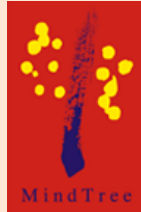


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SHAREPOINT 2010: DEVELOPING WITH DATA TECHNOLOGIES



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ABOUT ME

- Regional Manager for Synergy Corporate Technologies
 - Based in Singapore
- Consultant/Trainer/Author
- SharePoint MVP
- SharePointPROs.SG User Group

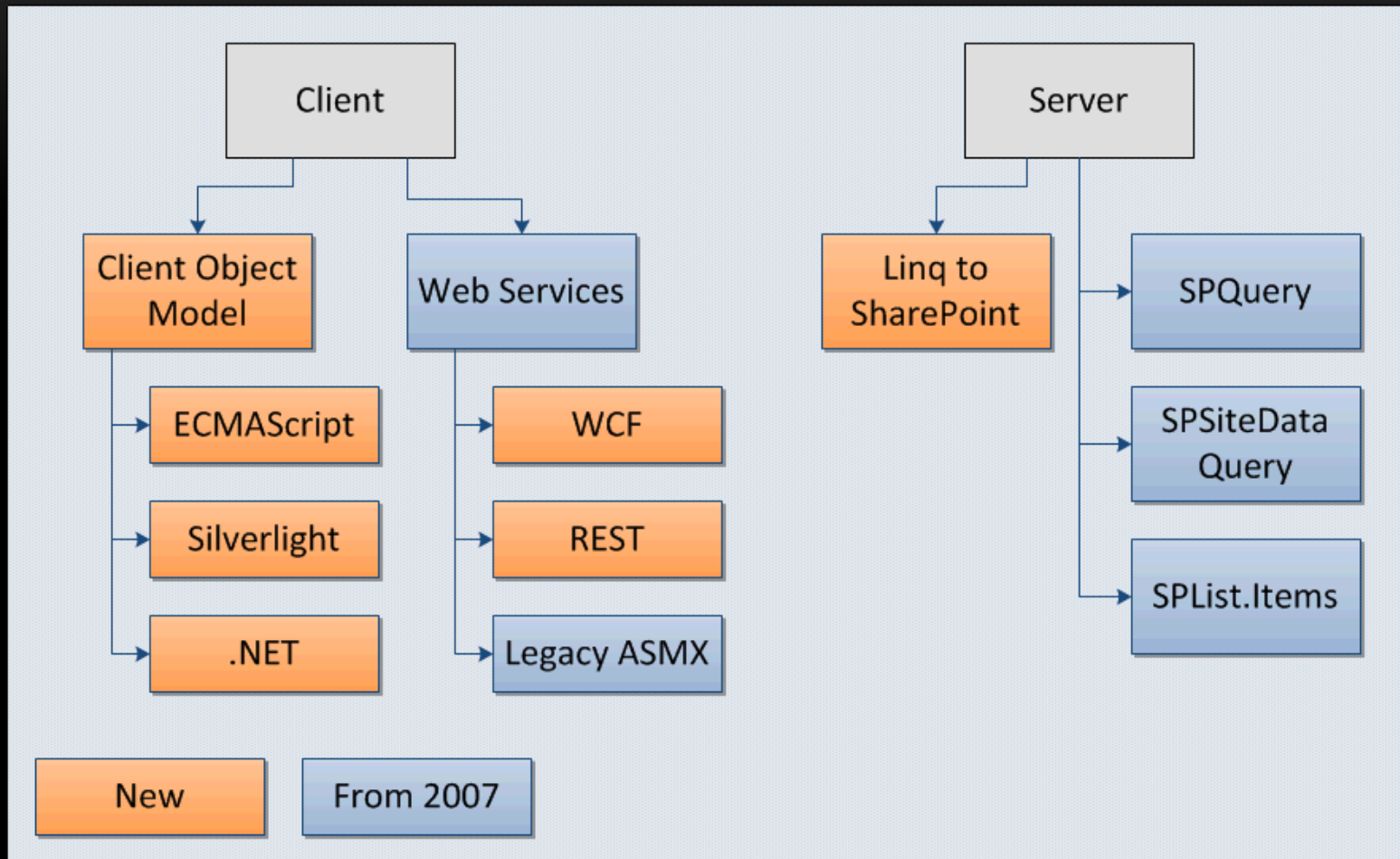


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SESSION OVERVIEW

- LINQ to SharePoint
- WCF Data Services (REST)
- Client Object Model
- Large List Throttling

OVERVIEW OF DATA TECHNOLOGIES



LINQ TO SHAREPOINT

- SharePoint now includes a LINQ provider
- Translates LINQ queries to CAML queries
- All access to data is through strongly typed objects
- Supports full CRUD operations
- Use SPMetal to generate proxy classes

WHY USE LINQ TO SHAREPOINT?

SPQuery with
CAML

```
SPQuery query = new SPQuery();
query.Query = @"
<Where>
  <And>
    <BeginsWith>
      <FieldRef Name=""LinkTitle"" />
      <Value Type=""Text"">A</Value>
    </BeginsWith>
    <Eq>
      <FieldRef Name=""WorkCountry"" />
      <Value Type=""Text"">Singapore</Value>
    </Eq>
  </And>
</Where>";
```

WHY USE LINQ TO SHAREPOINT?

LINQ
Syntax

```
var contacts = from c in ctx.Contacts
                where c.LastName.StartsWith ("A") &&
                    c.CountryRegion == "Singapore"
                select c;
```

USING SPMETAL

- Command line utility located in 14\BIN
- Used to generate proxy class
- Generates entity classes for a single web
- Use CKSDev (CodePlex) to integrate with Visual Studio
- Basic Syntax:

```
SPMetal /web:http://sp2010/teamsite /code:teamsite.cs
```

LINQ to SharePoint

DEMO



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WCF DATA SERVICES (REST)

- REST: Representational State Transfer
- List data is made available at http://sp2010/site/_vti_bin/listdata.svc
- Data access is strongly typed
- Data access is limited to items in lists
- Data can be accessed from virtually any client application

REST EXAMPLES

- View available lists
 - http://sp2010/_vti_bin/listdata.svc
- View data in the Announcements list
 - http://sp2010/_vti_bin/listdata.svc/Announcements
- View the announcement with ID 1
 - [http://sp2010/_vti_bin/listdata.svc/Announcements\(1\)](http://sp2010/_vti_bin/listdata.svc/Announcements(1))
- View the Announcements items ordered by Modified date
 - [http://sp2010/_vti_bin/listdata.svc/Announcements?\\$orderby=Modified](http://sp2010/_vti_bin/listdata.svc/Announcements?$orderby=Modified)

QUERY DATA USING REST INTERFACE

- Create a new Service Reference using the appropriate Url to listdata.svc
- Instantiate a reference to the DataServiceContext object
- Query items using LINQ or extension method syntax
- Enumerate the results

WCF Data Services (REST)

DEMO



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CLIENT OBJECT MODEL

- Working with SharePoint from client applications
 - ECMAScript (JavaScript)
 - Silverlight
 - .NET Managed
- Much easier than calling web services
- Provides a subset of the functionality available in the server object model
- Designed to work with data within a site collection

ADDING PROJECT REFERENCES

- ECMAScript (link from code)
 - `/_layouts/SP.js`
- Silverlight references
 - `Microsoft.SharePoint.Client.Silverlight.dll`
 - `Microsoft.SharePoint.Client.Silverlight.Runtime.dll`
- .NET Managed references
 - `Microsoft.SharePoint.Client.dll`
 - `Microsoft.SharePoint.Client.Runtime.dll`



SAMPLE FROM .NET MANAGED CODE

- `ClientContext context = new ClientContext("http://sp2010/teamsite");`
- `Web web = context.Web;`
- `context.Load(web);`
- `context.ExecuteQuery();`
- `MessageBox.Show (web.Title);`

SAMPLE FROM JAVASCRIPT

- `var clientContext = new SP.ClientContext.get_current();`
- `this.oWeb = clientContext.get_web();`
- `clientContext.load(this.oWeb);`
- `clientContext.executeQueryAsync(Function.createDelegate(this, this.getSuccess), Function.createDelegate(this, this.getError));`

Client Object Model

DEMO



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DATA ACCESS SUMMARY

	SPQuery	SPLinq	REST	Client OM
Can run on Server	Yes	Yes	Yes (not advised)	Yes (not advised)
Can run on Client	No	No	Yes	Yes
Strongly typed data access	No	Yes	Yes	No
Forces Change Tracking and Conflict Resolution	No	Yes	No	No
Query Syntax	CAML	LINQ	LINQ	CAML

LARGE LIST THROTTLING

- Prevents large queries from running
- Web Application level setting
- First threshold is 5,000 items
- Second threshold is 20,000 and applies if
 - User is an administrator or auditor, and
 - Object model override is enabled, and
 - Code is configured to use override setting

QUESTIONS?



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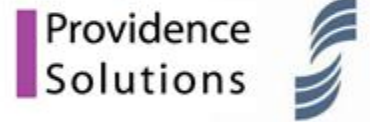
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