IBM Brasil

Ext JS Overview

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About me

- 5+ years of web development experience
- Java/ExtJS – Team Leader - IT Specialist at IBM Brazil – International project – US client
- Java/JEE/XML/ExtJS Technical Leader at IBM
- IBM Academic Initiative Ambassador
- JUG Leader at CampinasJUG/Java Campinas (Brazilian JUG – Java User Group)
- JUG Coordinator at ESJUG (Brazilian JUG)

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Ext JS?

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YUI Lacked:

- Easy to use API
- Real World Widgets

Ext JS

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Why Ext JS?

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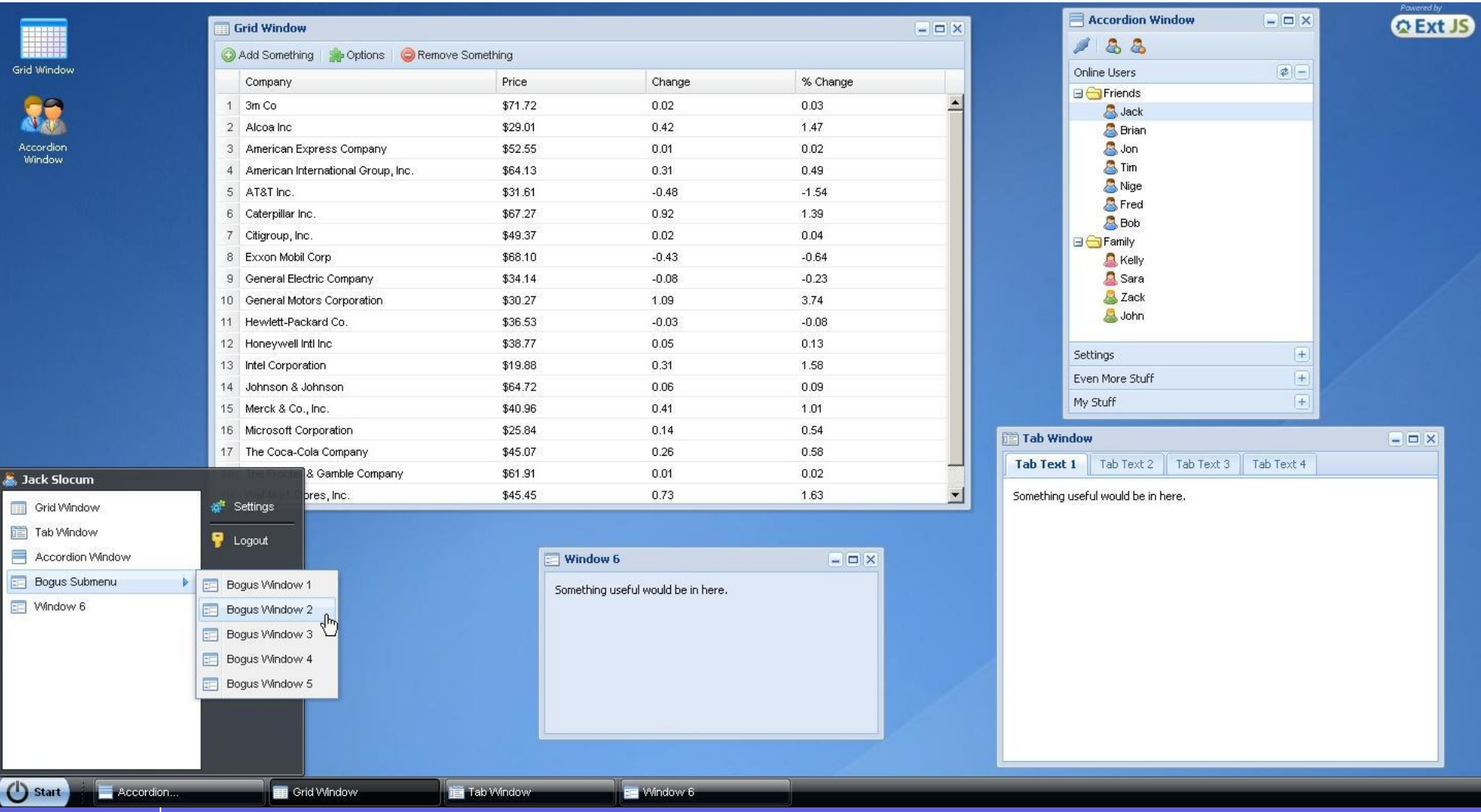
Windows looks like OS windows – support dragging/resizing/closing



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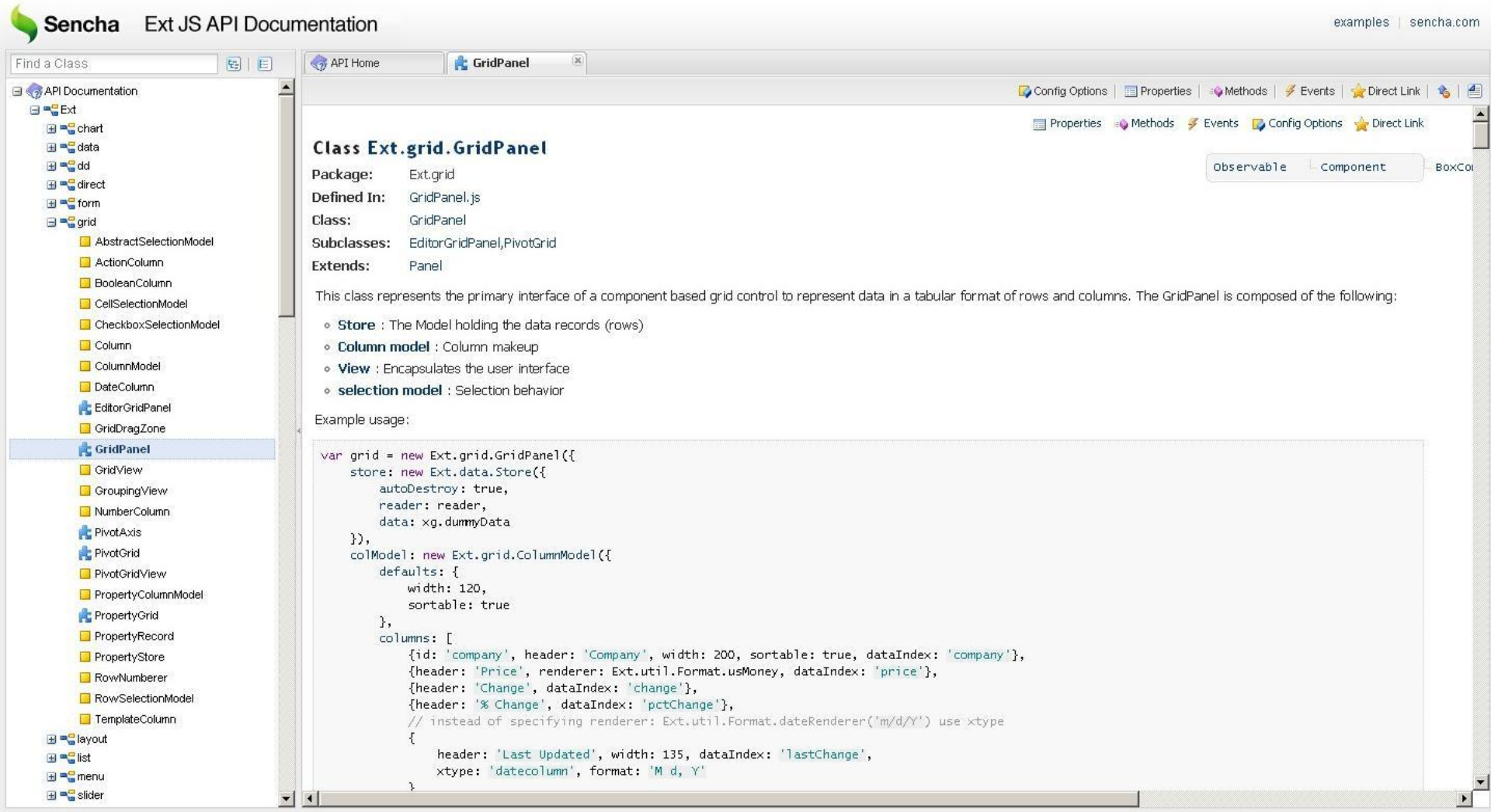
Good Documentation



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Community Support

Sencha Forum

Ext JS Premium Forums		Last Post
Ext: Premium Help (24 Viewing) Expedited help for Ext JS Premium Subscription members	Threads: 9,560 Posts: 47,816	cross-domain not working in... by salgaf Today 8:24 AM
Ext: Feature Requests (3 Viewing) Request new features or modifications to existing ones	Threads: 1,461 Posts: 6,874	Tab Strip - hidden: true by Hacker-CB Today 2:21 AM

Sencha Touch Forums		Last Post
Sencha Touch: Help & Discussion (19 Viewing) Community help and discussion with using Sencha Touch	Threads: 2,258 Posts: 9,520	How do you scroll to the top... by lteti77 Today 8:29 AM
Sencha Touch: Bugs (2 Viewing) Report bugs in Sencha Touch	Threads: 494 Posts: 2,081	[RC1] Reload a list after... by dbottillo Today 7:51 AM
Sencha Touch: Feature Requests Request new features or modifications to existing ones	Threads: 163 Posts: 545	Sencha Touch in Skyfire by Ralph Haygood Yesterday 1:41 PM
Sencha Touch: Examples and Showcases Post links to show what you have done with Sencha Touch	Threads: 65 Posts: 330	Ext.ux.touch.SwipeTabs by sandor Today 7:50 AM
Sencha Touch: App Contest (1 Viewing) Compete for huge cash and prizes by entering your best Sencha Touch app by Oct 27.	Threads: 16 Posts: 68	Top 10 list available by blessan Yesterday 11:26 PM

Ext General Forums		Last Post
Ext: Open Discussion (15 Viewing) Discussion about current development, screenshots, getting involved, etc.	Threads: 3,817 Posts: 29,835	Ext to Sencha Namespace? by scarsick Today 7:48 AM
Ext: Examples and Extras (18 Viewing) Post links to show what you have done with Ext	Threads: 1,257 Posts: 14,369	tobiuGrid - High Performance... by tobiu Today 8:13 AM
Gxt: Open Discussion Discussion about current development, screenshots, getting involved, etc.	Threads: 838 Posts: 3,799	HtmlEditor by bmkrishna.adnala Yesterday 12:33 AM

Ext JS Community Forums (3.0)		Last Post
Ext: Help (43 Viewing)	Threads:	Cascading ComboBox filter... by

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open source™

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Cross Browser

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Adapters

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Widgets

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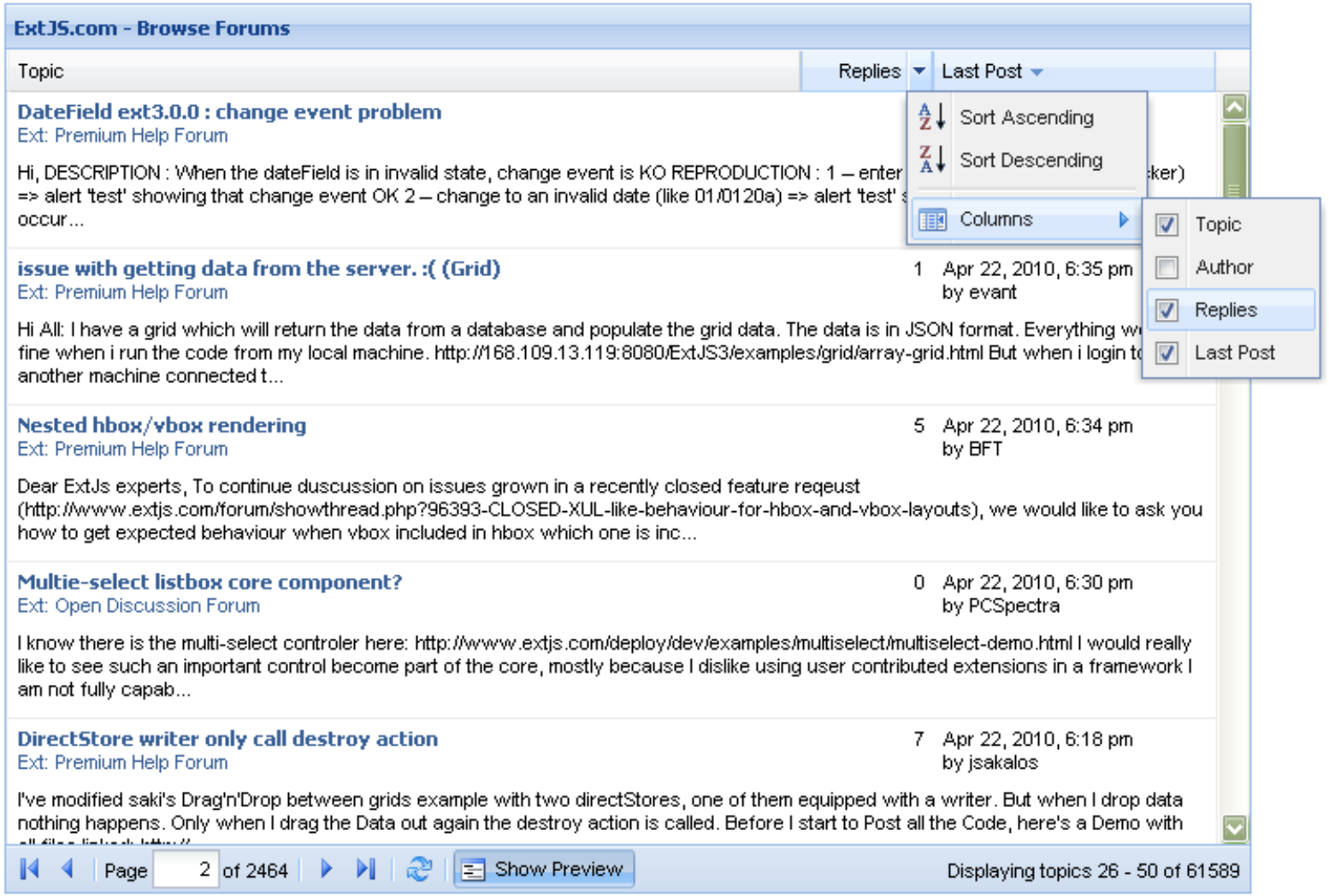
Data Grid

support paging/filtration/sorting/grouping/editor/RESTful

Easy to load/save data to server in different formats – xml/json



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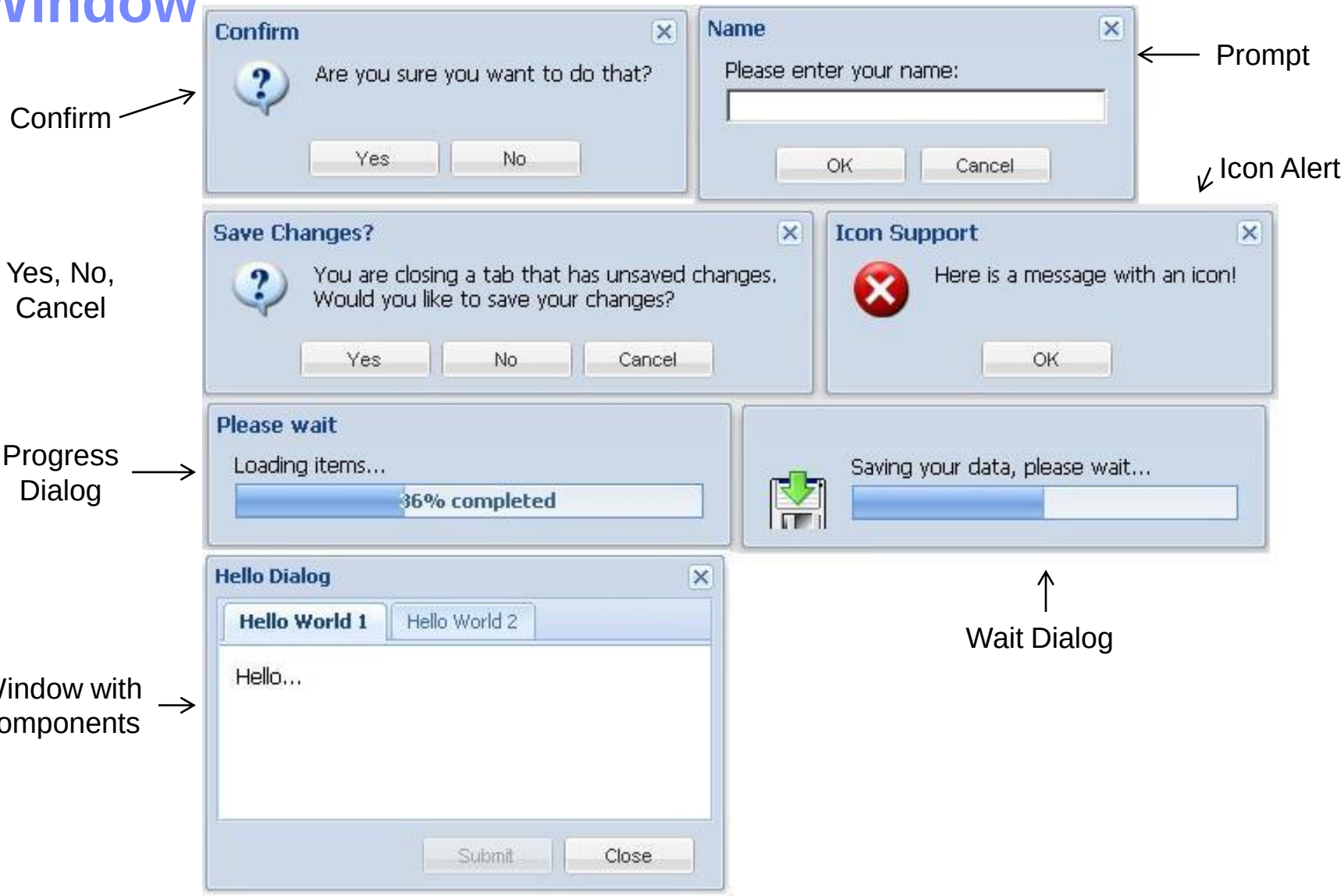
Window



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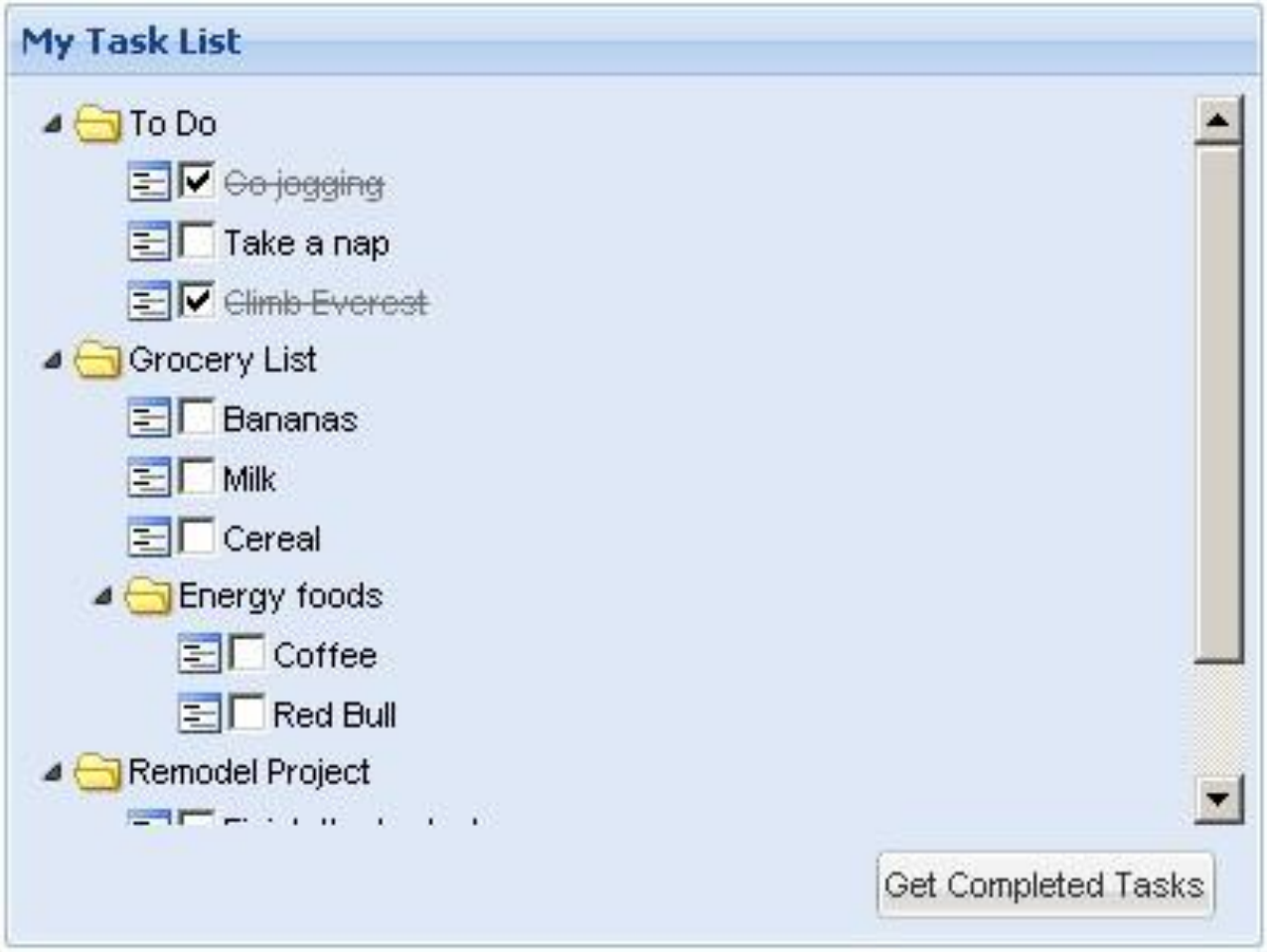
Tree Panel

support drag and drop/multiple trees/reordering/checkbox

Easy to load/save data to server in different formats – xml/json



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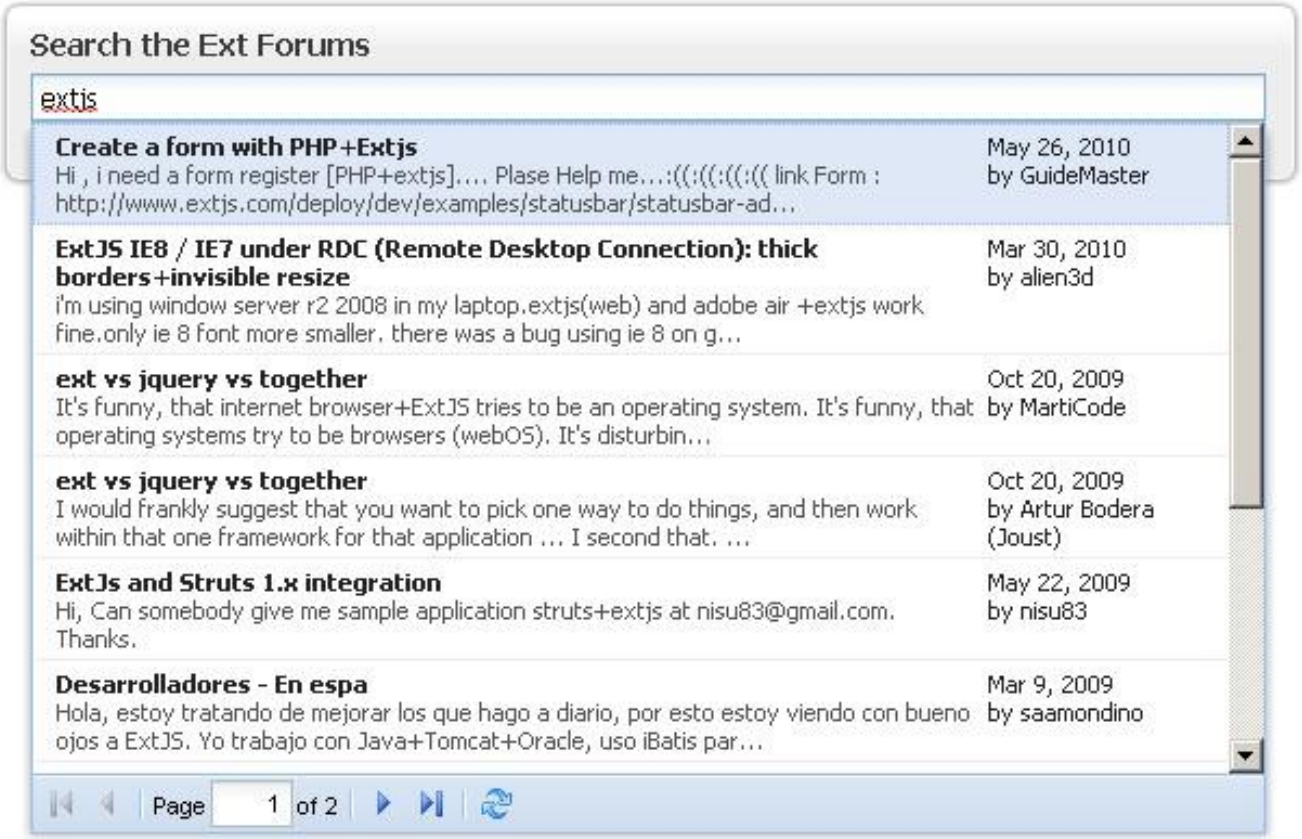
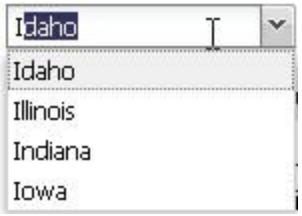
Combo Boxes

support autocomplete/typing/ajax/search/adavanced template

Easy to load/save data to server in different formats – xml/json





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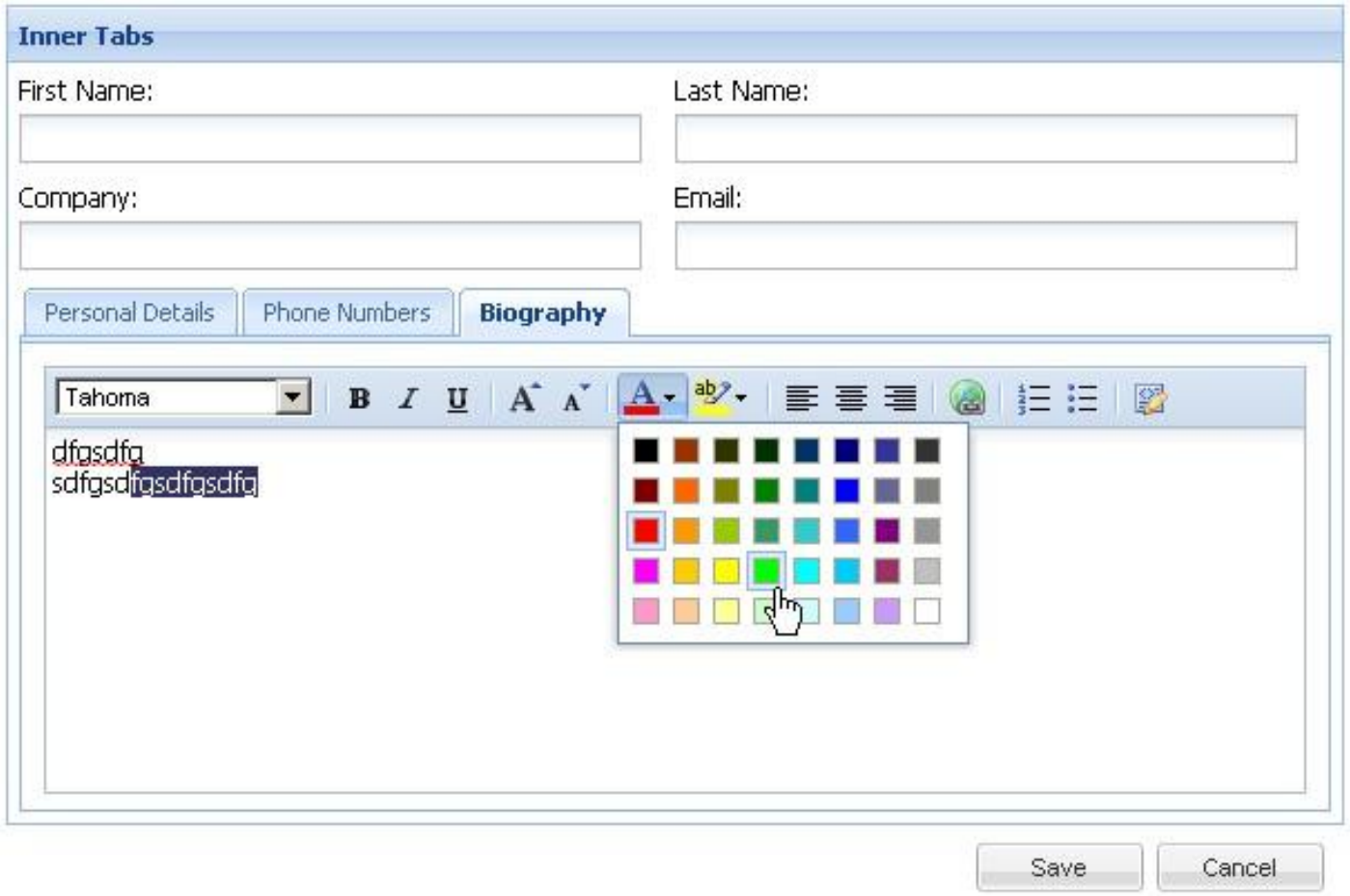
Forms

support ajax/file upload, calendar, etc

Easy to load/save data to server in different formats – xml/json



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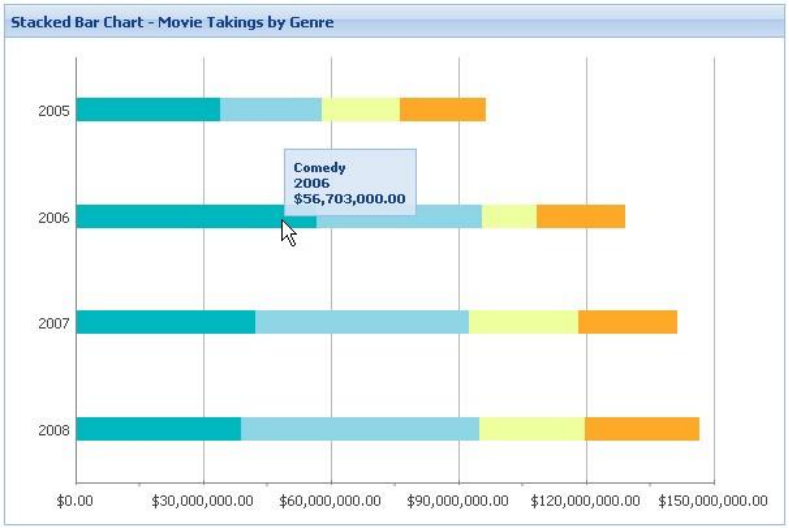
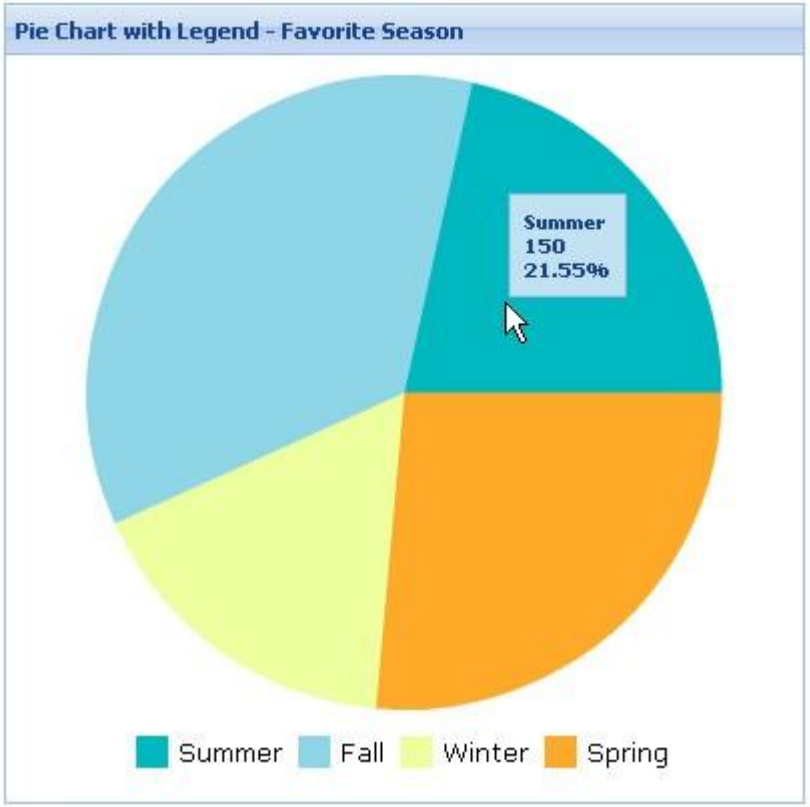
Charts

Dynamic – supports reloading on run time

Requires Flash





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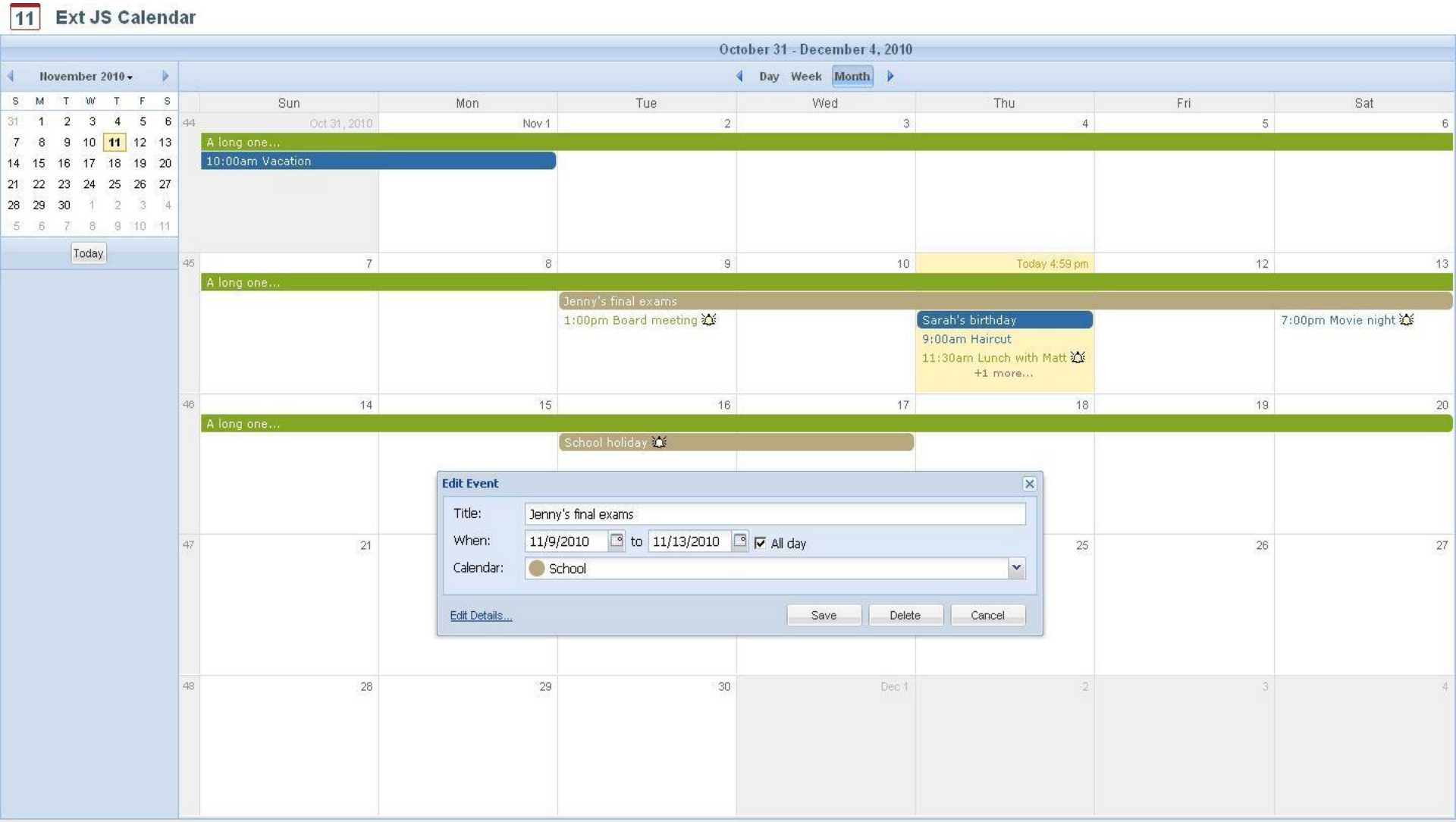
Calendar

Google Calendar – same functions

Ext JS 3.3+



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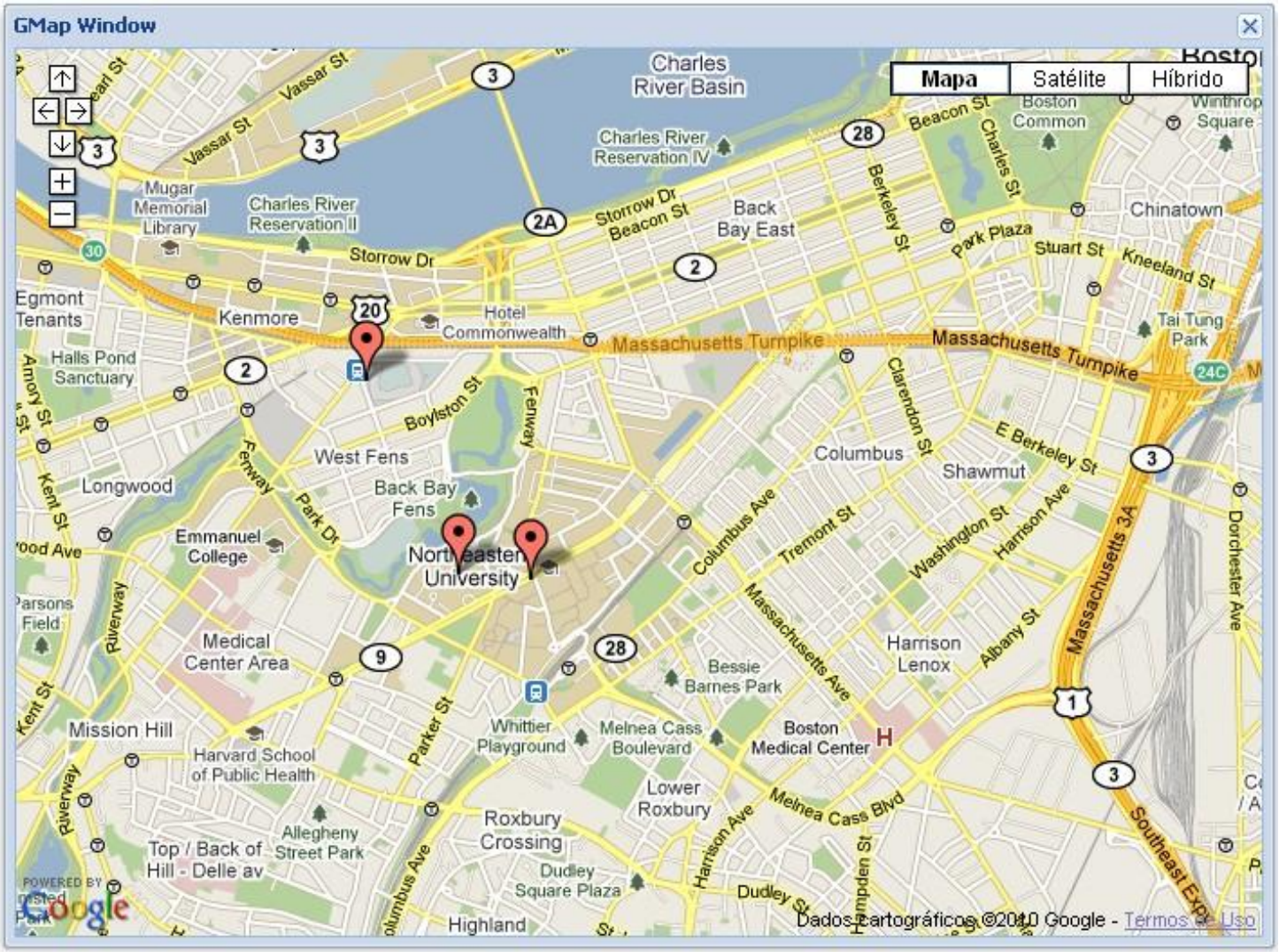
Google Maps, Gears and Adobe Air Integration



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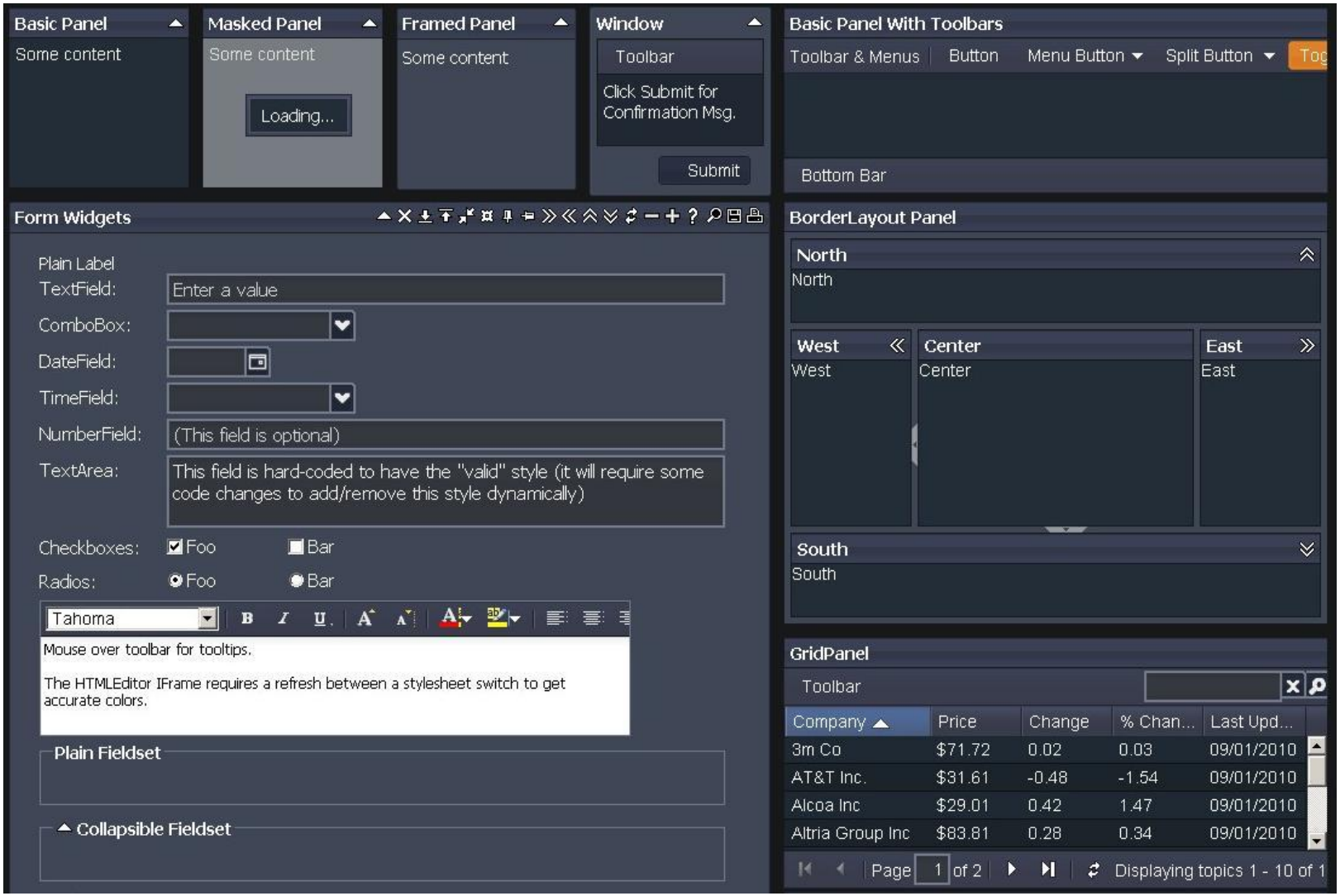
Themes

Easy to customize



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What Else Ext JS Can Do?

- Ajax support
- Dom traversing
- Dom manipulation
- Event Handling
- Selectors
- OOP emulation
- Animation

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Getting Started

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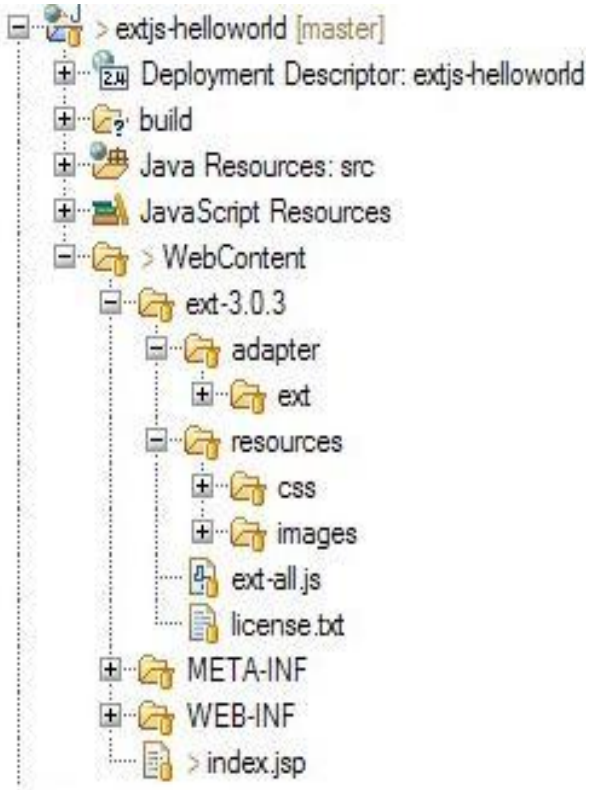
Hello World using Eclipse IDE – Java project

- **Donwload:** http://sencha.com/products/extjs/download.php
- **Create a Dynamic Web Project.**
- **Under WebContent folder, create a folder where all ExtJS files will be located (I named it ext-3.0.3). Paste adapter and resources folders under your extjs folder. Also, paste this file: *ext-all.js* under *ext-3.0.3*:**



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```
<html>
<head>

    <!-- Ext relies on its default css so include it here. -->
    <!-- This must come BEFORE javascript includes! -->
    <link rel="stylesheet" type="text/css" href="/extjs-helloworld/ext-3.0.3/resources/css/ext-
all.css" />

    <!-- Include here your own css files if you have them. -->

    <!-- First of javascript includes must be an adapter... -->
    <script src="/extjs-helloworld/ext-3.0.3/adapter/ext/ext-base.js"></script>

    <!-- ...then you need the Ext itself, either debug or production version. -->
    <script src="/extjs-helloworld/ext-3.0.3/ext-all.js"></script>

    <!-- Include here your extended classes if you have some. -->

    <!-- Include here you application javascript file if you have it. -->

    <title>Getting Started with Extjs</title>

    <!-- You can have onReady function here or in your application file. -->
    <!-- If you have it in your application file delete the whole -->
    <!-- following script tag as we must have only one onReady. -->

    <script type="text/javascript">

    // Path to the blank image must point to a valid location on your server
    Ext.BLANK_IMAGE_URL = '/extjs-helloworld/ext-3.0.3/resources/images/default/s.gif';

    </script>

</head>
<body>

</body>
</html>
```

Hello World

```
<script type="text/javascript">

// Path to the blank image must point to a valid location on your
server
Ext.BLANK_IMAGE_URL = '/extjs-helloworld/ext-
3.0.3/resources/images/default/s.gif';

Ext.onReady(function(){
    Ext.Msg.alert('Test Extjs', 'Hello World');
});

</script>
```


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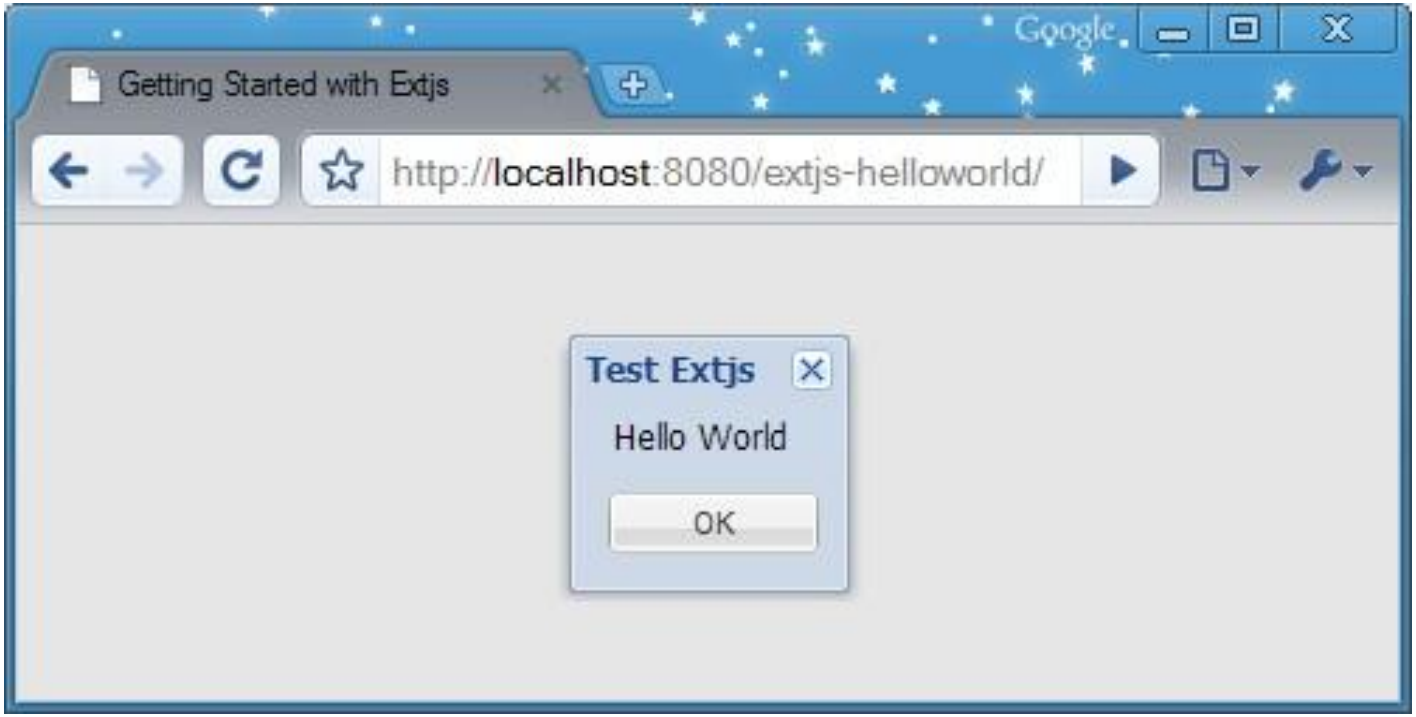

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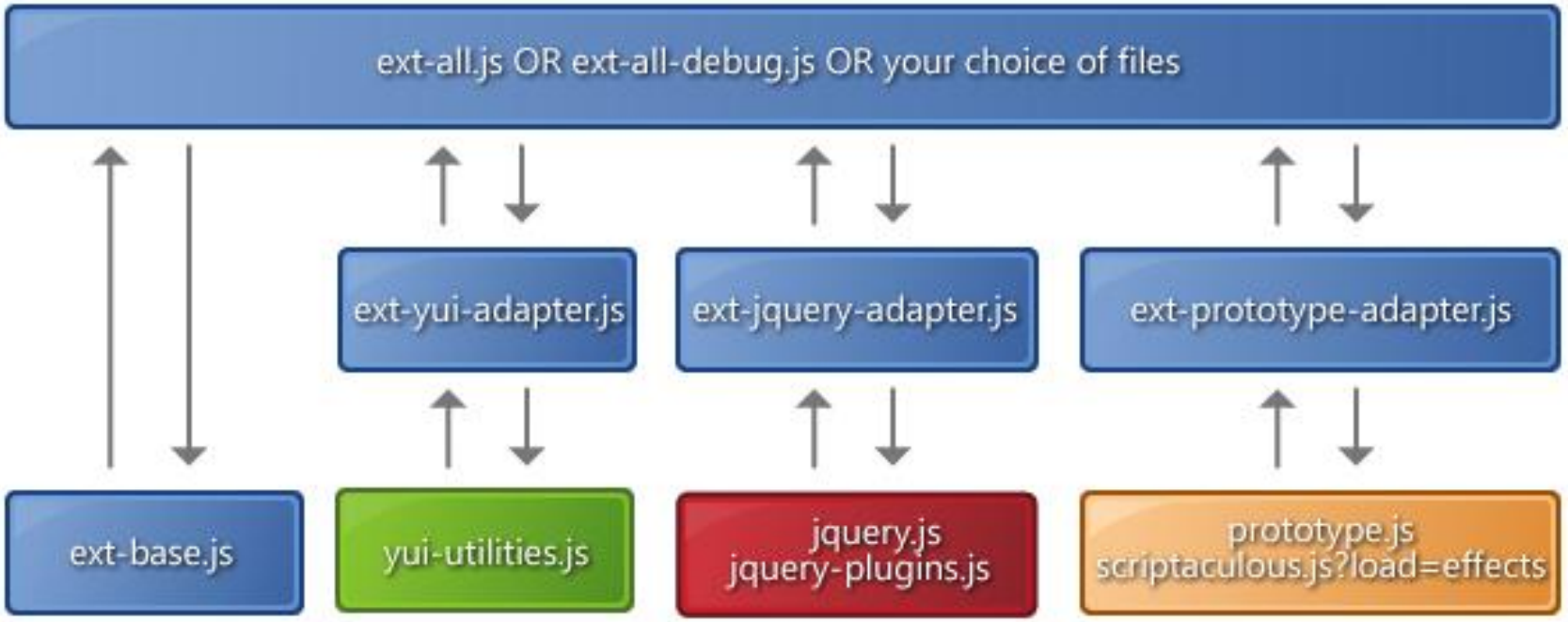
Ext JS and Base Library Relations



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Main Ext JS Classes

- **Component**
- **Panel**
- **Container**
- **Store**

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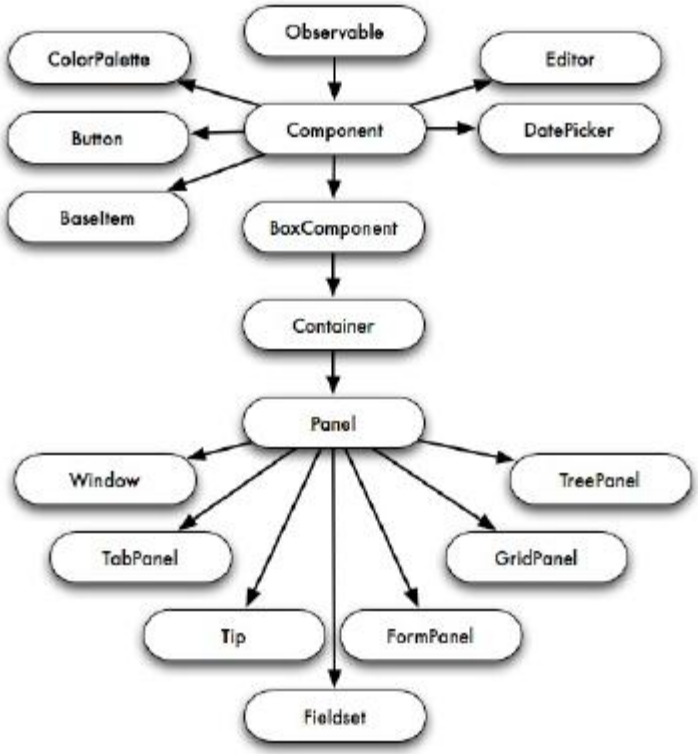
Component

- All widgets extends component class
- Provide base widget functions like
  - enable()/disable()
  - show()/hide()
  - addClass()/removeClass()
  - update(data/html) – update content area
  - getEl() return element
  - getId()
  - getXType()
  - render(target)
  - focus()
- XType – alternate way to define component
  - Lazy component creation
    - var panel1 = {
    - xtype : 'panel',
    - title : 'Plain Panel',
    - html : 'Panel with an xtype specified'
    - }

    - var *myPanel* = new Ext.Panel({
    - renderTo : document.body,
    - height : 50,
    - width : 150,
    - title : 'Panel',
    - frame : true

- Components are managed by Ext.ComponentMgr
  - get(componentId)
  - registerType(xtype, object) (shorthand Ext.reg())



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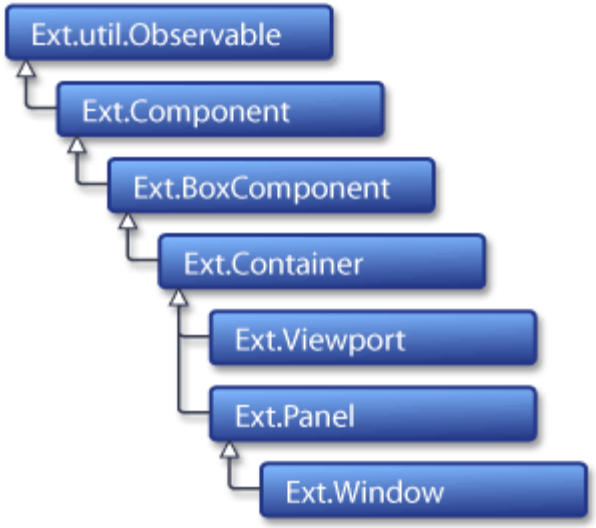
Containers

- handle the basic behavior of containing items, namely adding, inserting and removing items
- Main functions
  - add()
  - remove()/removeAll()
  - insert()
  - find()/findBy()/findById()/findByType
  - doLayout()
  - get(index or id)/getComponent(component or index or id)
- Main prop
  - Items - MixedCollection of children components



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Panels

- Main panel functions/prop/conf prop
  - load()
    - panel.load({
    - url: 'your-url.php',
    - params: {param1: 'foo', param2: 'bar'}, // or a URL encoded string
    - callback: yourFunction,
    - scope: yourObject, // optional scope for the callback
    - discardUrl: false,
    - nocache: false,
    - text: 'Loading...',
    - timeout: 30,
    - scripts: false
    - });
  - body – prop
  - html – conf prop
  - autoLoad – conf prop
- Toolbar and Bottombar
- Panel subclasses
  - TabPanel
  - Window
  - FormPanel
  - GridPanel
  - TreePanel

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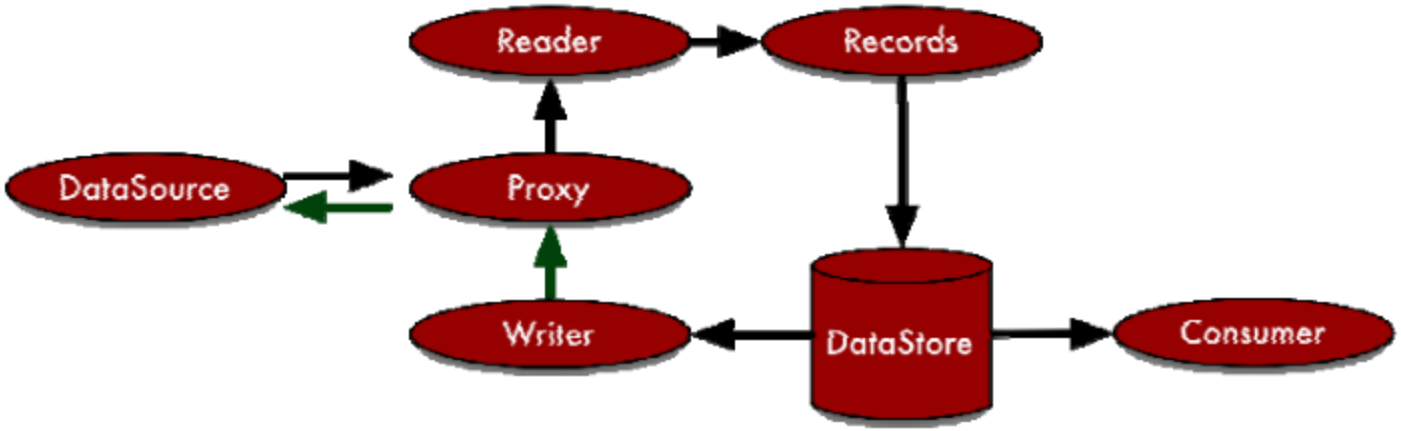
Stores

- Data storage/Loading
- Store contains records object which contain a server data directly
  - Store is able to insert/update/add records
- SubClasses
  - ArrayStore: Store + ArrayReader – plain js array can be loaded into the array store
  - DirectStore: Store + DirectProxy + JsonReader - CRUD operation is going thought custom js method
  - GroupingStore: store for grid rows grouping
  - JsonStore: Store + JsonReader
  - XmlStore: Store + XmlReader



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Stores

- **Main exchange format: XML and JSON**
- **Easy to integrate – any language/framework with XML or JSON support:**

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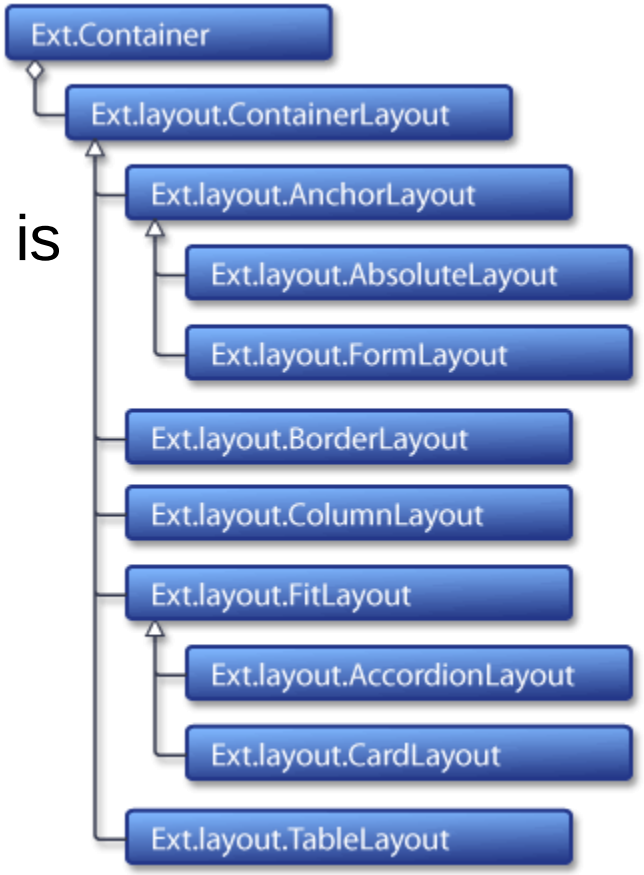
Layout Manager

- Layouts manages by containers – there is no need to create Layouts directly
- The most useful are Fit, VBox, HBox, Border
  - Only VBox, HBox, Border layouts supports margins
- Flex prop of VBox, HBox
- BorderLayout must have center item
- Table layout does not support resizing of items



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Demo: CRUD Grid + Spring + Hibernate

- http://github.com/loiane/extjs-crud-grid-spring-hibernate

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Testing - Selenium

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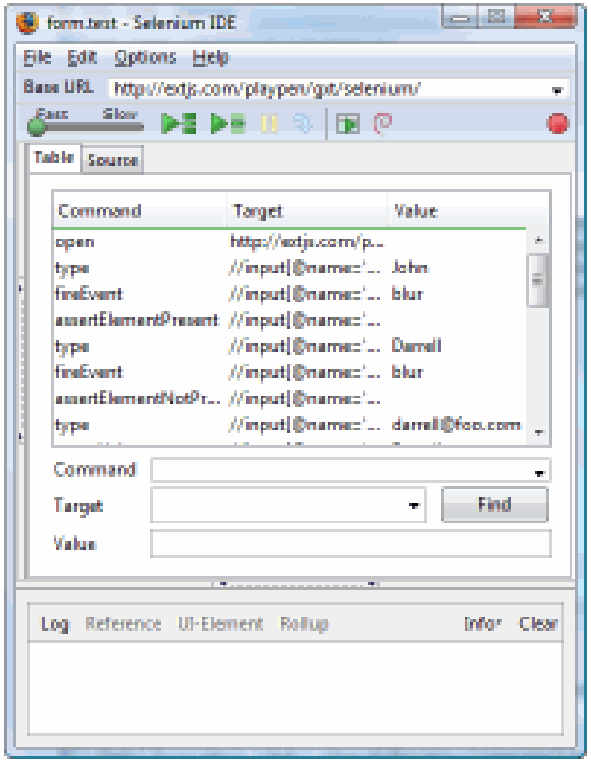
Selenium IDE

- **Firefox Extension**
- **List of Commands**
- **Selenium Locators – Xpath Expressions**
- **Example expressions look like this:**
- //input[@name='name']
- //input[@name='name' and contains(@class, 'x-form-invalid')]
- //input[@name='company']/following-sibling::img
- //div[@id='Apple']
- //div[@class='x-combo-list-item'][3]
- **Examples using CSS selectors:**
- css=html:root
- css=div#structuralPseudo :nth-last-child(2)
- css=a[class~="class2"]



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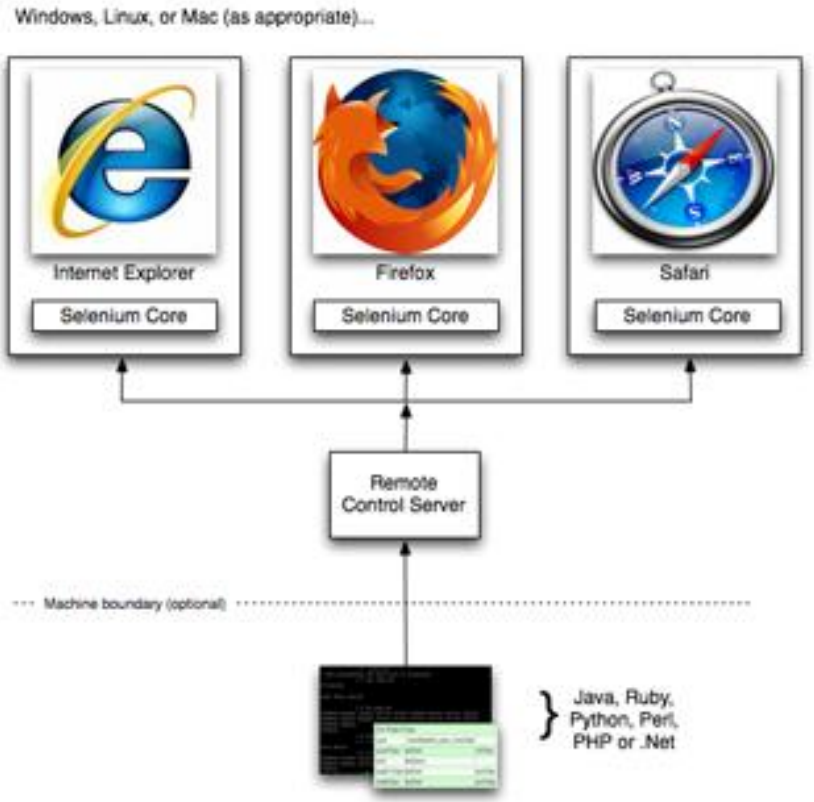
Executing Tests with Selenium Remote Control (RC)

- Programming Language
- HTTP Proxy



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Java Test

```
public class SeleniumTestCase extends SeleneseTestCase  {

  private Selenium selenium;

  public void setUp() {
    selenium = new DefaultSelenium("localhost", 4444, "*iexplore", "http://extjs.com");
    selenium.start();
  }

  public void testForm() {
    selenium.open("http://extjs.com/playpen/gxt/selenium/");
    pause(500);
    selenium.type("//input[@name='name']", "John");
    selenium.fireEvent("//input[@name='name']", "blur");
    assertTrue(selenium.isElementPresent("//input[@name='name' and contains(@class, 'x-form-invalid')]"));
    selenium.type("//input[@name='name']", "Darrell");
    selenium.fireEvent("//input[@name='name']", "blur");
    assertFalse(selenium.isElementPresent("//input[@name='name' and contains(@class, 'x-form-invalid')]"));
    selenium.type("//input[@name='email']", "darrell@foo.com");
    assertEquals("Darrell", selenium.getValue("//input[@name='name']"));
    assertEquals("darrell@foo.com", selenium.getValue("//input[@name='email']"));
    selenium.focus("//input[@name='company']");
    selenium.click("//input[@name='company']/following-sibling::img");
    assertEquals("43", selenium.getXpathCount("//div[@class='x-combo-list-item']"));
    selenium.click("//div[@id='Apple']");
    assertEquals("Apple Inc.", selenium.getValue("//input[@name='company']"));
    selenium.click("//input[@name='birthday']/following-sibling::img");
    selenium.click("//button[contains(text(), \"Today\")]");
    assertTrue(selenium.getValue("//input[@name='birthday']").matches("^[\\s\\S]*$"));
    selenium.check("//input[@value='Classical']");
    assertEquals("on", selenium.getValue("//input[@value='Classical']"));
    selenium.check("//input[@value='Blue']");
    assertEquals("on", selenium.getValue("//input[@value='Blue']"));
  }

  public void tearDown() {
    selenium.stop();
  }

}
```


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Important!

- **Selenium tests for ExtJS should rely on CSS selectors. For every button, grid, label, tab or any significant UI element, simply chose to use the *cls* attribute and specify a CSS class.**

```
new Ext.Button({
    text: 'Send',
    cls: 'seleniumSendBtn', //classes separated by space
    scope: this,
    handler: function(){ ... }
})
```

- **This is how a basic button that is used in automation testing looks like:**

```
//table[contains(@class,'seleniumSendBtn')]
```


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Use Ext JS

- Complex UI
- Features

DO NOT Use Ext JS

- Simple UI
- Single Component

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Resources

- http://www.sencha.com
- http://www.extjs.com.br – **Brazilian forum**

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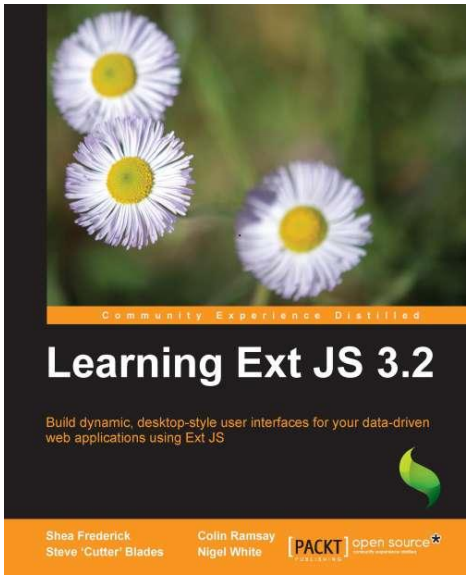
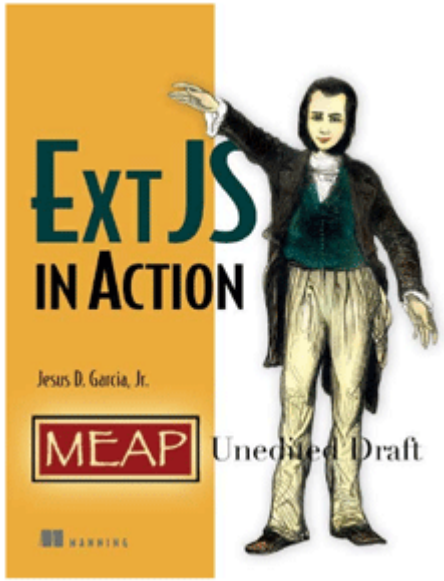
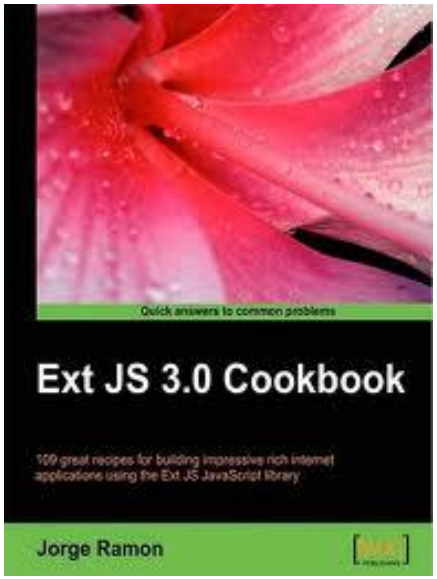
Books







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Contact

- **English blog: http://loianegroner.com**
- **Portuguese-Brazil blog: http://loiane.com**
- **Twitter: @loiane**

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धन्यवाद

Hindi

謝謝

Traditional Chinese

תודה רבה

Hebrew

Спасибо

Russian

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Spanish

Merci

French

Obrigado

Brazilian Portuguese

Danku

Dutch

شكرا

Ar4abic

Thank You

English

Grazie

Italian

谢谢

Simplified Chinese

Danke

German

நன்றி

Tamil

ありがとうございます

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Thai

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Korean

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