

About Custom Formula Type

1. Formula is one of the data type of the field.
2. This is used to derive its value from a formula expression you define.

Literal Value	<p>The hardcoded text string or number in the formula. For example, if there is a formula to calculate bonus of employees where the percentage of bonus is always 20% from the salary field (Salary__c).</p> <p>Salary__c *0.20</p> <p>Here the number 0.20 is hardcoded that would never change in the calculation.</p>
Field Reference	<p>This denotes the standard or custom field of object that is referred in formula. Salary__c is a custom field reference. Field from related object can also be referred in below format. If standard object and standard field. ObjectName.FieldName</p> <p>If custom object and custom field. ObjectName__r.FieldName</p>
Function	<p>System defined formula such as ISBLANK(value), TODAY() etc.,. Some required input from user such as ISBLANK(value), ISCHANGED(value) etc., and some of them do not require any value like TODAY() which return current date always.</p>
Operator	<p>Used to specify the types of calculation to perform</p>
Comment	<p>Use forward slash followed by an asterisk (/*) to being the comment and ends with an asterisk followed by a forward slash (*/*).</p> <p>Example /*this is a comment in formula*/</p>

3. Every formula in the salesforce returns the result in any of the below format

- a. Checkbox
- b. Currency
- c. Date
- d. DateTime
- e. Number
- f. Text
- g. Percent

4. Steps to create the formula.

Setup

|---Build

|---Create

|---Object

|--- Custom Fields & Relationships

|--- New

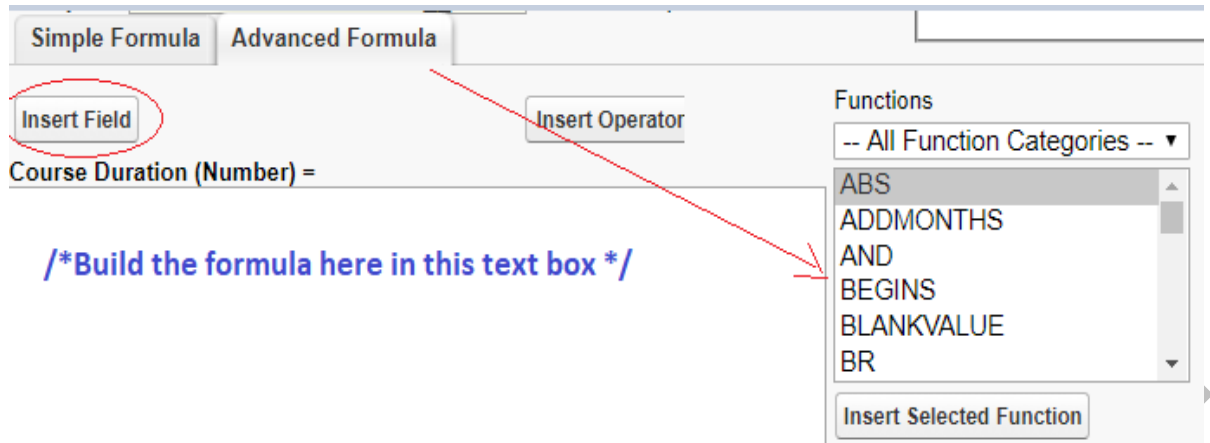
Step 1: Choose the field type as "Formula"

Step 2: Choose output type (return type of the formula)

Step 3: Create the formula here

Note: If required, select the object field from the option "Insert Field".

Choose the "Advanced Formula" to select get the list of predefined functions.



Step 4: Give the field level security

Step 5: Add the field to the layouts.

5. Global Data:

- Data which remains constant throughout the application is called global data
- All global objects are prefixed with '\$' sign

Example:

\$Organization

\$User

\$UserRole

\$System

\$Api

Formula Example:

- | | |
|-------------|-------------------|
| Object | : Training__c |
| Field Name | : Course Duration |
| Return Type | : Number |

Formula Editor:

End_DateTime__c - Start_DateTime__c

- | | |
|-------------|---------------|
| Object | : Training__c |
| Field Name | : Total Hours |
| Return Type | : Number |

Formula Editor:

Course_Duration__c * Hours per Day

Formula can also be built by using pre-defined functions provided by Salesforce as follows.

PRE-DEFINED FUNCTIONS IN SALESFORCE:

IF(Logic Condition, return_value_if_true, return_value_if_false)

Where

Logic Condition: This is a logical check which would return true or false.

Example:

1. If Fee__c = 0, then return the text 'is a Free Course' or 'is a Paid Course',

Object : Training__c

Field Name : This Course

Return Type : Text

Formula Editor:

IF (Fee__c = 0, 'is a Free Course', 'is a Paid Course')

2. If No_of_Seats__c <= 50, then return the text "Seats are available" else "Seats are filled".

Object : Training__c

Field Name : Availability

Return Type : Text

Formula Editor:

IF(No_of_Seats__c < 50, 'Seats are available', 'Seats are filled')

3. Calculate Bonus

Object : Employee__c

Field Name : Bonus

Return Type : Percent

If Salary = 5000, give bonus 0.20

If Salary = 7500, give bonus 0.15

if Salary = 10000, give bonus 0.10

For any other salary, give bonus 0.

This is an example to handle multiple condition using nested IF.

Formula Editor:

**IF(Salary__C = 5000, 0.20,
IF(Salary__c = 7500, 0.15,
IF(Salay__c = 10000, 0.10, 0)))**

AND (cond1, cond2,...), This will return true if all the arguments (conditions) are true.

NOW() this returns current date time.

This formula returns small if price of the product < 1nd Quantity is lesser than 5

IF(AND(Price<100,Quantity<5),"Small", null)

Use this operator '&&' as an alternative to the logical function AND.

IF((Price<100 && Quantity<5),"Small", null)

Example:

1. If Course had already started and the course type is online, then provide discount 10%

Object : Training__c
Field Name : Discount__c
Return Type : Percent

Step 1: Start_DateTime__c > NOW() and

Step 2: Online_Type__c = TRUE

Step 3: Combine the Step 1 and Step 2

AND(Start_DateTime__c > NOW() , Online_Type__c)

Note: Online_Type__C is a checkbox field and hence can be referred without explicit Boolean check as "Online_Type__c = true"

Formula Editor:

IF(AND(Start_DateTime__c > NOW() , Online_Type__c), 0.10,0)

The above formula can also be written as

IF(Start_DateTime__c > NOW() && Online_Type__c, 0.10,0)

2. Show the employee is eligible for bonus only if they are in-service and years of experience > 1.

Object : Employee__c
Field Name : Bonus Eligibility?
Return Type : CheckBox

The Status__c is a picklist type which cannot be used directly referred as Status__c = 'In Service' like a text field. Instead use any of the below function

TEXT() - this will convert value to text. Eg., TEXT(Status__c) = 'In Service'

ISPICKVAL(Field,'Literal') => returns true if field is equal to literal given.

Eg., ISPICKVAL(Status__c,'In Service')

AND(TEXT(Status__c) = 'In Service', Years_of_Exp__c > 1)

Formula Editor

IF(AND(TEXT(Status__c) = 'In Service', Years_of_Exp__c > 1),True, False)

OR(Cond1, Cond2, Cond3,,,) This function returns true if any of the argument is true.

Example:

1. If Years_of_Experience__c > 10 or Salary__c > 100000 then display as 'Critical Employee'

Object : Employee__c
Field Name : Priority
Return Type : Text

Formula Editor

IF(OR(Years_of_Experience__c > 10 , Salary__c > 100000), 'Critical Employee', NULL)

Use this operator ' || ' as an alternative to the logical function AND.

IF((Years_of_Experience__c > 10 || Salary__c > 100000), 'Critical Employee', NULL)

2. This formula returns 'Fast Track Course' if Course Duration is between 1 and 30.

IF(OR(Course_Duration__c > 1, Course_Duration__c < 30),'Fast Track Course', 'Regular Course')

& is used to concatenate the text

TEXT() - this will convert value to text.

1. Display the text to show the course name and when it starts

Eg., The course 'SFDC Admin' begins at 05/07/2019

Object : Training__c

Field Name : Notification

Return Type : Text

Formula Editor:

'The Course ' & Course_Name__c & ' begins at ' & TEXT(Start_DateTime__c)

Explanation:

The field Start_DateTime__c is not a string and hence cannot be concatenated with another string. So this must be converted to text using TEXT() function.

ISBLANK(arg) => Returns true if the argument does not have any value. This function will support both number as well as text type of argument.

1. Bonus with respect to salary range

If Salary > 5000 and < 15000, then provide bonus 10%

If Salary > 15000 and < 30000, then provide bonus 5%

If Salary < 5000, then bonus 15%.

Formula:

IF(OR(Salary > 5000, Salary < 15000), 0.10,
IF(OR(Salary > 15000, < 30000), 0.05,
IF(OR(Salary < 5000, 0.15), 0)))

2. Calculate the lead score with respect to number of contact information available as below

Object : Training__c

Field Name : Lead Score

Return Type : Number

Condition	FieldName	Blank/Null	Lead Score Points
	Phone	0	10
	Email	0	10
	FirstName	0	10
	AnnualRevenue	> 0	20

Formula Editor:

IF(ISBLANK(Phone) ,0 ,10) +
IF(ISBLANK(Email), 0, 10) +
IF(ISBLANK(FirstName),0,10) +
IF(AnnualRevenue > 0 , 20 ,0)

NOT(field1/expr) -> return true if argument is resolved to false and vice versa

Example:

i. Salary = 6000

NOT(Salary > 5000) => False

ii. Name => if field is not blank, then return true

NOT(ISBLANK(Name))

CASE() - Checks an expression against a series of values. If the expression compares equal to any value, the corresponding result is returned

Syntax: CASE(Expression,

value1, return_value1,

value2, return_value2,

value3, return_value3,

return_value4)

Example:

This formula returns how much travelling allowance is allowed with respect to trainer's city

Formula Editor:

```
CASE(City,
    'Hyderabad' , 300,
    'Noida', 500,
    'Chennai', 1000,
    100)
```

IMAGE(URL,ErrorMessage) : This will print the image ,if the url is not working then it throws error message.

Note: if you want print image using formulas we have to take return type of the formula as Text.

Object : Lead

Field Name : Lead Score

Formulae Field : Lead Rating

Return Type : Text

Condition : LeadScore Rating

50	5 star
40	4 Star
30	3 Star
20	2 star
10	1 star
0	0 star

Formula Editor:

```
IMAGE ( CASE(Lead_Score__c ,
    50,'img/samples/stars_500.gif',
    40, 'img/samples/stars_400.gif',
    30, 'img/samples/stars_300.gif',
    20, 'img/samples/stars_200.gif',
    10, 'img/samples/stars_100.gif',
    'img/samples/stars_000.gif'),
    'Image not Found' )
```

DATE RELATED FUNCTION

TODAY () : This will return today's date .

NOW() : This will give you current date and time .

DATE(YYYY,MM,DD) : This will return the instance of the date

DATE(2010,10,23)

DATE(2019,2,23)

DAY(Date) : This will return you the day in the month .

DAY(TODAY()) : 8

DAY(Date(2019,2,23)) : 23

MONTH(Date) : This will return the month in the date

MONTH(TODAY()) : 06

MONTH(Date(2019,2,23)) : 2

YEAR(Date) : This will return the year in the given date.

YEAR(TODAY()) : 2019

DATEVALUE(expression) : This will return the date in the expression

DATEVALUE(NOW()) : TODAY

UseCase:

Object : Account

Formula Field : Modified before

Condition : Calculate how many days back record was last modified.

LastModifiedDate : DateTime

TODAY() - DATEVALUE>LastModifiedDate)