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Using Flex in Developing Learning Activities

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Fx A little about me

- **Associate Specialist of Interactive Learning at the Arizona Center for Integrative Medicine**
- **Instructional Designer and Programmer**
- **Mostly ColdFusion, Flex and databases**
- **Never used Flash or Actionscript before Flex**

Fx What is Flex?

- **Actionscript 3 (AS3) + MXML = Flex**
- **MXML is a convenience language**
- **Flex Builder is**
 - **a GUI for Flex**
 - **built on Eclipse available as a plugin or app**
 - **a compiler and debugger**
- **A flex project is a two frame SWF**

Fx Actionscript 3

- **ECMAScript based, like Javascript**
- **Object Oriented**
- **Different classes from Actionscript 2**
- **No more timeline**

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MXML

```
<?xml version="1.0" encoding="utf-8"?>  
  
<mx:Application xmlns:mx="http://www.macromedia.com/2003/mxml">  
  
  <mx:TextInput id="source" width="100"/>  
  <mx:Button label="Copy" click="destination.text=source.text"/>  
  <mx:TextInput id="destination" width="100"/>  
  
</mx:Application>
```

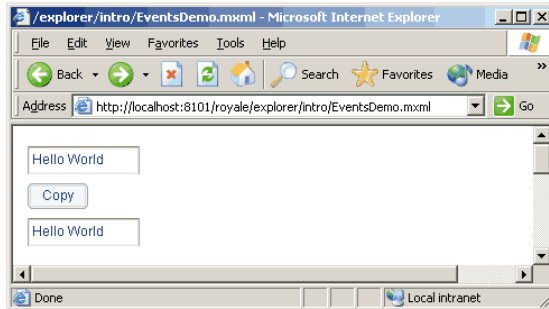


Figure 1. Text moves from the source to the destination TextInput in this simple HelloWorld application

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Flex is Flexible

You can

- not code at all
- procedural code
- object orient code

Fx What is new in Flex 3?

- **Flex 3 was released on February 25, 2008**
- **The release focused on 4 areas:**
 - **Designer/Developer workflow: e.g., enhanced constraints, Flex Component Kit for Flash CS3 (skinning)**
 - **Working with data: e.g., list effects**
 - **Adobe AIR applications: support in the framework for Adobe AIR features**
 - **Platform evolution: e.g., persistent framework caching, compiler performance**

Fx Why use Flex?

- **Flash 9 & 10 penetration**
- **Cross platform (MAC, PC, some mobile)**
- **Avoid needless browser refresh**
- **Flex projects -> to AIR as standalone applications**
- **Integrates with multiple web technologies**

Fx Why use Flex?

- **Create**
 - interactive user interfaces
 - rich internet applications (RIAs)
 - learning objects
 - components
- **Data Driven Flash**
 - Improve user experience

Fx Flex v Ajax

AJAX

- **Web-only**
- **Browser issues**
- **Lightweight libraries**
- **Fast deployment**
- **Google code**
- **Open-source**

Flex

- **Web & Desktop**
- **Deployment of flash**
- **Sandbox security**
- **Open-source SDK**
- **SWF size**
- **More libraries/class to learn**

Fx Flex & Data

- Flex is capable of interfacing with
 - XML and remote XML, RSS, ATOM
 - Web Services, SOAP
 - ColdFusion, Java, PHP, .Net, Ruby
 - LiveCycle DS, Blaze DS, JSON, AMF

Fx Flex is Extensible

- The Flex SDK is open source so you can rewrite packages and classes
- Custom components
- Microframeworks (cairngorm) & OOP

Fx Get Flex for Free

- Flex Builder 3 is available for free to students, staff, and faculty at universities
- <http://www.flexregistration.com/>

Fx Workflow

- Version Control
- Task Management/Debugging
- Designer/Programmer
- Optional plugins
 - **Subclipse** - subversion
 - **Mylyn** - Trac

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Flex in Learning environments

- Standalone Flex SWF files can easily be used in LMS systems such as D2L
- SCORM ready
- Flex Charting to show student submitted data

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Flex in Learning environments

- Web Service calls make integrating remote data, such as census, geographical, or other publicly available data easy to integrative into activities
- Quickly deploy a small learning object into existing course content to represent a concept or allow a student to dynamically alter variables to see different outcomes


Fx Resources

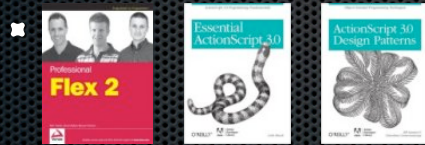
- **Flex.org**
 - This is actually an Adobe run site
- **Documentation**
 - <http://www.adobe.com/support/documentation/en/flex/>
- **Adobe Developer Connection**
 - <http://www.adobe.com/devnet/flex/>
- **Google Code**
 - <http://code.google.com/p/flexlib/>

Fx Flex groups/blogs

- **Flex Coders (yahoo groups)**
- **James Ward** ~ <http://www.jamesward.org/wordpress/>
- **Ryan Steward** ~ <http://blog.digitalbackcountry.com/>
- **Mike Chambers** ~ <http://www.mikechambers.com/blog/>
- **Adobe aggregator** ~ <http://weblogs.macromedia.com/mxna/>

Fx Learning Flex

- ✦ Lynda.com  and totaltraining.com
- ✦ 360 Flex Conferences
- ✦ Adobe MAX
- ✦ Flex Authority



Fx Flex in the real world

- ✦ EBay
- ✦ Salesforce.com
- ✦ Ticketmaster

Fx Flex at AzCIM

- ✦ Audio and video players
- ✦ Interactive case builder and player
- ✦ Student report submission viewer
- ✦ My Practice

Fx References

- ✦ <http://labs.adobe.com/wiki/index.php/Cairngorm>
- ✦ <http://opensource.adobe.com/wiki/display/blazeds/BlazeDS>
- ✦ <http://www.adobe.com/devnet/flex/articles/paradigm.html>
- ✦ <http://labs.adobe.com/wiki/index.php/Thermo>
- ✦ <http://flex-compiler.csail.mit.edu/Harpoon/HOWTO/code-conventions.html>