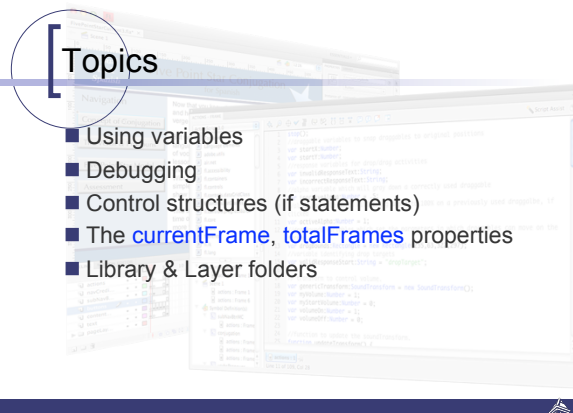
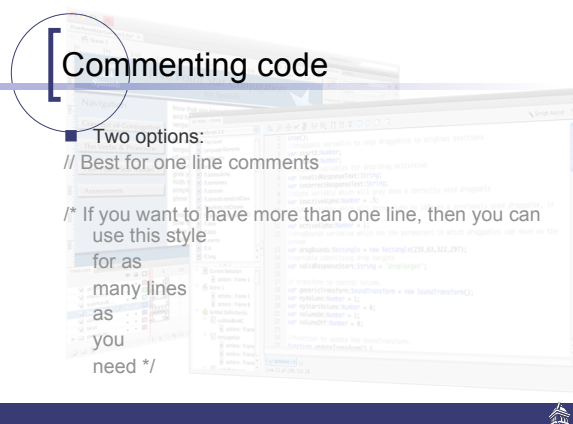


Variables, Debugging, Control Structures



Topics

- Using variables
- Debugging
- Control structures (if statements)
- The `currentFrame`, `totalFrames` properties
- Library & Layer folders



Commenting code

- Two options:
 - // Best for one line comments
 - /* If you want to have more than one line, then you can use this style
 - for as
 - many lines
 - as
 - you
 - need */

Variables/Properties

- Placeholders for information
- Name
- Value
- Type
- Flash Card analogy.
- Flash syntax:
`var variableName: type = value;`

Flash Card Analogy

The diagram illustrates the flash card analogy for variables. A variable named `faceState.text` is shown in a blue box. Two arrows point from this variable to two separate boxes representing possible values: `"I'm happy"` and `"I'm sad"`. This visualizes how a single variable can hold different values at different points in time, much like a flash card that can be flipped to show either side.

Variable Types

| Data type | Default value |
|--|---------------|
| Boolean | false |
| int | 0 |
| Number | NaN |
| Object | null |
| String | null |
| uint | 0 |
| Not declared (equivalent to type annotation -) | undefined |
| All other classes, including user-defined classes. | null |

Adapted from CS5 help file

Using Variables

- When to use:
- Awaiting user input/tracking information
- You are using values for the same thing in multiple places (like a custom constant).
- Global warming project (example)

If statements

- A kind of control structure (conditions/ loops)*
- Something we use every day
- Flash syntax:

```
if(condition) {  
    // this will run if condition is true.  
}
```

Comparison

| | |
|-----------------|-----------------------|
| < | Less than |
| > | Greater than |
| <= | Less than or equal |
| >= | Greater than or equal |
| Logical | |
| && | Logical AND |
| | Logical OR |
| ! | Logical NOT |
| Equality | |
| == | Equality |
| === | Strict equality |
| != | Inequality |
| !== | Strict inequality |

Examples

```
if(face.currentFrame <= 3) {  
    faceState.text = "I'm sad."  
}  
  
/* borrowed with permission from Alan  
Wayman, 2007—based on an .fla file  
he adapted and sent via email. */
```

Can be extended (nesting)

```
var willAndyBikeToWork = false;  
if (andyMood == "energetic") {  
    if (weather != "crappy") {  
        if (bikeTires != "flat") {  
            willAndyBikeToWork = true;  
        }  
    }  
}
```

Logical operators

```
var willAndyBikeToWork = true;  
if (andyMood == "energetic" && weather != "crappy"  
    && bikeTires != "flat") {  
    willAndyBikeToWork = true;  
}  
  
//can you spot the logic error?  
  
//Can't use:  
if (bikePressure == "too low" || "too high") {  
}
```

Using else if and else

```
if(temperature < 20) {  
    bikeRide.text = "Nope, too cold.";  
} else if (temperature > 100) {  
    bikeRide.text = "Nope, too hot.";  
} else {  
    bikeRide.text = "Ok, I'll give it a shot.";  
}
```

Debugging

- Debug->Debug Movie
- Lets you watch variable values (and properties)
- Two kinds of errors:
 - Logic
 - Syntax
- Other option: `trace()`;
- Examples:
 - `trace("button clicked.");`
 - `trace(currentFrame);`

