NewMediaArts

Kapiʻolani Community College, University of Hawaiʻi

INTERFACE PROGRAMMING II

Intro to ActionScript

The basics…

ActionScript is Adobe Flash's programming language. It enables you to make your Flash content interactive and provides a more efficient way to do things in Flash, from creating simple animations through designing complex, data-rich, interactive application interfaces.

The latest version is Actionscript 3.0 which came out with the release of Flash player 9 and Flash CS3.

INTRO TO ACTIONSCRIPT
THE BASICS…

GOOD PRACTICES

» Always indent your code

» Always try to keep your code in one place

   » Typically, most actions are placed in one frame on the main time line (unless you are working on a large-scale site, where one can use classes and other advanced techniques)

   » This makes your code easy to find and easy to debug

» Be careful of your use of capitalization. Flash is case sensitive.

INTRO TO ACTIONSCRIPT

THE BASICS…

ACTIONSCRIPT TERMINOLOGY:

» Data

» Variables

» Statements

» Actions

» Expressions

» Operands and operators

» Dot syntax

» Punctuators

» Constants

» Keywords

» Events

» Event Handlers

INTRO TO ACTIONSCRIPT
THE BASICS…

STATEMENTS AND "ACTIONS"

» Learning ActionScript syntax (Syntax: the grammatical structure of language) and statements is like learning how to put together words to make sentences, which you can then put together into paragraphs. ActionScript can be as simple. For example, in English, a period ends a sentence; in ActionScript, a semicolon ends a statement.

» A statement is an instruction you give the FLA file to do something, such as to perform a particular action.

```
stop();

gotoAndStop(25);
```

Intro to ActionScript
THE BASICS…

DOT (.) SYNTAX

» In ActionScript, you use a dot (.) operator (dot syntax) to access properties or methods that belong to an object or instance on the stage. You also use the dot operator to identify the target path to an instance (such as a movie clip), variable, function, or object.

» A dot syntax expression begins with the name of the object or movie clip, followed by a dot, and it ends with the element you want to specify.

```
noun.action

movieclip.action

mc_nestedContent.gotoAndStop(“about”);

b_myButton.addEventListener(MouseEvent.CLICK, myFunction);
```

Intro to ActionScript
THE BASICS…

Functions

» Just like in JavaScript, functions are an important part of creating Flash applications and web sites.

```
Function NameOfFunction {

    // actions go here

}
```

Intro to ActionScript
THE BASICS…

ACTION PARAMETERS

» The properties and values that go inside of an action.

```
gotoAndPlay( frame number or label );

gotoAndStop( frame number or label );
```

INTRO TO ACTIONSCRIPT
THE BASICS…

EXPRESSIONS

» Expressions, different from statements, are any legal combination of ActionScript that represent a value. Expressions have values, while values and properties have types. An expression can consist of operators and operands, values, functions, and procedures. The expression follows ActionScript rules of precedence and of association. Typically, Flash Player interprets the expression and then returns a value that you can use in your application.

```
x = 5;

x = (y + 5) / 10;
```

INTRO TO ACTIONSCRIPT
THE BASICS…

OPERANDS AND OPERATORS

» Operators are characters that specify how to combine, compare, or change values in an expression. An expression is any statement that Flash can evaluate and that returns a value. You can create an expression by combining operators and values or by calling a function.

» An operand is the part of your code that the operator performs actions on.

```
x = 5;
```

» x and 5 are operands and + is an operator.

Intro to ActionScript
THE BASICS…

PROPERTIES

» values associated with movie clips.

```
.x
.y
.scaleX
.scaleY
.mouseX
.mouseY

MyObject.x = 100;
MyObject.y = 200;
MyObject.scaleX = MyObject.scaleY = .5;
MyObject.x = stage.mouseX;
MyObject.y = stage.mouseX;
```

Intro to ActionScript
THE BASICS…

Punctuators

» Punctuators are the characters that help form your ActionScript code. There are several language punctuators in Flash. The most common type of punctuators are:

- » semicolons ;
- » colons :
- » parentheses ()
- » "curly" braces {}

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THE BASICS…

Keywords

» Keywords in ActionScript are reserved words used to perform specific kinds of actions, so you can't use them as identifiers (such as variable, function, or label names). Examples of some reserved keywords are if, else, this, function, and return. Keywords turn blue in the actions panel.

Intro to ActionScript

THE BASICS…

TARGETING AN INSTANCE, AND NESTED INSTANCES

```
movieclip.nestedmovieclip.action;


movieclip.stop();


mc_content.mc_nestedContent.gotoAndStop("about_sub3");
```

INTRO TO ACTIONSCRIPT
THE BASICS…

EVENTS

» Events are actions that occur while a SWF file is playing. An event such as a mouse click or a keypress is called a user event because it occurs as a result of direct user interaction. An event that Flash Player generates automatically, such as the initial appearance of a movie clip on the Stage, is called a system event because it isn't generated directly by the user.

EVENT HANDLERS

» An event handler method is a method of a class that is invoked when an event occurs on an instance of that class.

  » Often times event handlers are referred to as "listeners" – where ActionScript is used to empower an object to "listen" for a particular event. Once the event is invoked, a particular action can take place, typically via calling a function.

INTRO TO ACTIONSCRIPT
THE BASICS…

COMMON CODE

» Below is an example of a CLICK MouseEvent (ie. a simple button):

```
//as3 import class
import flash.events.MouseEvent;


//as3 button code
myButton.addEventListener(MouseEvent.CLICK, myFunction);


//as3 button functions
function myFunction(event:MouseEvent):void {
  //action goes here
}
```

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THE BASICS…

Common Code

» Below is an example of a ENTER_FRAME Event, used for making an object animate using ActionScript alone:

```
//variables
var newx:int = 2;


//make something move
mc_myObject.addEventListener(Event.ENTER_FRAME,moveMyObject);
function moveMyObject(event:Event) {
  mc_myObject.x += ((newx - mc_myObject.x)/5);
}
```

Intro to ActionScript
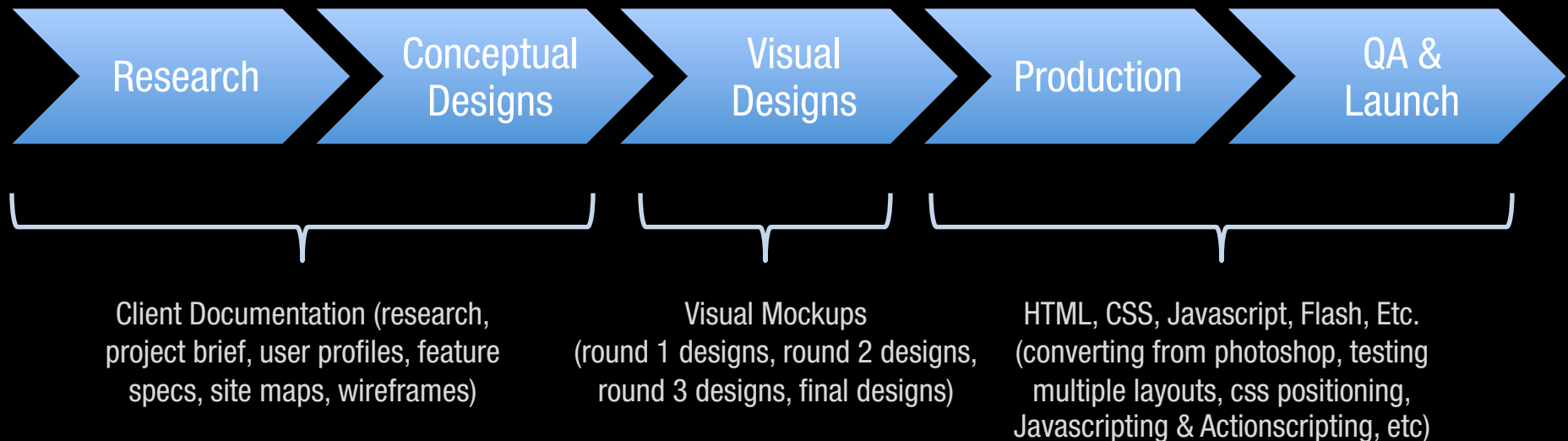THE BASICS…

How to comment code:

» blocks of text: /* and */

» one line at a time: //

THE DESIGN PROCESS
INTERFACE DESIGN

USER PERSPECTIVE

Client needs, User needs, Usability, Features, Site Organization, Visual Designs

| Research | Conceptual Designs | Visual Designs | Production | QA & Launch |

Client Documentation (research, project brief, user profiles, feature specs, site maps, wireframes)

Visual Mockups (round 1 designs, round 2 designs, round 3 designs, final designs)

HTML, CSS, Javascript, Flash, Etc. (converting from photoshop, testing multiple layouts, css positioning, Javascripting & Actionscripting, etc)
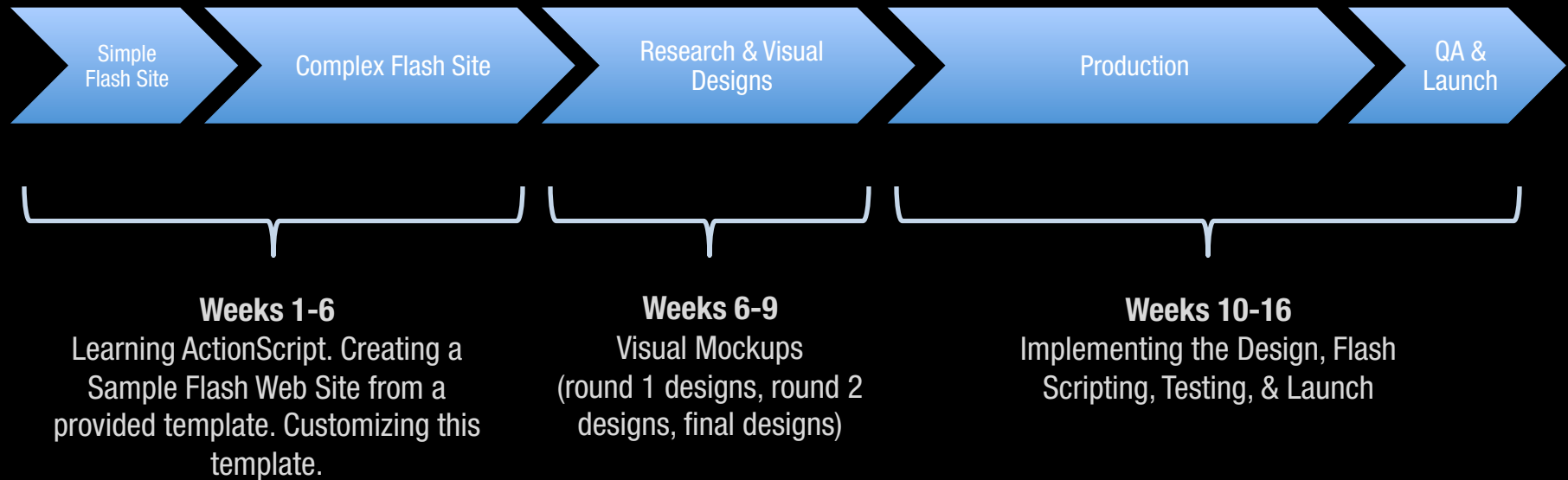
SYSTEM PERSPECTIVE

System needs, Scripting & Programming Languages, Content Management, Site Maintenance, Site Validation

THE DESIGN PROCESS
INTERFACE DESIGN

TIME ALLOCATION FOR THIS COURSE:

| Simple Flash Site | Complex Flash Site | Research & Visual Designs | Production | QA & Launch |

Weeks 1-6
Learning ActionScript. Creating a Sample Flash Web Site from a provided template. Customizing this template.

Weeks 6-9
Visual Mockups
(round 1 designs, round 2 designs, final designs)

Weeks 10-16
Implementing the Design, Flash Scripting, Testing, & Launch

QUESTIONS?

IF YOU EVER HAVE ANY QUESTIONS REGARDING THE PROJECT, PLEASE USE LAULIMA

» Post any questions, concerns, etc. on the Discussion board in Laulima.

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