

Objects }

Advanced Multimedia Technologies

Objects

- { What is an object?
- { Examples of objects
- { Object Creation
- { Drawing Objects
- { Modify Object Properties



What is an object?

What is an object?

- { Instance of a class
- { They have properties
 - { *Attributes that can change*
- { They have methods
 - { *Commands or routines*

Display Object

Most Basic Class

EventDispatcher

DisplayObject

accessibilityProperties: AccessibilityProperties

alpha: Number

blendMode: String

cacheAsBitmap: Boolean

filters: Array

height: Number

loaderInfo: LoaderInfo

mask: DisplayObject

mouseX: Number

mouseY: Number

name: String

opaqueBackground: Object

parent: DisplayObjectContainer

root: DisplayObject

rotation: Number

scale9Grid: Rectangle

scaleX: Number

scaleY: Number

scrollRect: Rectangle

stage: Stage

transform: Transform

visible: Boolean

width: Number

x: Number

y: Number

getBounds(): Rectangle

getRect(): Rectangle

globalToLocal(): Point

hitTestObject(): Boolean

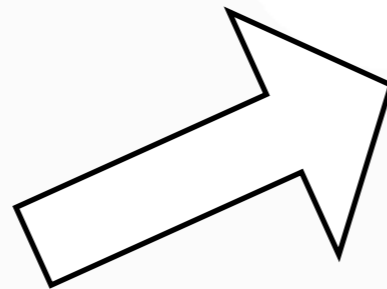
hitTestPoint(): Boolean

localToGlobal(): Point

Display Object

Most Basic Class

properties



{ *Attributes that can change*

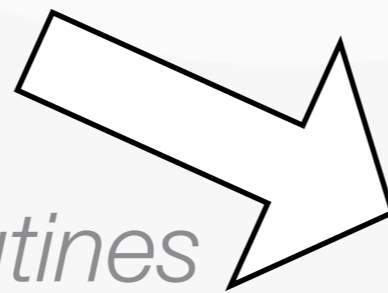
```
EventDispatcher
DisplayObject
-----
accessibilityProperties: AccessibilityProperties
alpha: Number
blendMode: String
cacheAsBitmap: Boolean
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mask: DisplayObject
mouseX: Number
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getBounds(): Rectangle
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```

Display Object

Most Basic Class

methods

{ *Commands or routines*



EventDispatcher
DisplayObject

accessibilityProperties: AccessibilityProperties
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getBounds(): Rectangle
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A closer look: Properties

scaleX: Number

scaleY: Number

scrollRect: Rectangle

stage: Stage

transform: Transform

visible: Boolean

width: Number

x: Number

y: Number

A closer look: Properties

These properties can be read and some of them can be altered

scaleX: Number
scaleY: Number
scrollRect: Rectangle
stage: Stage
transform: Transform
visible: Boolean
width: Number
x: Number
y: Number

A closer look: Properties

These properties can
be read and some of
them can be altered

Example

`mc.x=30`

scaleX: Number
scaleY: Number
scrollRect: Rectangle
stage: Stage
transform: Transform
visible: Boolean
width: Number
x: Number
y: Number

A closer look: Properties

Note the Data Types

scaleX: Number

scaleY: Number

scrollRect: Rectangle

stage: Stage

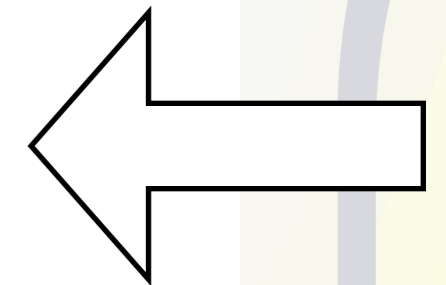
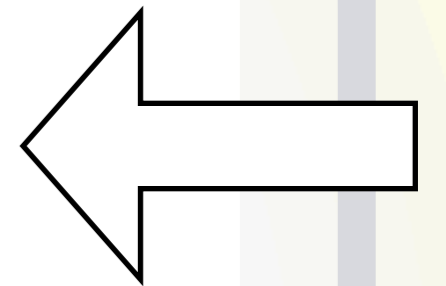
transform: Transform

visible: Boolean

width: Number

x: Number

y: Number



A closer look: Methods

getBounds(): Rectangle
getRect(): Rectangle
globalToLocal(): Point
hitTestObject(): Boolean
hitTestPoint(): Boolean
localToGlobal(): Point

A closer look: Methods

methods are typically
some sort of action,
routine, or answering
a question

getBounds(): Rectangle
getRect(): Rectangle
globalToLocal(): Point
hitTestObject(): Boolean
hitTestPoint(): Boolean
localToGlobal(): Point

A closer look: Methods

methods are typically
some sort of action,
routine, calculation, or
answer to a question

Example

```
mc.hitTestObject(mc2)
```

```
getBounds(): Rectangle  
getRect(): Rectangle  
globalToLocal(): Point  
hitTestObject(): Boolean  
hitTestPoint(): Boolean  
localToGlobal(): Point
```



Example of objects

Example of Objects

- { MovieClip
- { Sound
- { Sprite
- { Video
- { URLRequest
- { XML

Object Creation

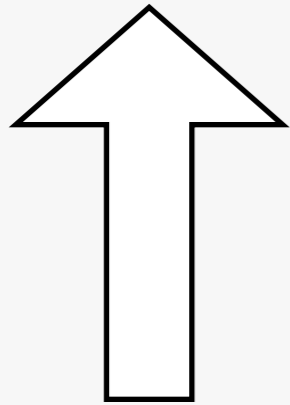


Object Creation

```
var myObject:MovieClip = new MovieClip();
```

Object Creation

```
var myObject:MovieClip = new MovieClip();
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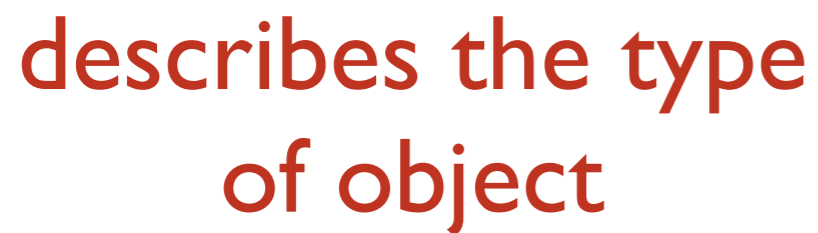


Defines the object

Object Creation

```
var myObject:MovieClip = new MovieClip();
```

describes the type
of object



Object Creation

```
var myObject:MovieClip = new MovieClip();
```



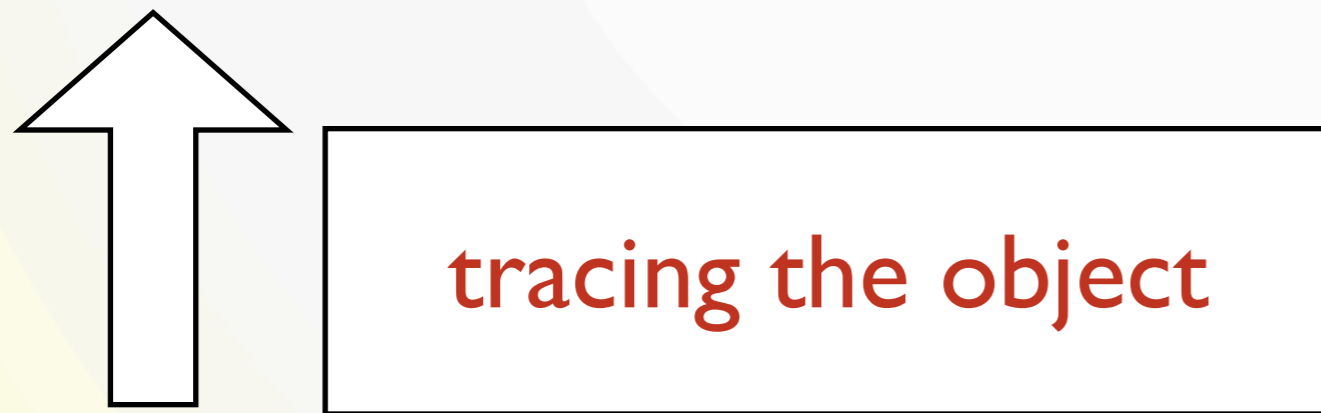
creates the object

Object Creation

```
var myObject:MovieClip = new MovieClip();  
trace(myObject)  
//outputs [object MovieClip]
```

Object Creation

```
var myObject:MovieClip = new MovieClip();  
trace(myObject)  
//outputs [object MovieClip]
```



The MovieClip is invisible until we draw it and add it to our display stack.



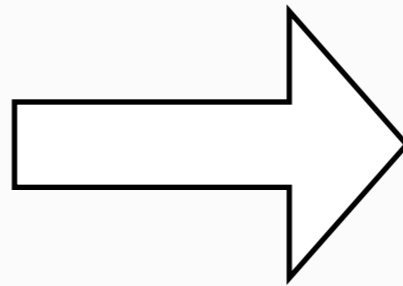
Drawing Objects

Drawing Objects

- { Reference the Graphics Class
- { Draw objects
- { Add objects to the display stack

Reference Graphics Class

methods



Object
Graphics

beginBitmapFill()
beginFill()
beginGradientFill()
clear()
curveTo()
drawCircle()
drawEllipse()
drawRect()
drawRoundRect()
endFill()
lineGradientStyle()
lineStyle()
lineTo()
moveTo()

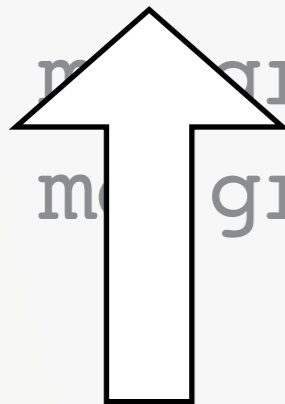
Draw Objects

```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);
```

Draw Objects

```
var mc:MovieClip = new MovieClip();
```

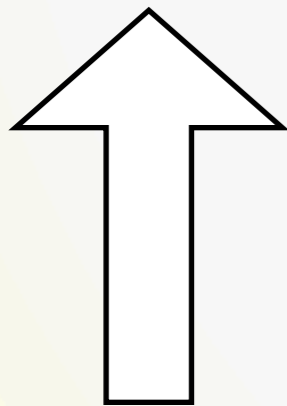
```
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);
```



Create
MovieClip
Object

Draw Objects

```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);
```



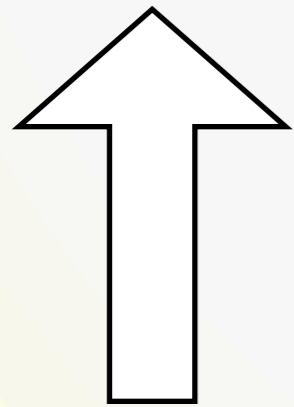
**Draw a shape using
methods from the
graphics class**

Add Object to display stack

```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);  
  
addChild(mc);
```

Add Object to display stack

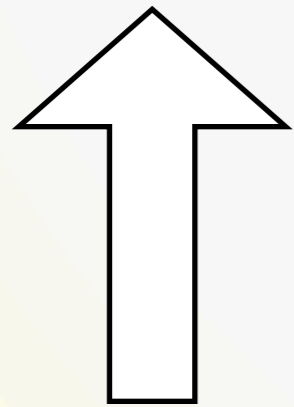
```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);  
addChild(mc);
```



**This will make the
object visible**

Add Object to display stack

```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);  
addChild(mc);
```



**The display stack
controls what's visible
on the stage**



Modify Object Properties

A closer look: Properties

These properties can
be read and some of
them can be altered

Example

`mc.x=30`

scaleX: Number
scaleY: Number
scrollRect: Rectangle
stage: Stage
transform: Transform
visible: Boolean
width: Number
x: Number
y: Number

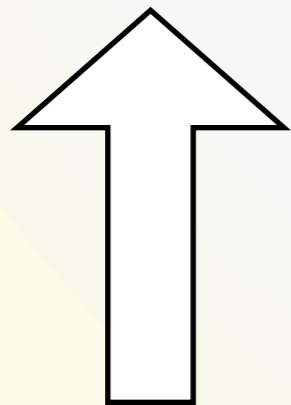
Modify Object Properties

```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);  
  
addChild(mc);  
  
mc.x=30
```

Modify Object Properties

```
var mc:MovieClip = new MovieClip();  
mc.graphics.beginFill(0xFF0000)  
mc.graphics.drawCircle(0,0,10);  
  
addChild(mc);
```

mc.x=30



**Modify Object
Properties**

Common Display Object Properties

{ x

{ y

{ scaleX

{ scaleY

{ alpha

{ rotation

Objects: Summary

- { What is an object?
- { Examples of objects
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- { Modify Object Properties