

Custom Permissions

```
if( System.FeatureManager.isEnabled(Permission(
    CustomPermission) == true ) { ...
    <apex:pageBlockRendered = "{!$Permission.ACustomPermission}" >
```

Custom Settings Methods

List: `List<Games__c> gamesListCustomSetting = Games__c.getAll().values();`
`gamesListCustomSetting[0].GameType__c; // getAll() returns a map`

`Games__c aSingleCustomSetting = Games__c.getValues('Pac Man'); // same as getInstance()`

Hierarchy: `Support__c supportHierarchyCustomSetting = Support__c.getInstance( profileID );`
`Support__c supportHierarchyCustomSetting = Support__c.getOrgDefaults();`
`Support__c supportHierarchyCustomSetting = Support__c.getValues( userID );`
`// getValues doesn't merge the non-overriden values from the hierarchy`
`same as {!$Setup.Support__c.Config_Field__c}`

Date/DateTime Formats and Examples

`myDate.format()` `format() and parse() use the current user locale`

`myDate = Date.parse( '12/27/2009' );`

`myDate = Date.valueOf( '2009--12-27 23:46:00' );` `uses standard datetime format`

`myDate.toStartMonth()`

`myDate.toStartWeek()`

`dt.format()`

Date/DateTime Formats and Examples (cont)

`dt.format( 'YYYY-MM-dd hh:mm:ss.SSS a' )` `2019-06-30 02:06:30.720 PM`

`dt.format( 'EEEE MMMMM dd, YYYY HH:mmZ' )` `Sunday June 30, 2019 14:06+0600`

`dt.getTime()` `number of milliseconds since Jan 1, 1970 00:00`

`dt = DateTime.parse( '10/14/2011 11:46 PM' );` `z is timezone (CST), w is week in year, W is week in month, D is day in year, u is day number in week (1=Monday)`

`dt = DateTime.parse( '10/14/2011 11:46 PM' );` `uses current user locale`

`dt = DateTime.valueOf( '2011-10-14 23:46:00' );` `uses standard datetime format`

Examples Using Named Credentials

```
HttpRequest req = new HttpRequest();
req.setEndpoint('callout:MyNamedCredential/so mePath');
req.setHeader('X-Username', '{!$Credential.al.UserName}');
req.setHeader('X-Password', '{!$Credential.al.Password}');
req.setBody(
    'Username:{! HTMLENCODE($Credential.al.UserName)}';
req.setHeader( 'Authorization'
    , 'OAuth {!$Credential.al.OAuthToken}' );
<!-- values: Basic, Bearer or null -->
{!$Credential.al.AuthorizationMethod}
<!-- values: Base-64 encoded username and password,
OAuth token or null -->
{!$Credential.al.AuthorizationHeaderValue}
{!$Credential.al.OAuthConsumerKey}
// usually Basic authentication goes like this
instead
```



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```
> of { $Credential.AuthorizationHeaderValue }
Blob headerValue = Blob.valueOf(
    username + ':' + password );
String authorizationHeader = 'BASIC '
    + EncodingUtil.base64Encode( headerValue );
req.setHeader( 'Authorization', authorizationHeader );
```

```

global class myWebServiceMockImpl implements
WebServiceMock {
global void doInvoke( Object stub
, Object
request
, Map<String
, String
ring, Object> response
, String
endpoint, String soapAction
, String
requestName
, String
responseNS
, String
responseName
, String
responseType ) {
// create /populate response element and add it
// to the response parameter
// this assumes responseElement type is
// a WSDL-generated class
response.put( 'response_x', responseElement );
Test.setMock( WebServiceMock.class
, new
myWebServiceMockImpl() );
// in the test class
global class myHttpClientMockImpl implements
HttpClientMock {
HttpClientMock {
global HTTPResponse respond( HTTPRequest req ) {
// create fake response, set HTTPResponse
// values, and return it

```

```
> Test.setMock( HttpCalloutMock.class
                , new myHttpCalloutMockImpl() );
```

```

Messaging.SingleEmailMessage msg =
    new Messaging.SingleEmailMessage(
        new Message() {
            subject = "Test message";
            to = new ArrayList<String>() {
                ...up to 100 contacts
            };
            from = new ArrayList<String>() {
                ...up to 100 senders
            };
            body = "Test body";
        });

List<Messaging.SingleEmailMessage> msgList =
    new ArrayList<Messaging.SingleEmailMessage>() {
        ...up to 100 messages
    };

Messaging.SendEmail(msgList);

// check results[0].success
// and results[0].errors[0].message

Messaging.SendEmail(msgList);

// up to 250 contacts
List<String> contacts = new ArrayList<String>() {
    ...up to 250 contacts
};

```

```
List<String> sqlList = new List<String> {
    'SELECT ID, ', fieldList, ' FROM
... ' };

String sql = String.join( sqlList, ' ' );
```

String Parsing with Regex

```
String template = '{0} was last updated {1}';
List<Object> parameters = new List<Object> {
    'Universal Containers',
    DateTime.newInstance(2018,
        11, 15) };
String formatted = String.format(template,
    parameters);
Pattern ptn = Pattern.compile(
    '...some regex with capturing
    groups...' );
Matcher mtr = ptn.matcher( '...input string...'
);
for( Integer i = 0; i < mtr.groupCount(); i++ )
{
    // NOTE: group 0 is the entire expression
    String extract = mtr.group( i );
}
```

SOQL Date Functions and Formats

```
CALENDAR_YEAR(), CALENDAR_MONTH()
DAY_IN_YEAR() Feb 1st = 32
DAY_IN_MONTH()
DAY_IN_WEEK() Sunday = 1
WEEK_IN_MONTH()
WEEK_IN_YEAR()
YESTERDAY, TODAY, TOMORROW
LAST_X, THIS_X, NEXT_X
    where X can be (where it makes sense):
        YEAR, N_YEARS:n
        FISCAL_YEAR, N_FISCAL_YEAR -
ARS:n
        FISCAL_QUARTER, N_FISCAL_
QUARTERS:n
        QUARTER, N_QUARTERS:n
        MONTH, N_MONTHS:n
        90_DAYS, N_DAYS:n
        WEEK, N_WEEKS:n
```

Schema Functions

```
Record Creation with nulls or with default values
and record ids
Map<String, Schema.SObject> sObjTypeMap =
    Schema.getGlobalDescribe();
Schema.SObject targetType =
    sObjTypeMap.get( typeName );
SObject sobj = targetType.newInstance();
SObject sobj = targetType.newInstance(
    recordTypeId, loadDefaultFlag );
Schema.SObject targetType = myObj__c.SObject -
    targetType;
myObj__c m = new myObj__c();
Schema.SObject targetType = m.getSObject -
    Type();
ID Prefix
Schema.DescribeSObjectResult dscObj = describe -
    Result[ 0 ];
String objPrefix = dscObj.getKeyPrefix();
```

Schema Functions - Field Details

```
FieldSets
Map<String, Schema.FieldSet> fsMap =
    dscObj.getFieldSetMap();
Fields
Schema.DescribeFieldResult dfr =
    dscObj.getFieldSchemaField();
Schema.SObjectField fieldToken =
    myObj__c.myField__c;
Schema.DescribeFieldResult dfr =
    fieldToken.getDescribe();
Map<String, Schema.SObjectField> fieldMap =
    Schema.SObjectField.mySObject -
    c.fields.getMap();
Field Details
dfr.getLabel(), getName(), getDefaultValue(),
```



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Schema Functions - Field Details (cont)

```
> getType(), getInlineHelpText(), ...
Picklist Values
List<Schema.PicklistEntry> pleList =
    dfr.getPicklistValues();
// pleList[ 0 ].getLabel(), getValue(), ...
```

Schema Functions - Record Types

```
Schema.DescribeSObjectResult[] descrResult =
Schema.describeSObjects( new String[] {
    'Account', 'Contact' }
);
Schema.DescribeSObjectResult dscObj = descrResult[ 0 ];
List<Schema.RecordTypeInFo> recTypeList =
    dscObj.getRecordTypeInfo();
Map<Id, Schema.RecordTypeInfo> rTypeByIdMap =
    dscObj.getRecordTypeInfo()
        .sById();
Map<String, Schema.RecordTypeInfo> rTypeMap =
    dscObj.getRecordTypeInfo()
        .sByDeveloperName();
// ...getRecordTypeId() getName() getDeveloperName()
```

Sanitizing Input

HTMLENCODE()	replaces HTML reserved characters, > becomes >
JSENCODE()	prepends escape on JS characters, ' becomes \'
JSINHTMLENCODE()	same as JSENCODE(HTMLENCODE())
URLENCODE()	replaces illegal characters in URLs, spaces becomes %20, ? becomes %21
myString.stripHtmlTags();	removes tags from string

FieldSet Examples

```
Map<String, Schema.FieldSet> fsMap =
    Schema.DescribeSObjectResult dscObj
        .fieldSetByName();
Map<String, Schema.FieldSet> fsMap =
    dscObj.getFieldSetMap();
Schema.FieldSet fs2 = Schema.SObjectFieldSet
    .count()
        .fieldSetByName();
public List<Schema.FieldSetMember> fldList
{ get; set; }
fldList = SObjectFieldSet
    .myFieldSetName()
        .getFieldSets();
// fieldSet methods: getName() getLabel()
<ap ex: pageBlockTable value= "{!product -
    LineItems}"
    var="qli">
<ap ex: repeat value= "{!$Object.Type.Q -
    uoteLineItem
        .FieldSetSalesForecast_P -
        age_Detail_Fields}"
    var="f">
<ap ex: column value= "{!qli[f]}"
    rendered= "{! FIND( f, editableView -
        dList ) <= 0 }" />
<ap ex: column
    rendered= "{! FIND( f, editableView -
        dList ) > 0 }" >
    <ap ex: facet name="header"> -
        {!f.label}
    </ap ex: facet>
    <ap ex: inputField value= "{!qli[f
    ]}" />
    </ap ex: column>
</ap ex: repeat>
...
```



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VisualForce TabPanel (alternative 1)

```
<apex:tabPanel id="theTabPanel" switchType="server" value="{!varSelectedTab}" >
```

```
  <apex:tab id="tabOne" label="One" name="name1" >
```

```
    ...content for tab one...
```

```
// in the controller...
```

```
public String varSelectedTab {
```

```
  get;
```

```
  set {
```

```
    // save data from tab, stop tab change if failed saving
```

```
    if( varSelectedTab == null || saveData() == true ) {
```

```
      varSelectedTab = value;
```

```
    }
```

```
  }
```

```
}
```

```
// Apex to change the active tab: varSelectedTab = "name1";
```

```
varSelectedTab = 'name1';
```

VisualForce TabPanel (alternative 2)

```
<apex:actionFunction name="changedTabJS" action="{!changedTab}" reRender="divContainingTabPanel,errorMsgPanel" >
```

```
  <apex:param name="tabName" assignTo="{!clickedTab}" value="" />
```

```
</apex:actionFunction>
```

```
<apex:tabPanel id="theTabPanel" switchType="client" selectedTab="name1" value="{!varSelectedTab}" >
```

```
  <apex:tab id="tabOne" label="One" name="name1" onTabEnter="changedTabJS( 'name1' );return false;" >
```

```
    ...content for tab one...
```

```
// in the controller...
```

```
public PageReference changedTab() {
```

```
  saveData();
```

```
  if( ApexPages.getMessages().size() <= 0 ) {
```

```
    // allow tab to change if no errors
```

```
    varSelectedTab = clickedTab;
```

```
  }
```

```
  return null;
```

```
}
```

```
// Apex to change the active tab:
```

```
varSelectedTab = "name1";
```

VisualForce apex:CommandButton with parameters

```
<apex:commandButton value=... action=...
```

```
reRender=...
```

```
escape="true" value="som eDu mmy Div OrP age Blo ck" >
```

```
<ap ex: param name=... value= " {...} "
```

```
assignTo=...
```

```
To= " {...} " />
```

VisualForce apex:ActionSupport with parameters

```
<apex:inputField value=...
```

```
<ap ex: act ion Support event= " onc han ge"
```

```
action="{!...}" reRender=... >
```

```
<ap ex: param name=... value= " {...} "
```

```
assignTo= " {...} " />
```

VisualForce Link/Format with Param Examples

```
<apex:outputLink value="http://google.com/search">Search Google
```

```
<apex:param name="q" value="{!contact.name}"/>
```

```
<!-- this will append the q parameter to the URL -->
```

```
<apex:outputText value="Formatted time now: {0, date, yyyy.MM.dd G 'at' HH:mm:ss z}"/>
```

```
<apex:param value="{! NOW() }" />
```

```
<apex:outputText value="{0, number, ###,###,##0.00}"/>
```

```
<apex:param value="{!Account.AnnualRevenue}"/>
```

```
<apex:outputText value="{0, number, currency}"/>
```

Custom HTML Attributes in VisualForce

```
<apex:outputPanel layout="block" html-data-role="panel" html-data-id="menu">
```

```
becomes <div data-id="menu" data-role="panel">
```

Blank Space

```
.
.
.
```

Global Variables - URL Examples

```
$Site.BaseUrl path prefix not ending with a /
{!$Action[ 'mySO b jec t__c' ].New}
{!URLF OR( $Ac tio n.m ySO bje ct__c.N ew)}
URLFOR ($A cti on.M ea sur eme nt__c.New, null
    , ['CF00 N3h 000 00H jxM j_l kid '=r ecordID
    , 'C F00 N3h 000 00H jxM j'= the Rec ord.Name
    , 'r etU RL' =$C urr ent Pag e.URL
    , 's ave URL '=' /ap ex/ Edi tMe asu rem ent -
s?i d=' +re cordID
    , 'c anc elU RL' =' / ape x/E dit Mea sur eme -
nts ?id =' + rec ordID])
```



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Global Variables - URL Examples (cont)

> some valid values: Clone, New, Edit, Delete, List, Merge, Tab, View, Attachment.Download

The above corresponds to

```
return new ApexPages.StandardController(
    theRecord ).view();
{!URLFOR($Asset.SLDS
    , 'assets/images/profile_avatar_96.png')}
reference to icons from SLDS
https://lightningdesignsystem.com/icons/
{!$Resource.TestImage}
{!URLFOR( $Resource.TestZip, 'images/Bluehills.jpg' )}
```

Global Variables - Field Examples

```
<apex:repeat var="f"
    val ue= " {!$ Obj ect Typ e.A cco unt.Fi -
    eld Set s.m yFi eld Set }">
<ap ex: out putText value= " {!f }" />
    same as Schema.Fi eldSet fs = Schema.SO -
    bje ctType
        .Ac cou nt.f ie ldS ets.ge tMa -
    p().ge t(' myF iel dSet')
    or
        Sch ema.Fi eldSet fs = Schema.SO bje ctT -
    ype.Ac count
        .fi eld Set s.m yFi eldSet;
{!$Obj ect Typ e.m yOb j__ c.k eyP refix}
    same as Schema.De scr ibe SOb jec tResult
objDescr =
    Acc oun t.s Obj ect Typ e.g -
    etD esc ribe();
    obj Des cr.g et Key Pre fix()
other options are: label, labelP lural, name,
    acc ess ible, create able,
custom, deletable,
    mer geable, queryable,
search able, undelete able,
    upd ate able, ...
{!$Obj ect Typ e.m yOb j__ c.F iel ds.a Fi eld__c}
{!$Obj ect Type[ 'myObj__c' ].fields[ 'aFiel d__c'
    ].Label}
```

Global Variables - Field Examples (cont)

> {!\$ObjectType.myObj__c.Fields.aField__c.Label}
 same as Schema.DescribeFieldResult dfr =
 Schema.SObjectType.myObj__c.fields.aField__c;
 dfr.getLabel()
 other options are: inlineHelpText, length,
 picklistValues, precision, scale, type, accessible,
 calculated, ...

Global Variables - Miscellaneous Examples

```
$Api.Session_ID
    same as UserIn fo.g et Ses sio nId()
    (this ID changes in VF and Lightning)
    and the formula function GETSES SIO -
    NID()
docume nt.g et Ele men tById(
    " {!$ Com pon ent.th eFo rm.t he -
    Blo ck.t he Section
        .th eSe cti onI tem.th eFi -
    eld }" )
$Curre ntP age.pa ram ete rs.p ar amName
    same as ApexPa ges.cu rre ntP age ().g et Par ame -
    ters()
        .get( 'param Name' )
$Setup.Ap p_P ref s__ c.S how _He lp_ Con tent__c
    gets value from hierarchy custom settings
{!$Use r.U ITheme == 'Theme2'}
    Theme3 = Classic,
    Theme4d = lightning,
    Theme4t = mobile app,
    Theme4u = lightning console
```



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