

Development: Implementing Business Processes

Lesson 12: Building Business Processes





Lesson Objectives

By the end of this lesson, you will be able to:

- List typical business requirements in the area of business
- List some features of the Force.com platform that help you implement business processes
- Describe how the VLOOKUP function can be used to solve a business requirement
- Describe how the REGEX function can be used to solve a business requirement
- Describe how the IS CHANGED, IS NEW, and PRIOR VALUE functions can be used to solve a business requirement



Application Building Blocks

Applications
Tabs
Page Layouts
Record Types



User
Interface

Force.com Pages
Web controls
Sites



Workflow
Validation Rules
Approval Processes



Business
Logic

Force.com Page Controllers
Force.com code
Web Services API



Objects
Fields
Relationships



Data
Model

Web Services API
Metadata API



Declarative

Programmatic

Simplicity + Speed

Control + Flexibility

Typical Business Requirements



Preserving data quality

- Example: As new positions are entered, Universal Containers would like to ensure that the appropriate fields are filled out

Automating processes

- Example: Positions must be approved before recruiters start recruiting for them

Keeping processes from getting “stuck”

- Example: A position open for more than 30 days without candidates triggers an email to the recruiter to jump start recruitment procedures

Keeping systems in sync

- Example: Outbound messages help keep Salesforce in sync with other system

- **Auditing**

- Example: Track any changes to the ranking of a candidate

Features of the Force.com Platform That Can Help



Features of the Force.com Platform That Can Help

There are a number of features that address and automate management of these business requirements.

Formula fields

Validation rules

Approval Processes

Field History Tracking



Outbound Messaging

Time-Development Workflow

Setup Audit Trail

Useful Operators and Functions

Useful Operators and Functions



Validation Rule Edit

SaveSave & NewCancel

Rule Name

Every_Position_Must_Have_a_Hiring_Mgr

Active

☒

Description

Every Position Must Have a Hiring Mgr

Error Condition Formula

Example:

Discount_Percent__c>0.30

[More Examples ...](#)

Display an error if Discount is more than 30%

If this formula expression is **true**, display the text defined in the Error Message area

Insert Field

Insert Operator

LEN(Hiring_Manager__c) = 0

Check Syntax

Functions

-- All Function Categories --

ABS
AND
BEGINS
BLANKVALUE
BR
CASE

Insert Selected Function

ABS(number)
Returns the absolute value of a number, a number without its sign

[Help on this function](#)



Useful Operators and Functions

IF

Determines if expressions are true or false. Returns a given value if true and another value if false

Example: if the offer expiration date is less than the offer status is set to sent, display "Follow Up on offer," otherwise, the field should be blank.

ISNEW

- Checks if the formula is running during the creation of a new record and returns TRUE if it is. If an existing record is being updated, this function returns FALSE
- **Example:** Ensure that hiring managers don't back date the open date on a position to increase its perceived urgency by using ISNEW and checking whether the Open Date <Today()



ISPICKVAL

Determines if the value of a picklist is equal to a string you specify

Example: use in conjunction with IF to test if the status of an offer is accepted. If so, show the Actual Salary * 10% to calculate a bonus amount, otherwise, display no value.

IF (ISPICKVAL(Status,"Accepted"), ROUND(Actual_Salary__c * 0.1,2) , 0)

Note: ISPICKVAL is not used alone. It must be used any time that you're referring to a field that is a picklist (except when using the CASE function).



Useful Operators and Functions

REGEX

Compares a text field to regular expression and returns TRUE if there is a match. Otherwise, it returns FALSE. A regular expression is string used to describe a format of a string according to certain syntax rules

Example: check to make sure that the social security number of a candidate matches a regular expression representing a valid social security number in the correct format.

```
NOT( OR( LEN (Social_Security_Number__c) = 0, REGEX(
Social_Security_Number__c , "[0-9]{3}-[0-9]{2}-[0-9]{4}") ) )
```



VLOOKUP

Returns a value by looking up a related value on a custom object similar to the VLOOKUP() Excel function

Note: This formula checks against a key and returns a value from that key

Example: Check the state and zip code entered on a record against a table of states and zip codes (key) to ensure that the state and zip code match (returns a value)

ISNUMBER

Determines if a text value is a number and returns TRUE if it is. Otherwise, it returns FALSE.

Example: Check to make sure the contract number for a contractor in a temporary position is strictly numerical digits



Useful Operators and Functions

CASE

Checks a given expression against a series of values. If the expression is equal to value, returns the corresponding result. If it is not equal to any values, returns the else result

Example: Use CASE to evaluate the number of days that a position is open, and display a value depending on the result. For positions open 1 week, display "Maintain," for positions open 4 weeks, display "Assign Task", etc.

IMAGE

Insert an image with alternate text and height/width specifications

Example: If status is "Escalated", show a red flag, if status is "Under Review", show a yellow flag, if status is "All Clear" show a green flag



Useful Operators and Functions

Functions for encoding

- HTMLENCODING
- JSENCODE
- JSINHTMLENCODE
- URLENCODE

These functions make it safe to insert data that you do not control, such as merge field values and URL parameters in your custom buttons, links, and Force.com pages

The encoding functions escape or replace characters that are reserved or unsafe in HTML, JavaScript and URLs.



Useful Operators and Functions

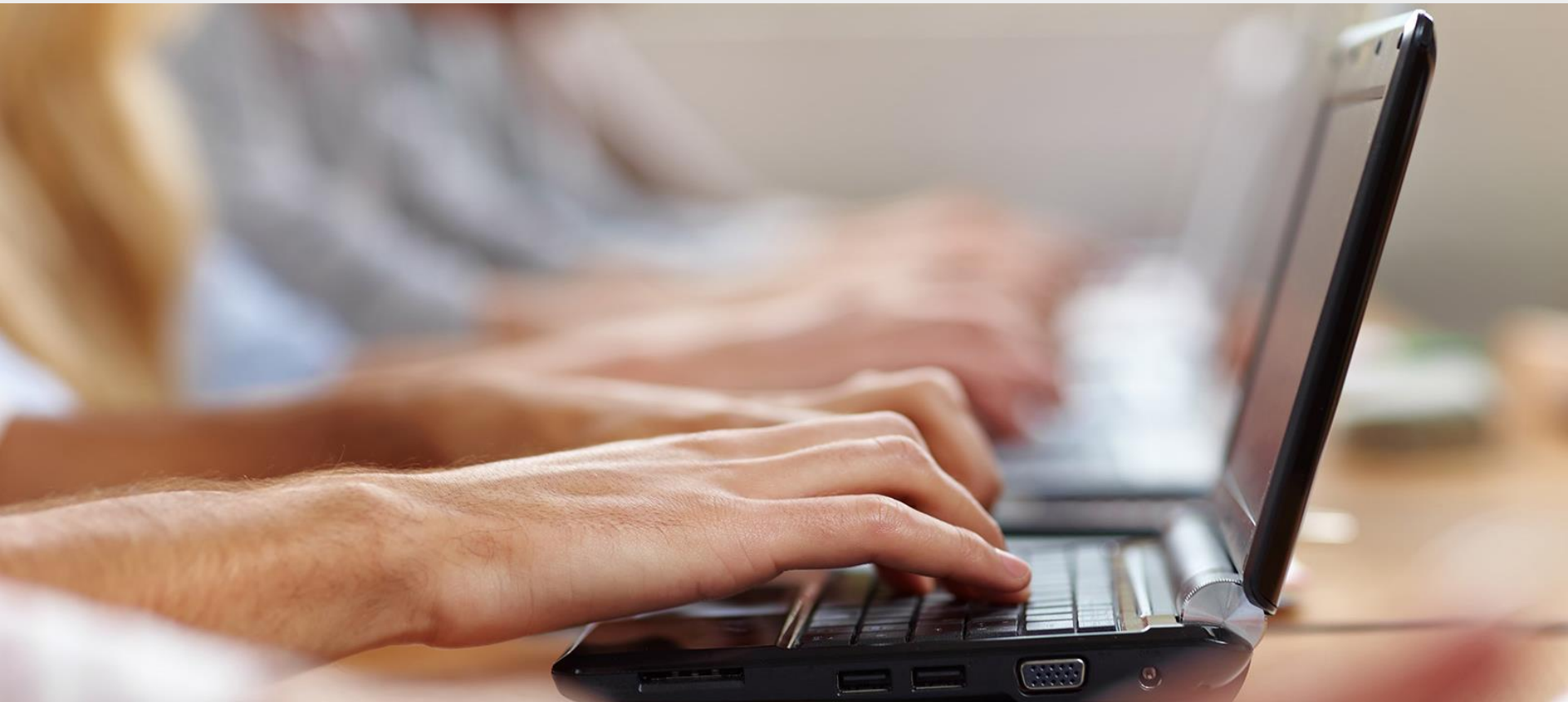
	Approval Process	Default Values	Field Updates	Formula Field	Workflow Rules	Validation Rules
CASE	√	√	√	√	√	√
IF	√	√	√	√	√	√
IMAGE				√		
ISCHANGED			√		√*	√
ISNEW			√		√	√
ISNUMBER	√	√	√	√	√	√
ISPICKVAL	√			√	√	√
PRIORVALUE			√		√*	√
REGEX	√	√	√		√	√
VLOOKUP						√

* Used in workflow when the rule is evaluated



Demo

Creating Formula field to display Images
Creating Formula field to display
hyperlinks



Monitoring Processes



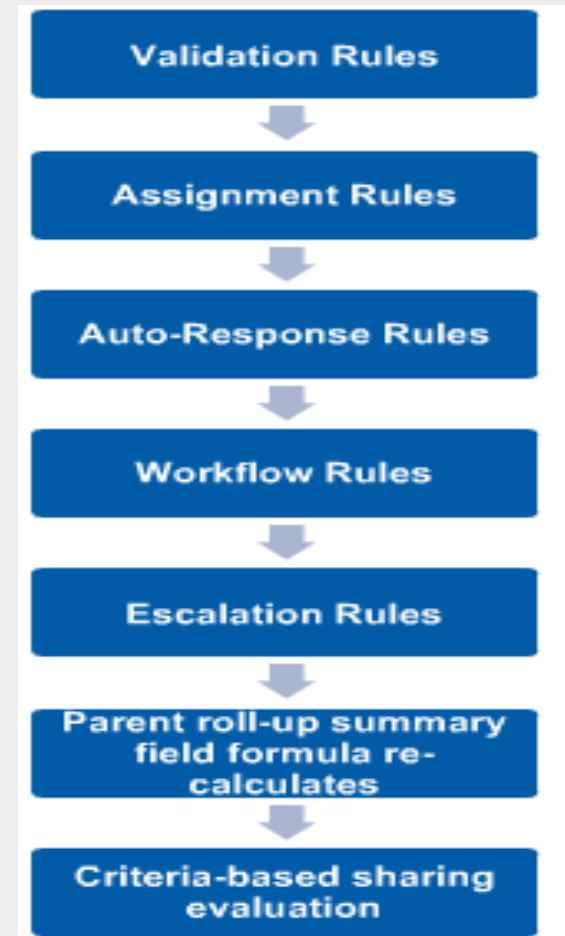
What are Debug Logs?

The debug log records errors and system process that occur in your organization. Debug logs contain information about:

Database changes

Automated workflow processes, such as:

- Workflow rules
- Assignment rules
- Escalation rules
- Approval processes
- Auto-response rules
- Validation rules
- Request-response XML
- Force.com code script errors
- Resources used by a Force.com code script





What are Debug Logs?

Developers can retain and manage the debug logs for specific users

Filters allow you to select which information is written to the logs

Debug Logs are limited to:

- 20 per user
- 2 MB per log
- 50 MB per organization

Apex Debug Log Detail	
User	vaishali kunchur
Status	Success
Request Type	Application
Duration (ms)	102
Log	<pre>26.0 APEX_CODE,DEBUG;APEX_PROFILING,INFO;CALLOUT,INFO;DB,INFO;SYSTEM,DEBUG;VALIDATION,INFO;VISUALFORCE,INFO;WORKFLOW,INFO 01:28:17.055 (55277000) EXECUTION_STARTED 01:28:17.055 (55324000) CODE_UNIT_STARTED [EXTERNAL] VisualForce View State 01:28:17.069 (69443000) CODE_UNIT_FINISHED VisualForce View State 01:28:17.069 (69460000) EXECUTION_FINISHED</pre>
<div>Download Delete</div>	



Log Categories

Database: database activity, including every data manipulation language (DML) statement or inline SOQL or SOSL query

Workflow: workflow rules, such as the rule name, the action taken, etc.

Validation: information about validation rules, such as the name of the rule, whether the rule evaluated true or false

Callout: request-response XML that the server is sending and receiving from an external Web service

- Useful when debugging issues related to using Force.com Web services API calls



Troubleshooting with Debug Log/Developer Console

Use the debug log to troubleshooting automated actions.

Symptom: A workflow field update doesn't seem to be updating

- Possible problem: field update is working, but a Force.com code trigger is overwriting the update

Symptom: A record submitted for approval is not routed to the user that you expected

- Possible problem: You have multiple approval processes on a single object. Your record meets the criteria for both, and the order of processes is incorrect

Summary



Useful Operators and Functions Monitoring Processes

- Debug logs

- Log Levels in the Developer Console
- Troubleshooting with Debug Log/Developer Console





Module Review

What actions are tracked in debug logs?

What is the maximum number of debug logs retained per user?

Where can you find default images to use in formula fields?

Which function only works in validation rules?