



Flex Bulgaria
User Group

States & Transitions

by Vladimir Tsvetkov



Objects in Pure O.O.P.

- **Can hold state (references to other objects)**
- **Can receive messages**
- **Can send messages**



Objects in Pure O.O.P.

- **State is always private to the object**
- **Other objects can query that state**
- **Other objects can change that state (only by sending messages)**
- **Object states != Flex states**



Flex States

- **Flex states define particular part(s) of the component (view) state**
- **Flex states provide an interface for changing the component (view) state to a predefined (view) state**

Defining States

```
<mx:states>  
  <mx:State name="collapsed"/>  
  <mx:State name="expanded"  
    basedOn="null"  
    enterState="handler"  
    exitState="handler">  
    <!-- State Overrides -->  
  </mx:State>  
</mx:states>
```

...but you can also use ActionScript



States Hierarchy

- **States are based on the root state by default**
- **States can be based on other states**
- **Thus defining a state hierarchy of (visual) inheritance**



States Hierarchy

```
<mx:states>  
  <mx:State name="collapsed"/>  
  <mx:State name="expanded"/>  
  <mx:State name="login"  
    basedOn="collapsed"/>  
  <mx:State name="register"  
    basedOn="collapsed"/>  
</mx:states>
```



State Overrides

- **AddChild**
- **RemoveChild**
- **SetEventHandler**
- **SetProperty**
- **SetStyle**



mx.states.IOOverride

- **apply(parent : UIComponent) : void**
- **initialize() : void**
- **remove(parent : UIComponent) : void**



Flex Bulgaria
User Group

Demonstration



State Transitions

- **Provide mechanism for smooth visual change**
- **Change occurs over period of time**
- **A transitions is one or more effects grouped together**
- **Transitions do not replace effects**



State Transitions

- **Flex determines the start and end values of the effects by using information from:**
 - **any properties that you specified to the effects**
 - **the current view state**
 - **the destination view state**



Defining Transitions

```
<mx:transitions>  
  <mx:Transition  
    fromState="*"  
    toState="*">  
    <!-- Some Effect -->  
  </mx:Transitions>  
</mx:transitions>
```

...but you can also use ActionScript



Flex Bulgaria
User Group

Demonstration



Flex Bulgaria
User Group

Advanced Techniques



Using Effect Filters

- **You can specify an algorithm for filtering targets - use filter for simple filtering**
- **Use customFilter for more complex filtering**
- **To perform target filtering call captureStartValues() before playing**

```
<mx:Fade filter="add">
  <mx:customFilter>
    <mx:EffectTargetFilter
      filterProperties="['x', 'width']"
      filterStyles="['color']"
      filterFunction="{filterFunction}"/>
  </mx:customFilter>
</mx:Fade>
```



Flex Bulgaria
User Group

Demonstration



Synchronization Tips & Issues

- **Use startDelay**
- **Wrap state transitions into effects when necessary**
- **Any ideas?**



Flex Bulgaria
User Group

Questions?