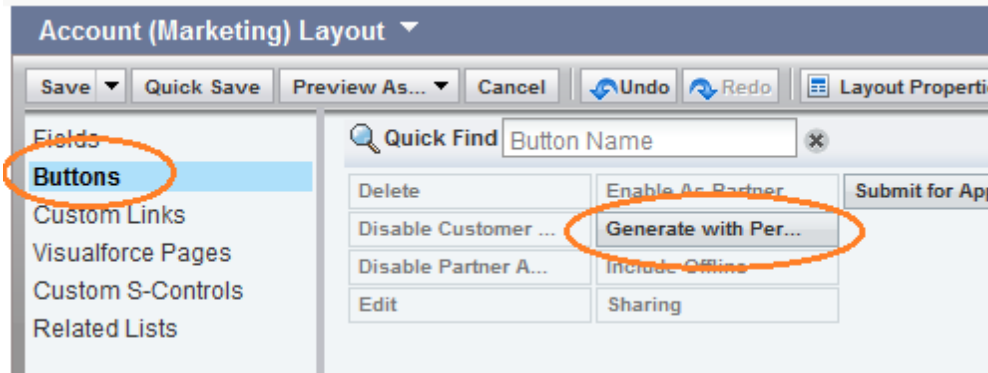
Go to **Setup** → **App Setup** → **Customize** → [Object Name] → **Buttons and Links**

The [Object Name] is the object you would like to add the custom button (e.g. Accounts).

Click **Edit** on desired Page layout.

Step 2:

Add the new button to the page:



Select the **Buttons** option from the menu.

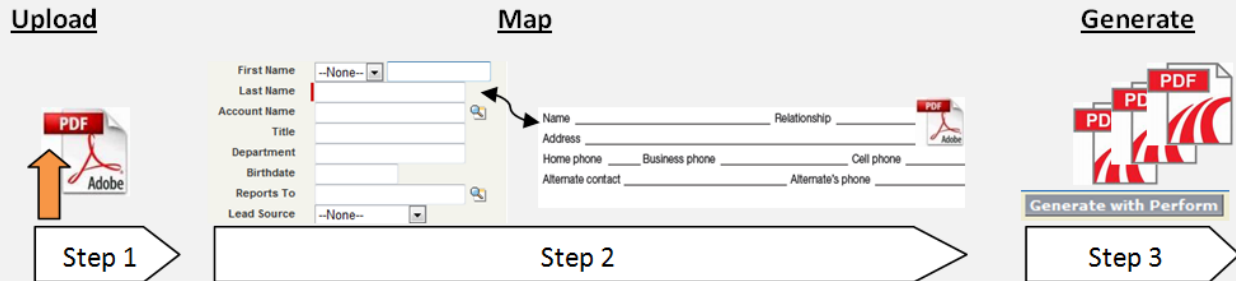
Drag and Drop the **"Generate with PerForm"** button to the page layout.

Click **Save**.

Please refer to [Define custom action to Generate object](#) for more information.

Overview

PerForm application populates data stored in your business objects into the desired forms. As described in the following workflow there are 3 basic steps to populate your data into the form:



Step 1: Upload one or more PDF forms:

The first step is to upload your PDF file into PerForm. Forms can be uploaded from the **Forms** tab in a quick and simple manner. For more information please refer to [How to upload a new Form](#) chapter.

Step 2: Define the mapping between the sources object fields to the fields in the PDF form:

During the mapping process you will define which fields from the source object will be populated into the fields in the PDF form. For example you may define that “First Name” and “Last name” from the Contact object will be populated to the “Name” field in the PDF document. For more information please refer to the [Mapping](#) chapter.

Step 3: Populate multiple forms with data from your object:

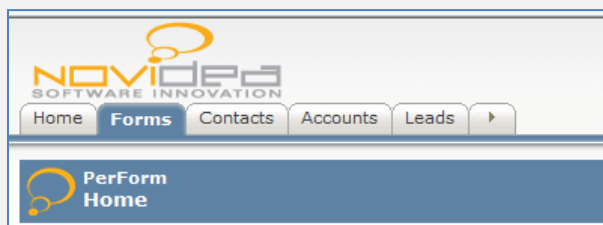
After you have uploaded and mapped your forms to your object, you can populate the forms with data from your object acting as the data source. A “Generate with PerForm” button will be available in your Contact object actions area?. By clicking the button you will be navigated to the Form Generate options. For more information Please refer to [How to generate Form\(s\)](#) chapter.

Forms

Overview

PerForm's Form object stores information about the uploaded form file and its association with an object on the Salesforce.com platform. The Salesforce.com object is used as the data source for the form's mapping process and for its population with data. Each uploaded form, has to be associated with an object from a Salesforce.com application (e.g. Contact, Account etc). The associated object will be used as the source during the mapping and generation processes.

Please refer to the [How to upload a new Form](#) section in this chapter in order to learn more about Form upload process.



Using the Forms tab you can access all the functionality of PerForm including:

-  Upload new Forms
-  Manage and review existing forms
-  Generate forms
-  Access advanced [Tools](#)

Review existing Forms

In the “Forms” tab you can view and manage forms which were already uploaded to the “Forms” tab. In the “Forms” table, you may review the forms, which were either sorted by date or by any other available criteria.

Forms						
New Form Manage Formulas Manage Formats						
Action	Form Name	Object Name	Created	Last Modified	Description	Origin
Generate Edit Mappings	Blue Shield	Contact	09:18 14/03/2010	18:23 17/03/2010	Blue Shield individual and family health plans	Blue Shield of California
Generate Edit Mappings	M.U Group Health	Contact	09:25 14/03/2010	11:02 14/03/2010	University of Michigan, Group Health Insurance Application for Special Enrollment	University of Michigan

In the “Action” column you can see actions that can be performed in the Form:

Generate - Populate a form with data. For more information please refer to [How to generate Form\(s\)](#) in this chapter. .

Edit Mappings - Edit mapping definitions of a Form. For more information please refer to [Mapping](#) in this chapter.

Clicking on the Form’s name, will show the Form’s detailed view and editing page. For more clarified information regarding the columns in the list please refer to [Form’s attributes](#) in this chapter.,

Form’s attributes

The following attributes are used in order to define the Form object in PerForm:

Form Name - A distinguishing name to identify your form.

Object Name – specifies the Salesforce.com object associated with the Form. The associated object will be used during the mapping process and will be the source for the generation process. For example when uploading a form that will be used to populate Contact details, you should associate the Form with the Contact object.

Created - Form creation/upload date.

Last Modified - Last modification date of the Form’s details or of the Form’s mappings.

Description – Short description of the purpose and content of your Form.

Origin – The publisher of the form- this may be yourself, your business partners, your customers, etc.

Total PDF fields – Number of fields in your form's PDF file.

Current Form File – The file name of the uploaded form.

How to upload a new Form?

To upload a new Form enter the “Forms” tab, and click the “New Form” button. An “Upload a new Form” page will be opened:

PerForm
Upload a new Form

Form's Details

Form Name: Customer enrollment form

Origin: Internal form

Description:

Object Name: Contact

PDF File (.pdf): C:\Customer mng\enrollment.pdf

Buttons: Save, Save & Edit Mappings, Cancel

Enter the Form's details in the appropriate fields. Please refer to the [Form's attributes](#) section in this chapter for more information.

*Note: The **Object Name** attribute cannot be changed after you have saved the Form. Please make sure you choose the right **Object Name** that will be used as the source object to populate your form.*

Click the "Browse..." button to select a PDF file located on your computer. The file will be uploaded and saved in PerForm.

Note: Be sure to upload PDF files that contain PDF forms fields. Please refer to [Supported PDF formats](#) for more information.

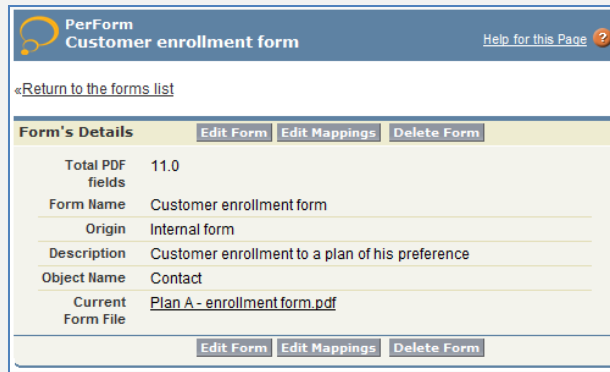
Click the "Save" button to save your new Form.

After the Form is saved, you will be navigated back to the "Forms" tab. If you would like to automatically proceed to the mappings page, click "Save & Edit Mappings".

During the save process the PDF file is validated. You will see validation messages if PerForm will encounter some difficulties to analyze and store the file. If you encounter any problems please refer to the [Troubleshooting](#) section for more information.

View and Edit Form

To view or edit your Form's details go to the "Forms" tab . In the "Forms" list click on the name of the desired form. You will be navigated then to the Form's page:

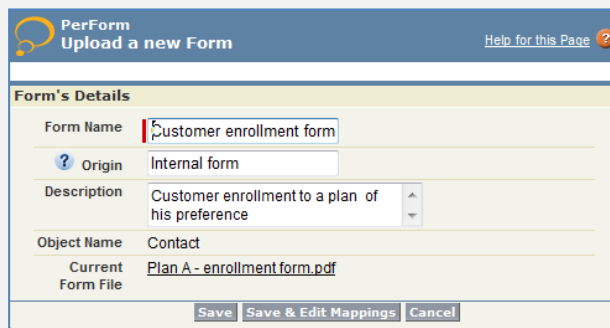


Form's Details	
Total PDF fields	11.0
Form Name	Customer enrollment form
Origin	Internal form
Description	Customer enrollment to a plan of his preference
Object Name	Contact
Current Form File	Plan A - enrollment form.pdf

You may review your form details. See the [Form attributes](#) section in this chapter for more information. Clicking on the Form's "Current Form File" will open your PDF form for review. "Edit mappings" button will open the mapping page for this Form. The "Delete Form" button will remove the Form and all its mapping definitions.

Note: Deleting a Form is an irreversible action, and should be used only if you are certain that you do not need this Form. This action will remove the uploaded PDF file from PerForm, and all the mapping definitions you made for this Form.

"Edit Form" button will open the Form's edit page:



Form's Details	
Form Name	Customer enrollment form
Origin	Internal form
Description	Customer enrollment to a plan of his preference
Object Name	Contact
Current Form File	Plan A - enrollment form.pdf

In this page the **Form Name**, **Origin** and **Description** may be modified.

How to generate Form(s)?

In your daily work with PerForm the Forms will be generated using the "Generate with PerForm" button integrated into your standard object page. Please refer to the [Define custom action to Generate object](#) for more information.

The "Generate with PerForm" button enables you to populate multiple forms using one data source. The "Generate" button in the "Forms" tab enables you to populate only one form at a time. For more information please refer to the example further in this section.

Populate a Form from a standard object page

To generate Form(s) from your object, go to your objects detailed view and click the “Generate with PerForm” button:

Account
Grand Hotels & Resorts Ltd

Customize Page | Edit Layout | Printable View | Help for this Page ?

« Back to List: Static Resources

Contacts [2] | Opportunities [5] | Cases [4] | Open Activities [1] | Activity History [0] | Notes & Attachments [4] | Partners [0]

Account Detail Edit Delete **Generate with Perform**

Account Owner	Rolan Shko [Change]	Rating	Warm
Account Name	Grand Hotels & Resorts Ltd [View]	Phone	(312) 596-1000
Parent Account	Hierarchy	Fax	(312) 596-1500

A new popup page will be opened:

Generate Form(s)
Grand Hotels & Resorts Ltd

Help for this Page ?

	Form Name	Last Modified	Description	Origin	Status
☐	Quote request	01:48 26/04/2010	request for Quote from vendor	External form	
☒	Proposal form	09:24 19/08/2010	Proposal form for the company's customers	Internal	
☐	Update account details	07:25 24/03/2010	Update details form for an account	Internal	
☒	Customer Service	12:37 25/08/2010	Customer support case summary	Internal	
☐	Club member – enrollment	05:47 18/04/2010	Automated.pdf	Michigan	

Generate PDF Preview Close

You will see a list with all available Forms for your object.

Select one or more Forms from the list, and click the “Generate” button (to select more than one Form, hold the Ctrl key and click on the desired Forms). The populated PDF form(s) will be attached to the object (e.g. to the Grand Hotels & Resorts Ltd account). Using the preview button will only show the populated form but will not attach it to the object itself.

Populate a Form from the “Forms” tab

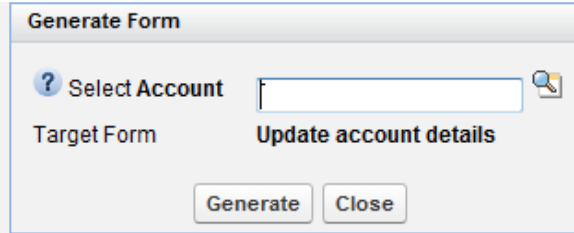
Go to the “Forms” tab, and choose the Form you would like to generate.

Click on the “Generate” action of that Form:

Forms New Form Manage Formulas Manage Formats

Action	Form Name	Object Name	Created	Last Modified	Description	Origin
Generate Edit Mappings	Blue Shield	Contact	09:18 14/03/2010	18:23 17/03/2010	Blue Shield individual and family health plans	Blue Shield of California
Generate Edit Mappings	M.U Group Health	Contact	09:25 14/03/2010	11:02 14/03/2010	University of Michigan, Group Health Insurance Application for Special Enrollment	University of Michigan

“Generate Form” popup window will appear:



Generate Form

? Select Account 

Target Form Update account details

Select the source object you want to populate to the Form, and click “Generate”.
The populated PDF form will be opened in new window.

Please notice that using the Generate button from the “Forms” tab offers only a preview of the populated form and does not attach it to the object itself. By using the "Generate" button from the object page (e.g. the specific account) PerForm will attach the populated form file the object itself.

You may click the lookup in order to search for a specific data source object (e.g. university of Arizona account)



Lookup

Search

You can use "*" as a wildcard next to other characters to improve your search results.

Search Results

Account Name	Account Site	Owner Alias	Type
University of Arizona		support	Customer - Direct

Mapping

Overview

Throughout the mapping process you will define the means by which the source data stored in the standard object (for example Accounts, Contacts) will be transferred to the fields in the designated Form that you are mapping.

In order to start the mapping process, go to the “Forms” tab and click “Edit Mappings” on the desired Form.

You will be navigated to the “Edit Form Mappings” page:

PerForm
By Novidea

Home Forms Contacts Accounts Leads +

Edit Form Mappings
Scholarship application

Edit the mapping of the data source to the Form fields. [learn more...](#)

Create Table Create Group Page 1 Preview Done

Action	Form Field	Data Source	Format
Clear Edit	☐ "Faculty or Staff Member Name Last, First, Mid		
Clear Edit	☐ "UMID"		
Clear Edit	☐ "Social Security Number if UMID unknown"		
Clear Edit	☐ "Street Address"		
Clear Edit	☐ "City, State, Zip"		
Clear Edit	☐ "Home Phone Number"		
Clear Edit	☐ "Daytime Phone Number"		
Clear Edit	☐ "E-Mail Address"		
Clear Edit	☐ "Dependent Name"		
Clear Edit	☐ "Dependent's Social Security Number"		
Clear Edit	☐ "Dependent Employer's Name"		
Clear Edit	☐ "Employer's Street Address"		

Page 1 Preview Done

The main section of the mapping page is the mappings table. Each row in the table specifies a mapping of a field in the designated PDF form.

The table has the following buttons:

Create a table – Please refer to [Tables](#) in this chapter for more information.

Create a Group – Fields grouping action. Please refer to [Groups](#) in this chapter for more information.

Action – Actions which you can use in the mapping row.

Form Field – Name of the field in the designated PDF form.

Data Source – Mapped field from the source object or a Formula.

Format – An Optional field Which is used if a different representation of the source data is required in the populated form.

By default the rows are displayed in the view mode. Clicking on the “Edit” button will change the row’s mode to edit mode. For further information about mapping please refer to the [Mapping process](#) in this chapter.

Legend - Symbols used in the mappings table:

-  - Indicates that the Data Source is a standard object field.
-  - Indicates that the Data Source is a Formula
-  - Indicates that individual fields were grouped into one logical field. When the user will point on this icon (mouse over) a popup will appear specifying the groups’ members.
-  - Indicates that individual fields were defined as one logical table. When the user will point on this icon (mouse over) a popup will appear specifying the fields in each column..
-  - Click this icon to ungroup the logical field back into the separated fields.

Mapping process

The mapping process has 3 steps, as illustrated in the workflow:

Edit Form Mappings
Scholarship application
Edit the mapping of the data source to the Form fields, [learn more...](#)

Create Table Create Group Page 1 Preview Done

Action	Form Field	Data Source	Format
Clear Edit	☐ "Faculty or Staff Member Name Last, First, Mid"	☐ Field	-- None --
Clear Edit	☐ "UMID"	☐ Formula	
Clear Edit	☐ "Social Security Number if UMID unknown"	☐ Constant	
Save Cancel	☐ "Street Address"		New Format

Step1 Step2 Step3

Step 1: Change to edit mode the required mapping row:

Click the “Edit” button in the row representing the form’s field you wish to define the mapping for. The actions column will be changed and you will be prompted with “Save” and “Cancel” buttons.

Step 2: Choose a Data Source:

Select the data source field from your source object. By clicking on the drop down list you'll see all the fields from the associated data object (for example Contact or Account). You may map a constant value to the target field in the form. This feature enables you to populate a value of your preference without the need for it to exist in the source object.

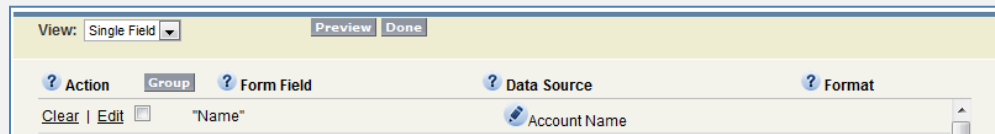
For additional flexibility to match the requirements of the target form you may define a formula.

Formulas enable you to conduct data source manipulation prior to mapping it to the target field in the form. Please refer to the [Formulas](#) chapter for more information.

Step 3: Optional, define a new format for the data source:

For some of your fields in the PDF form you'll need to define a new representation of the data source before populating it into the PDF form. Please refer to the [Formats](#) chapter for more information.

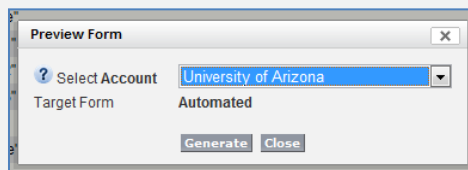
After editing each mapping row, click "Save" to store the mapping definition. Then you will see your mapping in the view mode as in following example:



The "Clear" action will remove all previously defined mapping for the mapped row.

Preview (optional):

Press the "Preview" button if you would like to see the results of your mapping in the form during the mapping process. A popup window "Preview Form" will appear:



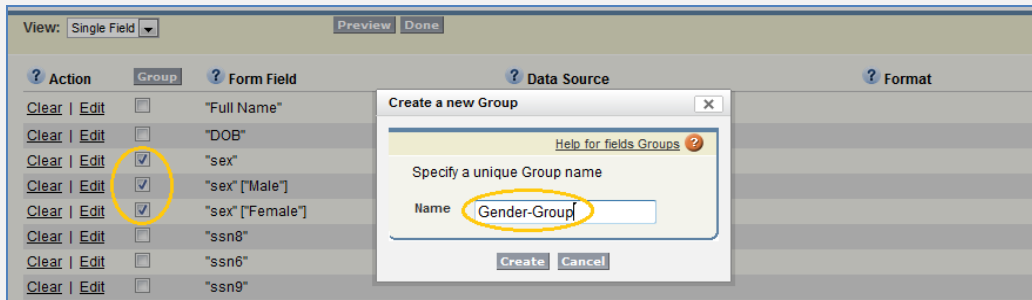
Select a desired object from a list and click "Generate" to preview your mappings.

At the end of the process after all of the relevant fields have been mapped, click "Done" to close the "Edit Form Mappings" page.

Groups

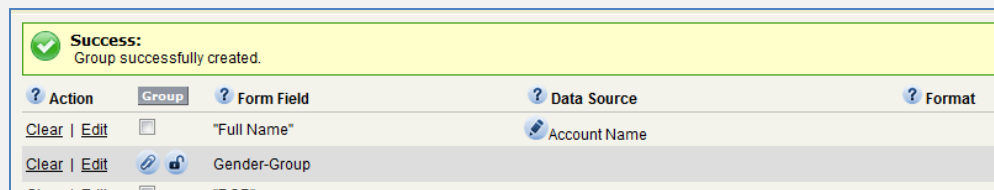
Groups are used in order to define a single mapping definition for multiple fields. Group is a one logical field which is comprised of multiple fields.

To define a new Group, select the checkboxes at the desired rows, and click the "Group" button. The "Create new Group" dialog will appear:



Enter a desired group name and click “Create”.

You will see the new group in your mapping table instead of the original fields:



Please Notice that in our example the group “Gender-Group” was created, and two new icons appeared:



- Indicates that a Group of fields was created. Pointing on this icon will show the grouped fields. When the user will point on this icon (mouse over) a popup specifying the group members will appear.



- Click this icon to ungroup the logical field back into separated fields. The original fields will appear in the mapping table.

In most cases, groups will be used in conjunction with Formats. For more information and examples please refer to the [Formats](#) chapter.

Note: Not all of the target form's fields can be grouped; fields that cannot be grouped have no checkbox in the group column.

Tables

Tables are used to define a mapping definition between related lists in Salesforce.com (e.g. contacts list for an account) and a table in the target PDF form. Using this key feature PerForm enables the user to populate a table that consists of multiple rows and columns using a single mapping instead of mapping each cell of the table separately.

E.g. a table which should be populated with contact information from our Salesforce.crm contact object.

Name and Title of Contact Person	Address	E-mail Address

1. To define a new table, click the "Create Table" button in the "Edit Forms Mappings" page
2. In the "Create New Table" Enter a table name

Create New Table

Table mapping definition [Help for Tables ?](#)

Table Name: Scholarship application

Related List: Contact Role (Contact ID)

Sort By: Contact Role ID Ascending Order

3. Choose the related list that will be populated in the target table of the PDF form.

Create New Table

Table mapping definition [Help for Tables ?](#)

Table Name: Scholarship application

Related List: Contact (Contact ID)

Sort By: Contact Role ID Ascending Order

4. Select the "Sort By" and "Order" fields (e.g. *Contact role ascending* or *First name, Descending* etc). This feature enables the data to be populated in the PDF table according to order of your preference rather than as it is stored in Salesforce.com.

Create New Table

Table mapping definition [Help for Tables ?](#)

Table Name: Scholarship application

Related List: Contact (Contact ID)

Sort By: Contact Role ID Ascending Order

5. Select the "Table's margins". The Table's margins include 4 simple parameters:

Table's margins

Form's table start at page: 1 with field: Faculty or Staff Membe

Form's table end at page: 1 with field: Employer's Street Addi

"Form's table start at page" – select the page in the target PDF where the table starts.

5.1 "with field" - specify the first input field of this table in the designated PDF. This is the upper last field of the table.

5.2 "Form's table **end at page**" - select the page in the target PDF where the table ends.

5.3 "with field" - specify the last input field of this table in the designated PDF. This is the bottom right field of the table.

6 "Columns name and layout" – in this section please specify the number of columns of the table that are required in the designated form. Provide each column with a different name. Adding a new column is done using

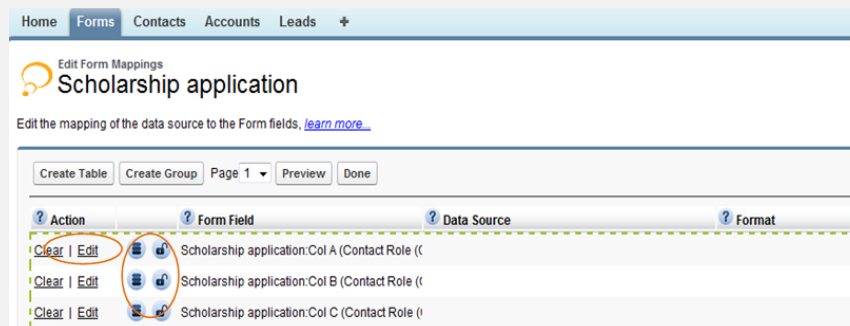
the  button.

Column names and table layout		
Col A 	Col B  	Col C  
"Faculty or Staff Member Na	"UMID"	"Social Security Number if L
"Street Address"	"City, State, Zip"	"Home Phone Number"
"Daytime Phone Number"	"E-Mail Address"	"Dependent Name"
"Dependent's Social Securi	"Dependent Employer's Na	"Employer's Street Address

Please notice that a proper definition of the table's margins results in an equal number (4 in our example) of fields in each column.

6. Click the create button.

7. In the "Edit Form Mappings" page we can now see the newly created table (tables are marked in a green dashed line). Click the "Edit" button for each column.



8. Map the corresponding filed in the related list. In our example we will map the "Full Name", "Address" and "Email" into Col A, Col B, Col C respectively.

Action	Form Field	Data Source	Format
Save Cancel [Lock Icon]	Scholarship application:Col A (Contact (Rep...	Field Full Name	New Format
Save Cancel [Lock Icon]	Scholarship application:Col B (Contact (Rep...	Field Address	New Format
Save Cancel [Lock Icon]	Scholarship application:Col C (Contact (Rep...	Field Email	New Format

9. Click the save button in each row.

10. By using the preview button we can see that our table is populated in the following manner:

Name of Contact Person	Address	E-mail Address
Mr. Andrew Johnson	525 S. Lexington Ave Burlington, NC 27215 USA	Andrewj@comtech.com
Mrs. Linda Rogers	113 Financial district Boston, MA 11440 USA	Linda@dfersol.com
Mr. Jack Mills	1130 Warrenville Rd, Lisle, IL 60532	Mills_jack@stageway.com

Disassembling a table: In order to disassemble a table, click the  button in the "Edit Form Mappings" page. There is no need to click this button for each row as the first selection will cause the table to be disassembled.

Action	Form Field	Data Source	Format
Clear Edit [Lock Icon]	Scholarship application:Col A (Contact Role (C...	Contact Role (C...	
Clear Edit [Lock Icon]	Scholarship application:Col B (Contact Role (C...	Contact Role (C...	
Clear Edit [Lock Icon]	Scholarship application:Col C (Contact Role (C...	Contact Role (C...	

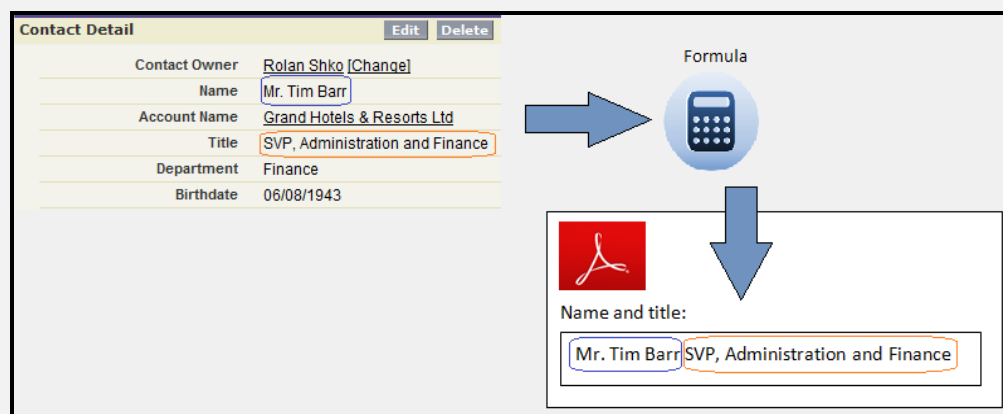
Formulas

Overview

Formulas allow you to conduct manipulations on the data source during the mapping process prior to populating the form itself with data. A Formula can be applied on one or more fields from the data source, and result with a new calculated value.

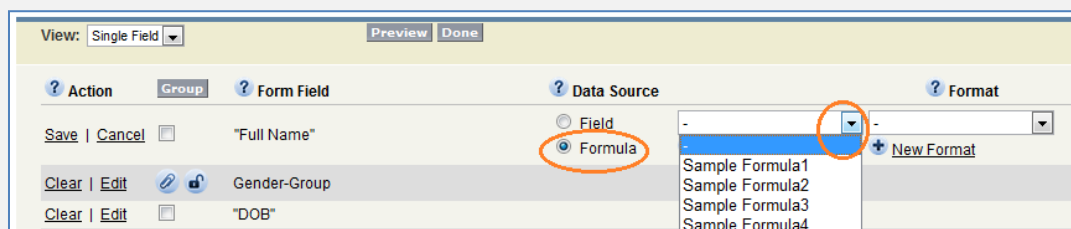
PerForm is provided with a set of predefined formulas to ease the mapping process. These Formulas can be extended and customized by the user according to his specific requirements. For more information Please refer to the [Formula Types](#) in this chapter.

In the following example the Formula joins two fields, “Name” and “Title”, from the Contact object to a one target field in the Form



Selecting Formula during the mapping

To select a formula enter the “Edit” mode of the field and choose “Formula” option in the “Data Source” column. Select the desired Formula from the drop down list.



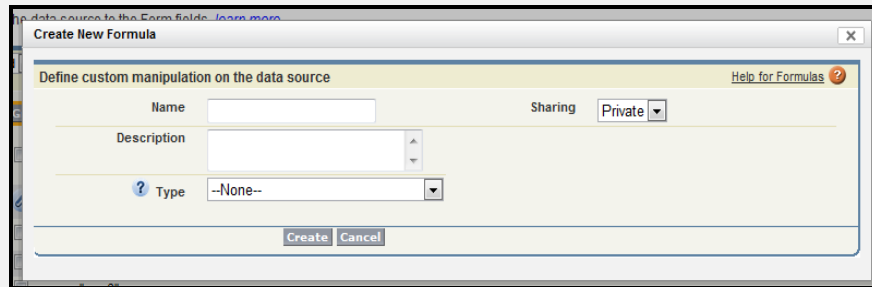
After selecting the desired Formula click “Save” to save the mapping definition.

The Formula icon  will appear next to each Formula data source fields.

How to define a new Formula?

To create a new Formula for the mapping process, enter the “Edit” mode of the desired field and choose “Formula” option in the “Data Source” column.

Click the [+ New Formula](#) button. The “Create New Formula” window will appear.



Formula Attributes:

Name	Description	Mandatory
Name	The Formula name which identifies the defined formula	Yes
Description	A Short description of the formulas’ purpose and use	No
Type	Determines the formula’s functionality. Please refer to Formula Types for more information.	Yes
Sharing	Use the sharing function if you wish to share your new Formula with other Forms in case you intend to use it again. The user has two options which are: Public – The formula could be reused in all of the Forms which are used by the whole organization. Private – The formula can only be used for the current Form. The default sharing is set to Private . For more information please refer to When should I share my new Formulas?	No

Depending on the Formula type you choose, the appropriate fields will be available for customization. Please refer to the [Formula Types](#) section in order to learn more about Formula types.

When should I share my new Formulas?

Formulas are always associated with an object type (e.g. Contact, Account, etc). When you create a new Formula during the mapping process, the formula is automatically associated with the object type that the Form was associated with.

During the creation of the new Formula you may specify the “Sharing” option to **Private** or **Public**:

Private – Private Formula can be only reused during mappings of the current Form.

Public – Public Formula can be reused in all Forms based on the same object type in your organization.

Sharing Formulas is a convenient way to use them in other Forms , in order to reduce repetitious work while using existing assets. You should define a Formula as **Public** whenever you recognize a potential of reuse.

*When modifying a **Public** Formula all of the Forms using this Formula will be affected. Modify **Public** Formulas only after estimating the affect it will have on all of your Forms using this Formula.*

Formula Types

PerForm is provided with a predefined set of formulas that you may extend. When defining a new custom Formula you’ll select a Type from a list. According to the type of formula that you will select, the appropriate attributes will become available:

Available Formula Types:

[Multiple Conditions – All](#)

[Multiple Conditions – At least one](#)

[Inverse Condition](#)

[Join Values](#)

[Test Value](#)

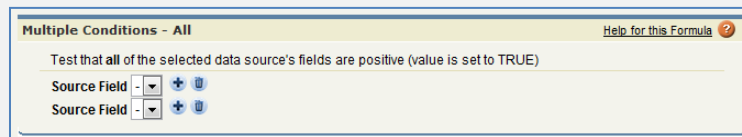
Multiple Conditions – All

This formula checks that all of the conditions that you have specified for the data source fields are valid.

Use case: Your PDF form has a checkbox field. Deciding whether to turn this checkbox on depends on two or more checkbox fields in the source data.

The "Multiple Conditions - All" formula tests the source object's fields and if all of them are validated then the checkbox in the target form will be turned on. On the other hand if one or more fields fail to validate then the checkbox in the target form will remain off.

To customize this Formula select the relevant fields which are to be validated from your source object:



Click  to add another field to test.

Click  to remove a field from a test.

Note: Only checkbox (Boolean) fields can be used in this Formula.

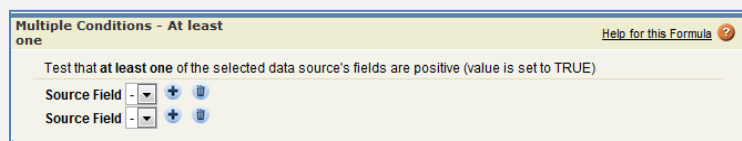
Multiple Conditions – At least one

This formula checks that At least one of the conditions that you have specified for the data source fields is valid.

Use case: Your PDF form has a checkbox field. Deciding whether to turn this checkbox on depends on two or more checkbox fields in the source data.

The "Multiple Conditions - At least one" formula tests the source object's fields and if one of them is validated then the checkbox in the target form will be turned on. On the other hand if all of the fields fail to validate the checkbox in the target form will remain off.

To customize this Formula select the relevant fields to be validated from your source object:



Click  to add another field to test.

Click  to remove a field from a test.

Note: Only checkbox (Boolean) fields can be used in this Formula.

Inverse Condition

The "Inverse Condition formula" enables you to populate the opposite value from the data source into the target form. This means that a positive value (a selected checkbox) in the source object will be populated as a Negative value (unchecked checkbox) in the target form and vice versa.

Use case: Your PDF form has checkbox field which should be turned on if the source object field is set to unchecked and vice versa. The most common use case is when the Form is "asking" the opposite question than the one asked by the source object. For example - the data source indicate whether the customer is single (using a checkbox) while the target form is asking whether the customer is married (using a checkbox).

To customize this Formula select the relevant field which is to be populated in the opposite value from your source object:

The screenshot shows a configuration window titled "Inverse Condition" with a "Help for this Formula" link. Below the title bar, it says "Assigns the selected data source in its opposite value in the filled Form". There is a label "Source Field" followed by a dropdown menu currently showing "Checkbox".

Note: Only checkbox (Boolean) fields can be used in this Formula.

Join Values

This formula joins text values from two or more fields in the data source or from a user defined values. The combined fields can be populated into a single field at the target form.

Use case: Your PDF form has a field where its value should consist of multiple fields' values of the data source.

To customize this Formula select the fields from your source object or define your values to join:

The screenshot shows a configuration window titled "Join Values" with a "Help for this Formula" link. Below the title bar, it says "Join multiple data source values to one". There are two rows of configuration. Each row has a radio button for "Field" (selected) and a radio button for "String". To the right of each radio button is a dropdown menu. To the right of each dropdown menu are two icons: a plus sign (+) and a trash can icon.

The **Field** or **String** radio option, allows you to select whether the joined value is from a source object's field (**Field** option), or a static value (**String** option).

Click  to add another Field or a String.

Click  to remove a Field or a String.

Test Value

This formula checks whether the value from the data source equals to a predefined value.

Use case: Your PDF form has checkbox fields. The correct checkbox in the PDF form should be turned on in accordance with the value in the source object.

To customize this Formula select a relevant **Source Field** from your source object to be compared with a test **Value**:

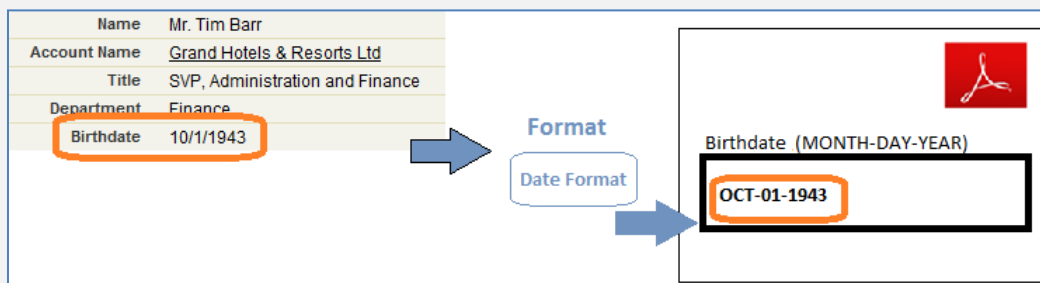
Formats

Overview

Formats provides you with the ability to manipulate the populated data as presented in the populated form. Format is applied on the source data (from source object or PerForm's Formula) and results in one or more populated fields in the designated form.

Perform is provided with a set of predefined Formats which enable to simplify the mapping process. These Formats can be extended by the user using a customization processes. Please refer to [Formats Types](#) in this chapter for more information.

In the following example, the Format changes the presentation style of the source field, before populating the value into the form.



Selecting a Format during the mapping

To select a format enter the “Edit” mode of a field and select a desired Format from the drop down list.

The screenshot shows a configuration window for mapping fields. At the top, there's a 'View' dropdown set to 'Single Field' and buttons for 'Preview' and 'Done'. Below this is a table with columns: 'Action', 'Group', 'Form Field', 'Data Source', and 'Format'. The 'Data Source' column has radio buttons for 'Field' (selected) and 'Formula'. The 'Format' column has a dropdown menu that is currently open, showing 'Sample Format2' (selected), 'Sample Format1', and 'Sample Format2'. A yellow circle highlights the dropdown arrow. The table contains three rows of data:

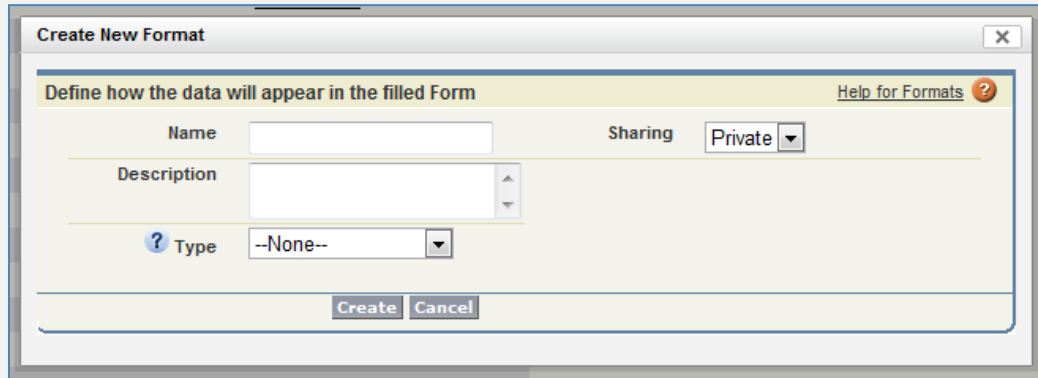
Action	Group	Form Field	Data Source	Format
Save Cancel	☐	"reset" ["Yes"]	☒ Field	Sample Format2
Clear Edit	☐	"100"	☐ Formula	Sample Format1
Clear Edit	☐	"101"		Sample Format2

After selecting the desired Format click on “Save” to store the mapping definition.

Note: Some Formats are used only for grouped fields. These formats will not show on non-group fields.

How to define a new Format?

In order to create a new Format for the form's mapping, enter the “Edit” mode of the field and click on the [+ New Format](#) button. The “Create New Format” window will appear.



Format attributes:

Name	Description	Required
Name	Format name which identifies the format we have created.	Yes
Description	A Short description about format's purpose and intended use.	No
Type	Determines the Format functionality. Please refer to Format Types in this chapter for more information.	Yes
Sharing	Select whether you would like to reuse your new Format in other Forms' mappings. Options are: “Public” – The format could be reused in all Forms in the same organization. “Private” – The format can only be used in the current Form. Default “Private”. Please refer to When should I share my new Formats? For more information.	No

Depending on the Formula type you choose, appropriate fields will be available for customization. Please refer to [Format Types](#) section to learn about Format types.

When should I share my new Formats?

During the creation of the new Format you may specify the “Sharing” option to **Private** or **Public**:

Private – Private Formats can only be reused during the mapping of the current Form.

Public – Public Formats can be reused during the mapping of all of your Forms.

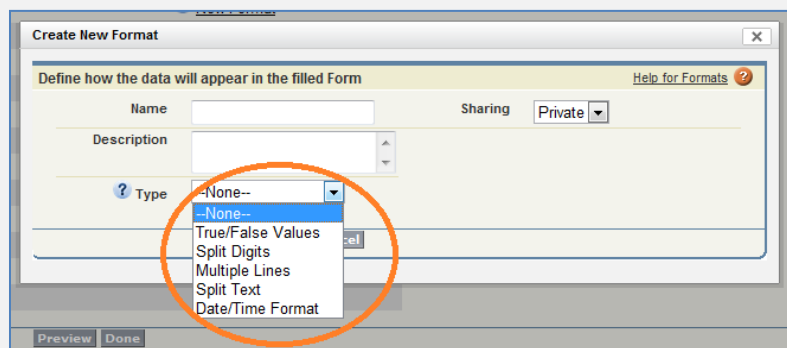
Sharing Formats for future reuse in other Forms is a convenient way to reduce reworks and leverage your existing assets. You should define Formats as **Public** whenever you recognize a potential of reuse.

*Note: When modifying a **Public** Format all of the Forms using this Format will be affected. Modify **Public** Formats only if you are aware of the impact it will have on your forms.*

Format Types

PerForm is provided with a set of predefined formats which can be extended by the user.

When defining a new custom Format you will be required to select a Type from a list. In accordance with the type you have selected the relevant attributes will be available:



Available Format Types:

[True/False Values](#)

[Split Digits](#)

[Multiple Lines](#)

[Split Text](#)

[Date/Time Format](#)

True/False Values

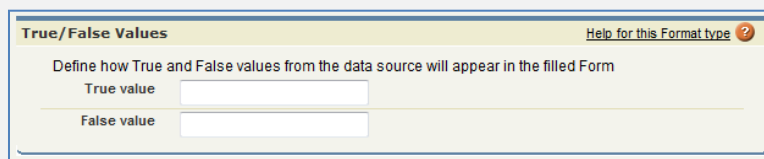
This format defines how True/False values from the source data will be presented in the populated Form.

True values can be: any checked checkbox, the word "yes" in a field or a positive result of a Formula.

False values can be: any unchecked checkbox, the word "no" in a field or a negative result of a Formula.

Use case: Your PDF form requires a specific and different value for True or False results.

To customize this Format define the True and False substituting values:

The screenshot shows a dialog box titled "True/False Values" with a "Help for this Format type" link. The instruction reads: "Define how True and False values from the data source will appear in the filled Form". There are two input fields: "True value" and "False value", both currently empty.

Note: You may define any text values in the True/False value fields.

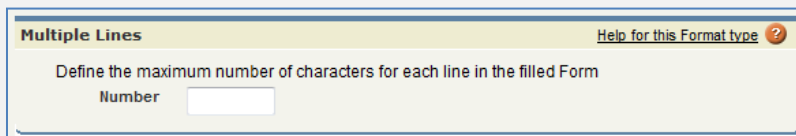
Multiple Lines

This format enables you to define a maximum number of characters for each line in the target form.

Use case: Your PDF form uses multiline text field to contain a large field of the source object.

Note: You should always use this Format for multiline text fields.

To customize this Format enter the maximum number of characters in the "Number" field:

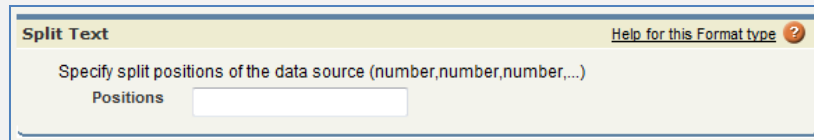
The screenshot shows a dialog box titled "Multiple Lines" with a "Help for this Format type" link. The instruction reads: "Define the maximum number of characters for each line in the filled Form". There is one input field labeled "Number" which is currently empty.

Split Text

This format allows splitting a source text field into multiple fields in the target form. This Format differs from the **Split Digits** format by separating the source text into strings/words as opposed to characters/digits.

Use case: Your PDF form uses multiple fields to represent a single value from the data source.

To customize this Format specify the format by which you would like to split the source data. Separate the positions by using comma signs-','.



Note: The positions should be separated by using comma signs-',' . For example, to split "Mr. John Smith" into three fields – "Mr." "John" "Smith", specify "3,8,14".

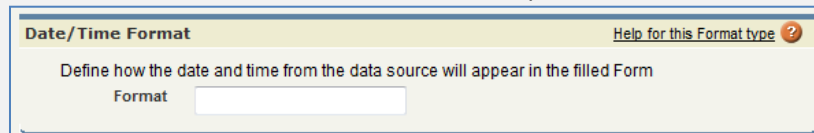
Date/Time Format

This format allows you to define various means of presenting Date and Time values in the populated form.

Use case: Your PDF form requires specific presentation of date or time or the combination of both which differ from who it is represented in the data source.

This format uses advanced and common patterns of date and/or time representation format. Please refer to [Date and Time patterns](#) to learn how to use this pattern.

To customize this format enter the desired Time and/or Date pattern in the "Format" field:

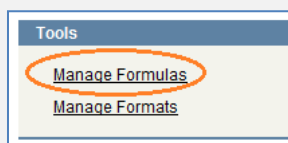


Note: Customizing the "Date/Time" format is not an intuitive task. Date and time representations have multiple nuances. Please make sure you understand the formatting options, and test your definition carefully. Please refer to [Date and Time patterns](#) for more information.

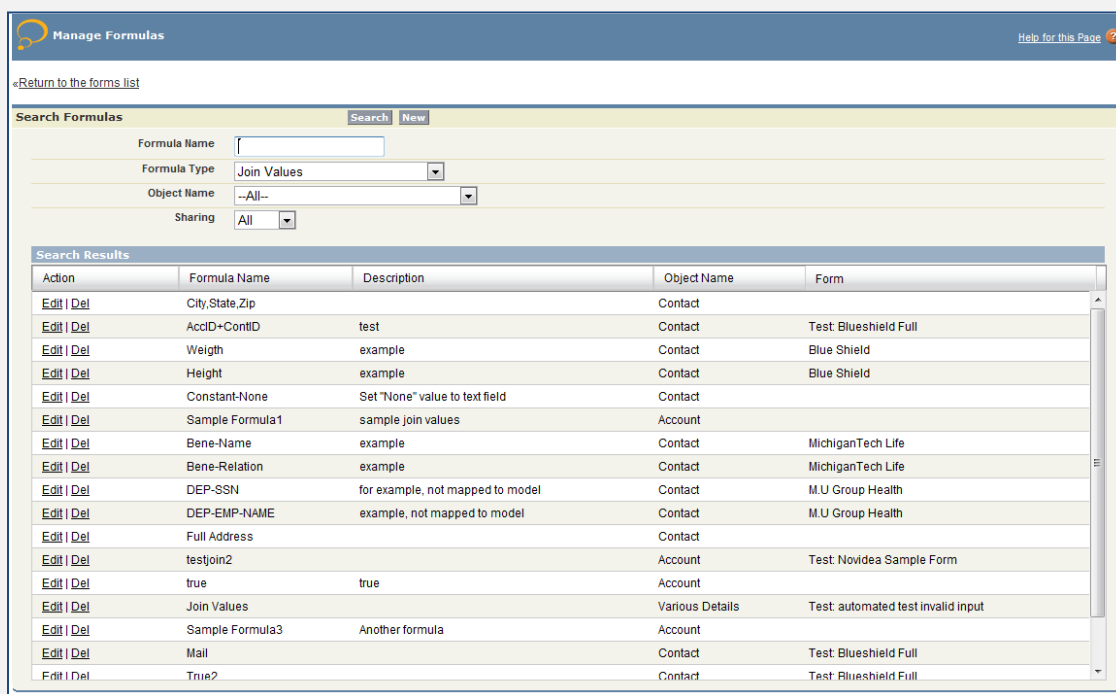
Tools

Manage Formulas

In order to manage Formulas defined in PerForm go to the “Forms” tab and select “Manage Formulas” from the tools menu.



In the “Manage Formulas” page you may search and edit your existing Formulas along with creating new ones.



Manage Formulas

[Return to the forms list](#)

Search Formulas

Formula Name:

Formula Type:

Object Name:

Sharing:

Search Results

Action	Formula Name	Description	Object Name	Form
Edit Del	City,State,Zip		Contact	
Edit Del	AccID+ContID	test	Contact	Test: Blueshield Full
Edit Del	Weigth	example	Contact	Blue Shield
Edit Del	Height	example	Contact	Blue Shield
Edit Del	Constant-None	Set "None" value to text field	Contact	
Edit Del	Sample Formula1	sample join values	Account	
Edit Del	Bene-Name	example	Contact	MichiganTech Life
Edit Del	Bene-Relation	example	Contact	MichiganTech Life
Edit Del	DEP-SSN	for example, not mapped to model	Contact	M.U Group Health
Edit Del	DEP-EMP-NAME	example, not mapped to model	Contact	M.U Group Health
Edit Del	Full Address		Contact	
Edit Del	testjoin2		Account	Test: Novidea Sample Form
Edit Del	true	true	Account	
Edit Del	Join Values		Various Details	Test: automated test invalid input
Edit Del	Sample Formula3	Another formula	Account	
Edit Del	Mail		Contact	Test: Blueshield Full
Edit Del	True2		Contact	Test: Blueshield Full

In the upper part of the page you may define a search criteria in order to find the desired Formula. The search results will be displayed in the “Search Results” table.

Actions:

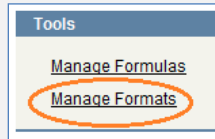
Edit – Click to edit a selected formula details.

Del – Click to delete the selected formula.

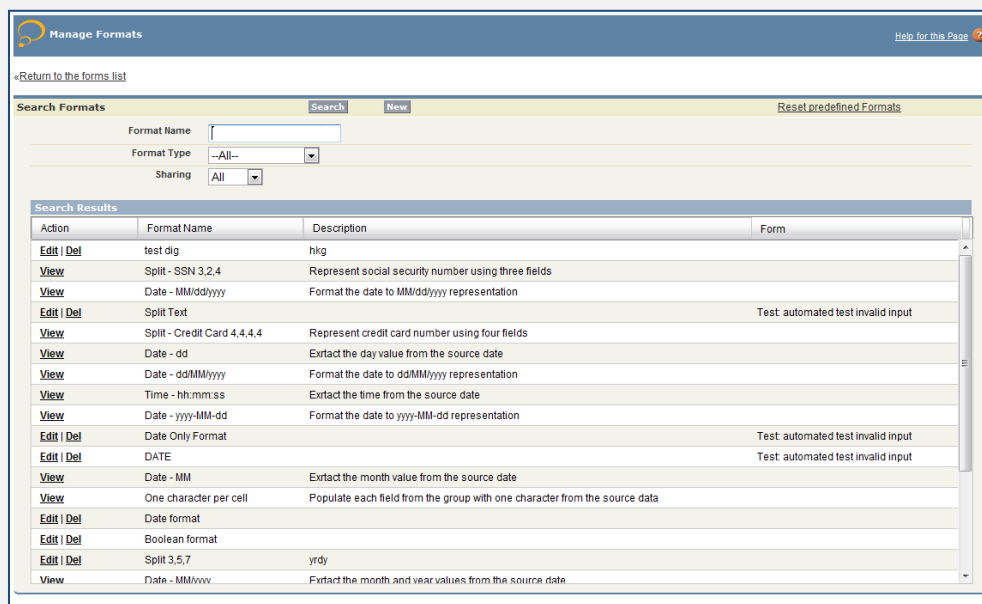
You may use the button to define a new Formula. You may define only **Public** formulas from this page. To define **Private** formulas please use the  [New Formula](#) button in the mapping edit view.

Manage Formats

In order to manage Formats defined in PerForm, go to the “Forms” tab and select the “Manage Formats” from the tools menu.



In the “Manage Formats” page you may search and edit your existing Formats along with creating new ones.



Action	Format Name	Description	Form
Edit Del	test dig	hkg	
View	Split - SSN 3,2,4	Represent social security number using three fields	
View	Date - MM/dd/yyyy	Format the date to MM/dd/yyyy representation	
Edit Del	Split Text		Test: automated test invalid input
View	Split - Credit Card 4,4,4,4	Represent credit card number using four fields	
View	Date - dd	Extract the day value from the source date	
View	Date - ddMM/yyyy	Format the date to ddMM/yyyy representation	
View	Time - hh:mm:ss	Extract the time from the source date	
View	Date - yyyy-MM-dd	Format the date to yyyy-MM-dd representation	
Edit Del	Date Only Format		Test: automated test invalid input
Edit Del	DATE		Test: automated test invalid input
View	Date - MM	Extract the month value from the source date	
View	One character per cell	Populate each field from the group with one character from the source data	
Edit Del	Date format		
Edit Del	Boolean format		
Edit Del	Split 3,5,7	yrdy	
View	Date - MM/yyyy	Extract the month and year values from the source date	

In the upper part of the page you may define search criteria to find the desired Format. The search results will be displayed in the “Search Results” table.

Actions:

Edit – Click to edit the selected format details.

Del – Click to delete the selected format.

You may use the [New](#) button to define a new Format. You can define only **Public** formats in this page. In order to define **Private** formats please use the [+ New Format](#) button located in the mapping edit view.

An Appendix

Troubleshooting

In this section you will find answers for problems or common questions you may encounter working with PerForm.

If you cannot find a solution in this in this guide, please contact us at support@novideasoft.com

I cannot see the “Generate with PerForm” button

Symptom

In the standard object page the “Generate with PerForm” button is not shown.

Recommended solutions

1. In your application's setup menu make sure that the relevant standard object has a custom button “Generate with PerForm”.
2. Make sure that the button is associated with the relevant standard object layout.
3. You may review the [Define custom action to Generate object](#) guide and redefine the button in case steps 1, 2 fail.

The generated PDF is empty

Problem

When pressing “Generate” button, the generated PDF form is shown with no data in it.

Recommended solutions

1. Check that your mapping definition is correct.
2. In order to isolate an invalid mapping of a specific field please use the generate form preview after each mapping definition you define in the form.
3. Check if your browser is supported and configured correctly. Please refer to [How to configure my browser to view PDF](#) for more information.

A "File is too large" error message

Problem

During the upload of a new PDF file, you receive an error message specifying that the file size is too large.

Recommended solutions

Due to technical specification in the Salesforce.com platform the current version of PerForm supports PDF files up to a size of 2.3Mb.

If you own the PDF file try to reduce its size by lowering the size/resolution of embedded images in the file.

There is no group checkbox in a row of a specific field

Symptom

In the mapping page a field has no checkbox enabling it for grouping.

Recommended solutions

The field is not of a valid type for groups (e.g. the field is of Radio Button type).

I have created a new format but I cannot see it

Symptom

A new format you have created does not appear in the formats list available for a given field or group in the mapping page.

Recommended solutions

1. The desired format doesn't fit the specific field. For example, a "Split Text" format may be selected only for a group of fields, and not for an individual field.
2. Try refreshing the page.
3. The wanted format might be a private format created for another Form. In such case you may act in the following manner:
 - a) Create the format again in the desired Form.
 - b) Change the format type to "Public". By doing so, it will enable you to use the format in all of your forms.

A PDF file does not open or opens blank when clicking "Preview" in the "Forms" Tab

Symptom

When entering a form in the Forms Tab and clicking the Preview button to view the form, the shown form is blank or an error message appears with the wording "please wait" or a form in XFDF format does not open up.

Recommended solutions

In case you are using In case you are using a Windows operating system with a Chrome browser please take the following steps:

1. Navigate to Chrome: `//plugins/`.
2. Enable the Adobe/Acrobat plugin instead of the default Chrome PDF Viewer.

If the problem still persists or if the Adobe plugins are not available in the browsers, we recommend taking the following steps in order to repair the Adobe configuration:

1. Close any open Browsers.
2. Open Adobe Reader or Acrobat, choose Edit> Preferences.
3. Select Internet.
4. Select Display PDF in browser and then click OK.
5. Close the preferences.
6. Choose Help>Repair Adobe installation (be aware this might take a while).
7. Restart the computer (not mandatory).

In case you are using a Mac OSX operating system please notice that you can't use a Chrome browser and you will need to use the Safari browser.

To configure a Safari browser to open PDF documents please take the following steps:

1. Open Applications>Utilities>Terminal.
2. Copy & paste the following command: `defaults write com.apple.Safari WebKitOmitPDFSupport -bool NO.`

In case you are using OS X Snow Leopard (10.6) 64bit operating system please follow the instruction on Adobe's website: http://kb2.adobe.com/cps/509/cpsid_50983.html

In order to open a form in XFDF format using Adobe reader on MAC OSX operating system please take to following steps:

1. Open Adobe Reader>Preferences>Internet.
2. Mark the checkbox "Display PDF in browser.
3. Mark the checkbox "Allow fast web view".

Define custom action to Generate an object

To associate the PerForm button with your standard object you should define a custom button on the desired object. Then you may add the button to the object page layouts.

Step 1:

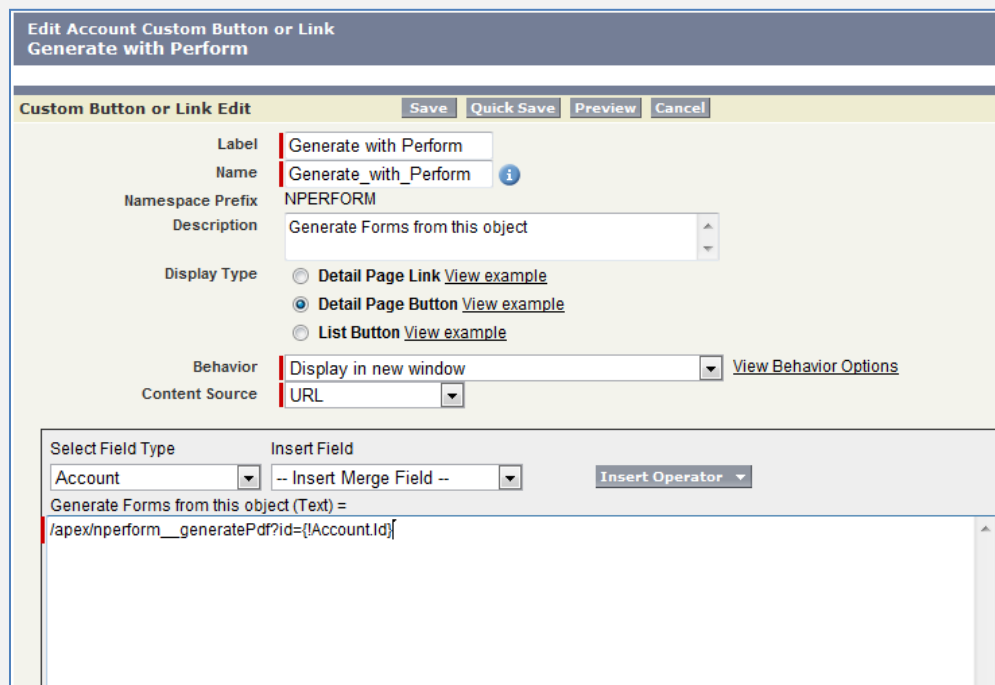
Go to **Setup → App Setup → Customize → [Object Name] → Buttons and Links**

The [Object Name] is the object you would like to add the custom button (e.g. Accounts).

Click **New** in the “Custom Buttons and Links” section.

Step 2:

Fill in the fields as illustrated in the example:



Edit Account Custom Button or Link
Generate with Perform

Custom Button or Link Edit Save Quick Save Preview Cancel

Label: Generate with Perform

Name: Generate_with_Perform ⓘ

Namespace Prefix: NPERFORM

Description: Generate Forms from this object

Display Type: ☐ Detail Page Link [View example](#)
☒ Detail Page Button [View example](#)
☐ List Button [View example](#)

Behavior: Display in new window View Behavior Options

Content Source: URL

Select Field Type: Account Insert Field: -- Insert Merge Field -- Insert Operator: [v]

Generate Forms from this object (Text) =
/apex/nperform__generatePdf?id={!Account.Id}

Label – Generate with PerForm

Name – Generate_with_PerForm

Description – Generate Forms from this object

Display Type – Detailed Page Button

Behavior – Display in new window

Content Source – URL

In the text area copy-paste the following text:

/apex/nperform__generatePdf?id={!Object.id}

Change the **Object** to the name of the object you are customizing (like Account, Contact).
For example in the Contact object the text will look like:

/apex/nperform__generatePdf?id={!Contact.id}

Click **Save** to store the customized button.

Step 3:

Go to **Setup → App Setup → Customize → [Object Name] → Buttons and Links**

The *[Object Name]* is the object to which you would like to add the custom button (e.g. Accounts).

Click on the **Name** of the newly added custom button:

Custom Buttons and Links			New	Default Custom
Action	Label	Name		
Edit Del	Billing	Billing		
Edit Del	Generate with Perform	Generate_with_Perform		

Step 4:

In the opened window click on **Window Open Properties**

Fill in the details as illustrated in the example:

Window Properties	
Width (in pixels)	600
Height (in pixels)	300
Window Position	No Preference ▼
Resizable	☐
Show Address Bar	☐
Show Scrollbars	☐
Show Toolbars	☐
Show Menu Bar	☐
Show Status Bar	☐

Width – 600

Height – 300

Window Position – No Preference

Resizable – Unchecked

Show Address Bar – Unchecked

Show Scrollbars – Unchecked

Show Menu Bar – Unchecked

Show Status Bar – Unchecked

Click **Save**.

After creating the custom "Generate with PerForm" button you may associate it with the desired object pages.

Step 1:

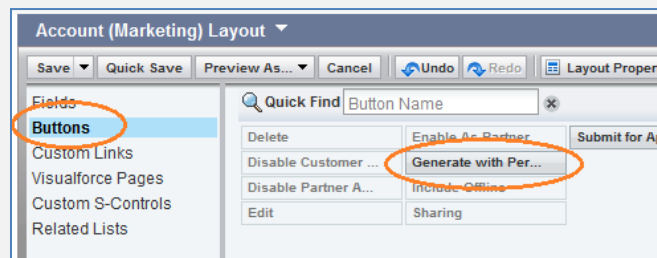
Go to **Setup → App Setup → Customize → [Object Name] → Buttons and Links**

The [Object Name] is the object to which you would like to add the custom button (e.g. Accounts).

Click **Edit** on desired Page layout.

Step 2:

Add the new button to the page:



Select the **Buttons** option from the menu.

Drag and Drop the **“Generate with PerForm”** button to the page layout.

Click **Save**.

Add PerForm's Predefined Formats

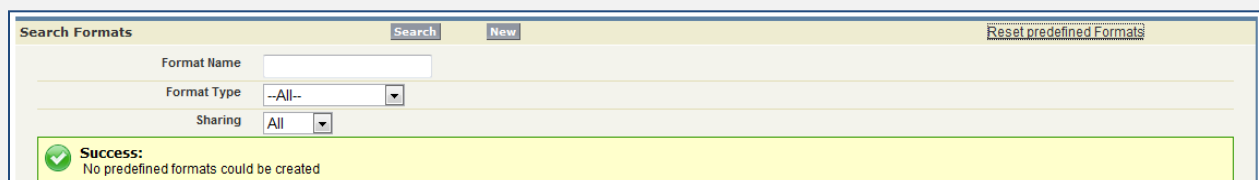
PerForm comes with a predefined set of commonly used formats (such as SSN splitting, date formats etc.). Adding these formats to your PerForm is a simple task, as follows:

Go to **Forms → Manage Formats**.

Click Reset predefined Formats



A notification of approval will appear at the end of the process



Supported PDF formats

In the current version PerForm supports fillable PDF files (embedded AcroForms).

PDF files with no input fields are not supported. Adding input fields to your PDF file should be done using designated software subject to its license agreements.

How to configure my browser to view PDF?

PerForm was developed to support common web browsers both on Windows and Mac operating systems.

The supported browsers are: Internet Explorer, Google Chrome, Mozilla Firefox, and Safari.

Some of the browsers will download the generated file to your computer so you may need to open them manually.

In order to allow automatic opening of the filled form please configure your browser to open files with the following types: **application/vnd.adobe.xfdf** and **application/pdf** using your desired PDF viewer. Usually Adobe Acrobat is the default viewer which will open these files.

***Note:** PerForm creates an XFDF file containing the populated data. This file type extension is of filename.XFDF. Please configure your default PDF viewer to open this file type. Adobe Acrobat will open these files by default.*

Mac OS X Support

The following configuration instructions are optional. Most of the Mac OS, Safari and Adobe default configurations support opening PDF and XFDF files. Please use the following configurations only in case of troubleshooting.

To support reading XFDF files with Adobe Reader on Mac OS X apply the following steps:

1. Open Adobe Reader > Preferences > Internet.
2. **Check** "Display PDF in browser using" and **Check** "Allow fast web view".

To configure Safari browser to open PDF documents apply the following steps:

1. Open Applications > Utilities > Terminal
2. Copy & paste the following command:

```
defaults write com.apple.Safari WebKitOmitPDFSupport -bool NO
```

Users running OS X Snow Leopard (10.6) 64bit should follow the instruction on Adobe's website:

http://kb2.adobe.com/cps/509/cpsid_50983.html

Date and Time patterns

Date and time formats are specified by **date and time pattern** strings. Within the date and time pattern strings, unquoted letters from 'A' to 'Z' and from 'a' to 'z' are shown and are interpreted as format characters (See table below). The format characters are case-sensitive; for example, 'f' and 'F' represent different patterns.

Examples:

Pattern	Result
DD/MM/yyyy	31/02/2000
DD/MM	31/02
MM/DD	02/31
yyyy/DD/MM	2000/31/02
hh:mm:ss	8:30:55
HH:mm:ss	20:30:55

Pattern specification:

Format Character	Description
D	Short date pattern
D	Long date pattern
F	Full date and time (long date and short time)
F	Full date time pattern (long date and long time)
G	General (short date and short time)

Format Character	Description
G	General (short date and long time)
m, M	Month day pattern
r, R	RFC1123 pattern
S	Date time patterns (based on ISO 8601) using local time which may be sorted
T	Short time pattern
T	Long time pattern
Y	Month year pattern

The table below shows a list of patterns that can be combined in order to create date format patterns. The patterns are case-sensitive; for example, "MM" is recognized, but "mm" is not. If the date format pattern contains white-space characters or characters enclosed in single quotation marks ('), the formatted string will also contain those characters.

Format Pattern	Description
D	The day of the month. Single-digit days have no leading zero. (Only if used in the context of a longer pattern. A single "d" on its own represents the Short date pattern.)
Dd	The day of the month. Single-digit days have a leading zero.
Ddd	The abbreviated name of the day of the week.
dddd	The full name of the day of the week.
M	The numeric month. Single-digit months have no leading zero. (Only if used in the context of a longer pattern. A single "M" on its own represents the Month day pattern.)

Format Pattern	Description
MM	The numeric month. Single-digit months have a leading zero.
MMM	The abbreviated name of the month.
MMMM	The full name of the month.
y	The year without the century. If the year without the century is less than 10, with no leading zero. (Only if used in the context of a longer pattern. A single "y" on its own represents the Month year pattern.)
yy	The year without the century. If the year without the century is less than 10, with a leading zero.
yyy	The year in four digits, including the century.
gg	The period or era (e.g. "A.D."). This pattern is ignored if the date to be formatted does not have an associated period or era.
h	The hour in a 12-hour clock. Single-digit hours have no leading zero.
hh	The hour in a 12-hour clock. Single-digit hours have a leading zero.
H	The hour in a 24-hour clock. Single-digit hours have no leading zero.
HH	The hour in a 24-hour clock. Single-digit hours have a leading zero.
m	The minute. Single-digit minutes have no leading zero. (Only if used in the context of a longer pattern. A single "m" on its own represents the Month day pattern)
mm	The minute. Single-digit minutes have a leading zero.
s	The second. Single-digit seconds have no leading zero. (Only if used in the context of a longer pattern. A single "s" on its own represents the sortable time pattern.)

Format Pattern	Description
ss	The second. Single-digit seconds have a leading zero.
t	The first character in the AM/PM designator. (Only if used in the context of a longer pattern. A single "t" on its own represents the short time pattern.)
tt	The AM/PM designator.