



FLEX 3 E FLEX BUILDER 3:

Developing Rich Internet Applications with the new Flex 3 SDKs

OVERVIEW

Flex 3 is the new version of Adobe technology used to define a runtime and development environment that allows developers to create highly interactive front ends by taking advantage of the already popular Flash Player. Flex 3 applications, classified as a Rich Internet Applications, interact with the Business Logic component via web services, Java public methods (POJO, EJB3, Spring, Hibernate) or with HTTP calls with any server side technology (PHP, Coldfusion, .NET, Ruby on Rails) and can be inserted into complex Enterprise architectures (J2EE) guaranteeing aspects such as security and the separation between presentation and logic.

The Flex 3 version enriches SDKs, providing new components to enrich web applications even more, like the new and powerful AdvancedDataGrid, or integration with Flash CS3 and other Adobe Creative Suite 3 products, or even the possibility of exporting the application onto desktop, thereby creating an AIR project.

This course guides students in a step-by-step learning process that begins from the basic notions of Flex 3 and Flex Builder 3 to the development of complex front end applications that communicate with remote data sources.

Teaching goals

This course guides students in a step-by-step learning process that begins from the basic notions of Flex 3 and Flex Builder 3 to the development of complex front end applications that communicate with remote data sources.

Prerequisites

Knowledge of programming and web development concepts. Knowledge of ActionScript and Java are preferable.

Teaching material

The course will provide each student the following text book:

Flex Solutions: Essential Techniques for Flex 2 and 3 Developers

Editore: Friends of Ed - Pagine: 904

PROGRAMME

Flex 3 Development: Getting Started

- Le Rich Internet Application - Flex 3 and Flex Builder 3
- Flex 3 Family of products
- Flash Player 9 and Flash Virtual Machine
- Flex Builder 3 and Eclipse
- Installing Flex Builder 3 and Flex 3 SDK
- Designing and developing a Flex 3 application
- Asynchronous applications

Flex 3 application architecture

- MXML language
- ActionScript 3 Language

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- Developing your first application with Flex 3 and Flex Builder 3
- Using Flex Builder 3's IDE
- Debugging with Flex Builder 3

Developing Applications with Flex Controls and Containers

- Creating a layout using Containers
- Using User Interface Controls
- Navigating with Navigation Container
- Using XML Namespace

Creating Flex Components

- Creating MXML Components
- Defining a customised XML Namespace
- Calling MXML Components
- Creating Composite Components
- Developing ActionScript 3 Components
- Building Loosely coupled components
- Creating template components
- Creating a Flex library
- Exporting re-usable SWC components

Data Binding

- Using data binding in Flex
- Using the `<mx:Binding>` tag
- The `BindingUtil` ActionScript class
- Differences between bindings defined in MXML and ActionScript
- Using the `ChangeWatcher` class
- Data binding with components
- Binding Methods, Objects and properties
- Using `[Bindable]` Metadata

Event management in Flex

- Document Object Model (DOM) Level 3 events model
- Understanding the Event flow in Flex 3
- The three phases: capturing, targeting, and bubbling
- The `flash.events` class. Events and subclasses
- Using Event listeners or event handlers functions
- The `addEventListener()` method
- Invoking the `removeEventListener()`
- The Event object
- Properties of the Event object: `currentTarget`, `target` and `type`
- Dispatching events using the `dispatchEvent()` method
- Mouse and Keyboard events
- Extending the Event class

Creating user interfaces with Flex

- Using Visual Components
- Sizing and Positioning components
- Styling Components
- Using CSS

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- Creating a Constraint Based Layout
- Using the improvements of Design Mode in the new Flex Builder 3

Data Models, Data Providers and ActionScript 3 Value Objects

- Data Models in Flex 3
- MXML Data Models
- Loading XML data with Data Models
- ActionScript 3 Data Models
- Using Data Binding with Data Models
- Converting MXML Data Models into Actionscript Data Models
- Understanding the Data Provider
- Using List based controls
- Populating the List control
- The labelFunction property

Validating and Formatting Data

- Using the Validator classes
- Applying Validators to Form items
- Personalising Error Messages
- Extending Validator classes
- Validating a Data Model
- Formatting data using Formatter classes

Using Collection classes

- Collection subclasses
- Using the ArrayCollection
- Converting MXML Data Model into ArrayCollection
- Setting and receiving items in an ArrayCollection
- Using the XMLListCollection
- The Collection interfaces
- Creating data groups using the GroupingCollection class
- Structuring data with the Hierarchical collection class
- Using the SummaryField, SummaryObject and SummaryRow classes
- Data filtering
- Data ordering
- Using cursors and bookmarks in a row of data
- Adding and deleting items in a collection class

Remote Procedure Call in Flex: HTTPService and WebService class

- Connecting to remote data and databases
- Using the HTTPService class
- Managing result and fault events
- Invoking PHP remote scripts
- Working with Java and JSP in Flex
- The resultFormat property
- Using web services on the internet
- Visualising external data
- Using the Repeater container
- Uploading files in the server with the FileReferenceList class

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Using List-based controls and AdvancedDataGrid

- Using List control
- Using the ComboBox
- Using TileList and HorizontalList components
- Visualising and formatting data in list based controls
- Receiving the selected item
- Extending the DataGrid control
- AdvancedDataGrid control
- Implementing drag and drop operations
- Integrating Tree controls via AdvancedDataGrid
- Using the Item renderers and the Item editors
- Extending Item renderers and Item editors
- Using the Summary Collection class to group data
- Visualising groups of data in an AdvancedDataGrid
- Using the List-based controls and the AdvancedDataGrid control

Using the AdvancedDataGrid control

- The new features of the AdvancedDataGrid control of Flex 3
- Sorting multiple columns
- Selecting multiple cells and rows
- Viewing hierarchical data with the Tree control and the Hierarchical collection
- Viewing grouped data
- Using ItemRenderers and ItemEditors with AdvancedDataGrid control
- Using the OLAPDataGrid
- Creating an OLAP scheme
- Carrying out OLAP queries

Importing RIA application onto desktop with Adobe AIR

- Creating an AIR project
- Using Window API in AIR
- Accessing the File system
- Reading and writing persistent data
- Including an HTML page in the AIR application