Custom Permissions

```
if( System.Fe atu reM ana gem ent.ch eck Per mis -
sion(
                                                'A
C ust  P  erm ' ) == true ) { ...
<ap  ex : p ag  eBlock render  ed = "  {!$  Pe r -
m is  sio  n.A Cu st  P e rm  }" >
```

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.get-Values('Pac Man'); // same as getInstance()
Hierarchy:	Support__c supportHierarchyCustomSetting = Suppor-t__c.getInstance(profileID);
	Support__c supportHierarchyCustomSetting = Suppor-t__c.getOrgDefaults();
	Support__c supportHierarchyCustomSetting = Suppor-t__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('EEEEE MMMMM dd, YYYY HH:mmZ')	Sunday June 30, 2019 14:06+0600
	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.getTime()	number of milisseconds since Jan 1, 1970 00:00
dt = DateTime.p-arse('10/14/2011 11:46 PM');	uses current user locale
dt = Datetime.val-ueOf('2011-10-14 23:46:00');	uses standard datetime format

Examples Using Named Credentials

```
HttpRequest req = new HttpRequest();
req.se tEn dpo int ('c all out :My Nam edC red -
ent ial /so meP ath');
req.se tHe ade r(' X-U ser name', '{!$Cr ede nti -
al.U se rNa me}');
req.se tHe ade r(' X-P ass word', '{!$Cr ede nti -
al.P as swo rd}');
req.se tBody(
          'Us erN ame:{! HTMLEN COD E($ Cre den -
tia l.U ser name)}' );
req.se tHe ader( 'Autho riz ation'
           , 'OAuth {!$Cre den tia l.O Aut hTo -
ken}' );
<!-- values: Basic, Bearer or null -->
{!$Cre den tia l.A uth ori zat ion Method}
<!-- values: Base-64 encoded username and
password,
OAuth token or null -->
{!$Cre den tia l.A uth ori zat ion Hea der Value}
{!$Cre den tia l.O Aut hCo nsu merKey}
// usually Basic authen tic ation goes like this
instead
```


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Examples Using Named Credentials (cont)

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

Test Web Service Callouts

```
global class myWebServiceMockImpl
                                    imp lements
WebSer vic eMock {
global void doInvoke( Object stub
                                   , Object
request
                                   , Map<St -
ring, Object> response
                                   , String
endpoint, String soapAction
                                   , String
reques tName
                                   , String
responseNS
                                   , String
respon seName
                                   , String
respon seType ) {
// create /po pulate response element and add it
               // to the response parameter
// this assumes respon seE lement type is
               // a WSDL-g ene rated class
respon se.put( 'respo nse_x', respon seE lement );
Test.s etMock( WebSer vic eMo ck.c lass
                                   , new
myWebS erv ice Moc kImpl() );
               // in the test class
global class myHttp Cal lou tMo ckImpl
                                    imp lements
HttpCa llo utMock {
global HTTPRe sponse respond( HTTPRe quest req ) {
// create fake response, set HTTPRe sponse
               // values, and return it
```

Test Web Service Callouts (cont)

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

Email Messaging

```
Messaging.SingleEmailMessage msg =
                                new Messag ing.Si -
ngl eEm ail Mes sage();
msg.to Add resses = new String[] {
                                ...up to 100 contac -
t/l ead /user ids... };
msg.se tTa rge tOb jectId( ...single cont/l -
ead /user id... );
msg.su bject = 'Test msg';
msg.pl ain Tex tBody = 'Test body.';
Messag ing.Si ngl eEm ail Mes sage[] msgList =
                  new List<M ess agi ng.S in gle -
Ema ilM ess age> { msg };
Messag ing.Se ndE mai lRe sult[] results =
                   Mes sag ing.se ndE mail( msgList
);
// check results[ 0 ].success
// and results[ 0 ].errors[ 0 ].message)
Messag ing.Ma ssE mai lMe ssage msg =
                  new Messag ing.Ma ssE mai lMe -
ssa ge();
msg.se tTa rge tOb jec tIds(
             ...up to 250 cont/l ead /user ids in
List<I D>... );
```

String Concatenation

```
List<String> soqlList = new List<String> {
                'SELECT ID, ', fieldList, ' FROM
...' };
String soql = String.join( soqlList, '' );
```


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String Parsing with Regex

```
String template = '{0} was last updated {1}';
List<O bje ct> parameters = new List<O bje ct> {
'Universal Contai ners'
                , DateTi me.n ew Ins tance( 2018,
11, 15 ) };
String formatted = String.fo rmat( template,
paramtrs );
Pattern ptn = Patter n.c ompile(
                    '...some regex with capturing
groups...' );
Matcher mtr = ptn.ma tcher( '...input string...'
);
for( Integer i = 0; i < mtr.gr oup Cou nt(); 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 _MO NTH()
DAY_IN _WEEK() Sunday = 1
WEEK_I N_M ONTH()
WEEK_I N_Y EAR()
YESTERDAY, TODAY, TOMORROW
LAST_X, THIS_X, NEXT_X
        where X can be (where it makes sense):
                YEAR, N_YEARS:n
                FIS CAL _YEAR, N_FISC AL_  YE -
ARS:n
                FIS CAL _QU ARTER, N_FISC AL_
QU ART ERS:n
                QUA RTER, N_QUAR TERS: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<St ring, Schema.SO bje ctT ype> sObjTy peMap =
        Sch ema.ge tGl oba lDe scr ibe();
Schema.SO bje ctType targetType =
        sOb jTy peM ap.get( typeName );
SObject sobj = target Typ e.n ewS Obj ect();
SObject sobj = target Typ e.n ewS Object(
        aRe cor dTy peId, loadDe fau ltsFlag );
Schema.SO bje ctType targetType = myObj_ _c.S Ob -
jec tType;
myObj__c m = new myObj_ _c();
Schema.SO bje ctType targetType = m.getS Obj ect -
Type();
ID Prefix
Schema.De scr ibe SOb jec tResult dscObj = descrR -
esult[ 0 ];
String objPrefix = dscObj.ge tKe yPr efix();
```

Schema Functions - Field Details

```
FieldSets
Map<St ring, Schema.Fi eld Set> fsMap =
                dsc Obj.fi eld Set s.g etM ap();
Fields
Schema.De scr ibe Fie ldR esult dfr =
                dsc Obj.fi eld s.m yFi eld__c;
Schema.SO bje ctField fieldToken =
                myS Obj __c.my Fie ld__c;
Schema.De scr ibe Fie ldR esult dfr =
                fie ldT oke n.g etD esc ribe();
Map<St ring, Schema.SO bje ctF iel d> fieldMap =
                Sch ema.SO bje ctT ype.my SOb j__ -
c.f iel ds.g et Map();
Field Details
dfr.ge tLa bel(), getName(), getDef aul tVa lue(),
```


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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.de scr ibe SOb jects( new String[] {
                        'Ac cou nt' ,'C ontact' }
);
Schema.De scr ibe SOb jec tResult dscObj = descrR -
esult[ 0 ];
List<S che ma.R ec ord Typ eIn fo> recTyp eList =
                dsc Obj.ge tRe cor dTy peI nfos();
Map<Id, Schema.Re cor dTy peI nfo> rTypeB yIdMap =
                dsc Obj.ge tRe cor dTy peI nfo -
sBy Id();
Map<St ring, Schema.Re cor dTy peI nfo> rTypeMap =
                dsc Obj.ge tRe cor dTy peI nfo -
sBy Dev elo per Name();
// ...get Rec ord Typ eId() getName() getDev elo -
per Name()
```

Sanitizing Input

HTMLEN-CODE()	replaces HTML reserved characters, > becomes >
JSENCODE()	prepends escape on JS characters, ' becomes \'
JSINHTMLE-NCODE()	same as JSENCODE(HTMLENCODE(()))
URLENCODE()	replaces illegal characters in URLs, spaces becomes %20, ? becomes %21
myString.stripH-tmlTags();	removes tags from string

FieldSet Examples

```
Map<String, Schema.FieldSet> fsMap =
            Sch ema.SO bje ctT ype.Ac cou nt.f ie -
ldS ets.ge tMap();
Schema.De scr ibe SOb jec tResult d =
            Acc oun t.s Obj ect Typ e.g etD esc -
ribe();
Map<St ring, Schema.Fi eld Set> fsMap =
            d.f iel dSe ts.g et Map();
Schema.Fi eldSet fs2 = Schema.SO bje ctT ype.Ac -
count
           .fi eld Set s.m yFi eld Set Name;
public List<S che ma.F ie ldS etM emb er> fldList
{ get; set; }
fldList = SObjec tTy pe.m yS Obj ect.Fi eldSets
           .my Fie ldS etN ame.ge tFi elds();
// fieldSet methods: getName() getLabel()
<ap ex: pag eBl ock Table value= " {!p rod uct -
Lin eIt ems }"
            var ="ql i" >
<ap ex: repeat value= " {!$ Obj ect Typ e.Q uot -
eLi neItem
           .Fi eld Set s.S ale s_F ore cas t_P -
age _De tai l_F iel ds} "
            var ="f" >
      <ap ex: column value= " {!qli[ f ]}"
        ren der ed= "{! FIND( f, editab leF iel -
dList ) <= 0 }" />
      <ap ex: column
        ren der ed= "{! FIND( f, editab leF iel -
dList ) > 0 }" >
             <ap ex: facet name="h ead er"> -
{!f.label}
             </a pex :fa cet>
             <ap ex: inp utField value= " {!qli[ f
]}" />
      </a pex :co lum n>
</a pex :re pea t>
...
```


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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=...
                                        reR end -
er= " som eDu mmy Div OrP age Blo ck" >
<ap ex: param name=... value= " {!...} "
                                        ass ign -
To= " {!...} " />
```

VisualForce apex:ActionSupport with parameters

```
<apex:inputField value=...
<ap ex: act ion Support event= " onc han ge"
                                                -
act ion ="{!...} " reRend er=... >
<ap ex: param name=... value= " {!...} "
                                                -
ass ign To= " {!...} " />
```

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[ 'mySOb 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;
{!$Obj ect Typ e.m yOb j__ c.k eyP refix}
         same as Schema.De scr ibe SOb jec tResult
objDescr =
                    Acc oun t.s Obj ect Typ e.g -
etD esc ribe();
          obj Des cr.g et Key Pre fix()
other options are: label, labelP lural, name,
                    acc ess ible, create able,
custom, deletable,
                    mer geable, queryable,
search able, undele table,
                    upd ate able, ...
{!$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, acessible,
calculated, ...

Global Variables - Miscelaneous 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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