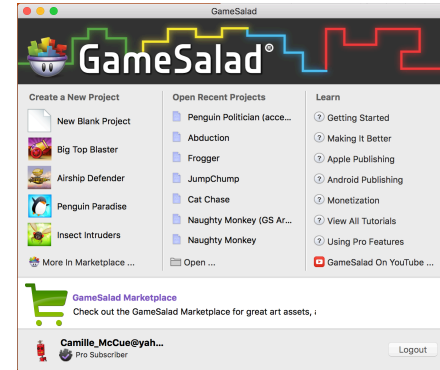


MOBILE APP DEVELOPMENT: SUSHI SLOTS

Using the login and password provided in class,
login to GameSalad.

Create a new Blank Project.



The screenshot shows the GameSalad application window. The title bar includes the Apple logo, the text 'GameSalad', and a menu bar with 'File', 'Edit', 'Format', 'Layout', 'View', 'Window', and 'Help'. On the right side of the title bar, there are icons for a monitor, Wi-Fi, 65% battery, and the time 'Mon 8:38 PM'. Below the title bar, there is a toolbar with buttons for 'Back/Forward', 'Home', 'Scenes', and 'Tables'. A 'Preview' button with a green play icon is also present. To the right of the toolbar are buttons for 'HTML5 Preview', 'Publish', 'Feedback', and 'Help'. The main content area is divided into tabs: 'Project Info', 'Scenes', 'Actors', and 'Tables'. The 'Project Info' tab is active, showing the following fields:

- Title:** Sushi Slot Machine
- Platform:** iPhone 6 Plus Landscape (with a dropdown arrow)
- ☒ Resolution Independence
- ☐ Crop Mode for Other Device Resolutions
- Description (Draft):** Pull the handle to spin the reels.
Each pull costs 5 coins.
Two-of-a-kind pays 10 coins.
Three-of-a-kind (jackpot) pays 70 coins.
- Multiplayer (beta):** None (with a dropdown arrow)

At the bottom of the window, there is a status bar showing 'Camille_McCue@yahoo.com (online)' and a 'Pro Subscriber' badge.

Download the Sushi Slot asset pack from
this URL:

<http://bit.ly/2bCcMn4>



Main

There is only one scene in this app

Import the images, make actors and put the images on actors as noted below.

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Slot Machine

Preview

HTML5 Preview Publish Feedback Help

Inspector

Actors Attributes Devices

Reel 1 Reel 2 Reel 3

slotface

coins

handle

Library Behaviors Images Sounds Fonts

Project Purchased

californ ika roe sake

shrimo tako wasabi

handled... handleup

Camille_McCue@yahoo.com (online)

This is a text box. You will code it to display the value of coins. Later, you will set it to transparent. Drag it to here...

Drag all 7 sushi images onto Reel 1. Drag all 7 sushi images onto Reel 2. Drag all 7 sushi images onto Reel 3.

COINS IN

Import the sounds. All audio files are sounds (not music).

The screenshot displays the GameSalad software interface. At the top, a yellow banner reads "Import the sounds. All audio files are sounds (not music)." The main window shows a project titled "Sushi Slots - Slot Machine" in preview mode. The interface includes a menu bar (File, Edit, Format, Layout, View, Window, Help), a toolbar with navigation and editing tools, and a sidebar with an Inspector and Library. The Inspector shows assets for Reel 1, Reel 2, Reel 3, slotface, handle, and coins. The Library shows sound assets: bigwinsound, japanbell, reelsound, and smallwinsound. A yellow circle highlights the "Purchase Sounds..." button at the bottom left. The main preview area shows a 3D slot machine with three reels, each displaying a sushi icon, and a "COINS IN" label at the bottom.

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Slot Machine

Preview

HTML5 Preview Publish Feedback Help

Inspector Game Scene

Actors Attributes Devices

Reel 1 Reel 2

Reel 3 slotface

handle coins

Library Behaviors Images Sounds Fonts

Project Purchased

bigwinsound japanbell reelsound smallwinsound

Import all as Sounds

Purchase Sounds...

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Make game variables as shown.

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Slot Machine

Back/Forward Home Scenes Tables

Inspector Game Scene

Actors Attributes Devices

Actor Tags text

Platform Connected boolean

Ad Reward adreward

Player Type Single Player enumerat...

Player 1 Keymap playermap

Player 2 Keymap playermap

Player 3 Keymap playermap

Player 4 Keymap playermap

Player 5 Keymap playermap

Player 6 Keymap playermap

Player 7 Keymap playermap

Player 8 Keymap playermap

PurchaseTable table

Roll1 0 integer

Roll2 0 integer

Roll3 0 integer

coins 0 integer

Library Behaviors Images Sounds Fonts

Standard Custom

Accelerate Accelerate Toward Add/Remove Row Animate Buzz Change Attribute Change Image Change Scene Change Size Change Table Value Change Velocity Collide Constrain Attribute Control Camera Conv. Table

Accelerate (Persistent Behavior)

Specify the speed and direction (angle) of acceleration of an actor. Best used in a rule that checks for a keyboard event. Note: If the drag behavior is not also applied to an actor, acceleration will be continuously applied, adding greater and greater speed to the actor until it has reached its maximum defined speed. Note that as this behavior never stops executing, if it is a sequential group, subsequent behaviors will not execute. See also **Accelerate Toward** Behavior.

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Preview

HTML5 Preview Publish Feedback Help

Add four variables:

- Roll1 of type integer
- Roll2 of type integer
- Roll3 of type integer
- coins of type integer



Set up device orientation as shown.

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Slot Machine

Back/Forward Home Scenes Tables

Inspector

Game Scene

Actors Attributes **Devices**

Mouse attributes
Players attributes
Touches attributes
Accelerometer attributes
Screen attributes
Size size
Device Orientation Landscape Left enumerat...
Interface Orientation Landscape Left enumerat...
Device Rotation 0 angle
Audio attributes
Clock attributes
Platform attributes

Library Behaviors Images Sounds Fonts

Standard Custom

Accelerate
Accelerate Toward
Add/Remove Row
Animate
Buzz
Change Attribute
Change Image
Change Scene
Change Size
Change Table Value
Change Velocity
Collide
Constrain Attribute
Control Camera
Copy Table


Accelerate (Persistent Behavior)

Specify the speed and direction (angle) of acceleration of an actor. Best used in a rule that checks for a keyboard event. Note: If the drag behavior is not also applied to an actor, acceleration will be continuously applied, adding greater and greater speed to the actor until it has reached its maximum defined speed. Note that as this behavior never stops executing, if it is a sequential group, subsequent behaviors will not execute. See also **Accelerate Toward** Behavior.

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Preview

HTML5 Preview Publish Feedback Help



GameSalad File Edit Format Layout View Window Help

Sushi Slots - slotface (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

On Change Attribute: INITIALIZE COINS TO 100 AT START OF GAMEPLAY

Change Attribute: To: **Initialize coins to 100**

On Play Sound: MAKE FUN SOUND TO START GAME

Sound: ☐ Loop ☒ Run to completion

Volume: ☐ Positional Sound

Pitch: ☐ Velocity Shift

Attributes

Name	slotface	text
Time	0	real
Position		point
Size		size
Rotation	0	angle
Color		color
Image	slotface	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes
Motion		attributes
Physics		attributes

Library Behaviors Images Sounds Fonts

Standard Custom

Accelerate **Accelerate** (Persistent Behavior)

Accelerate Toward

Add/Remove Row

Animate

Buzz

Change Attribute

Change Image

Change Scene

Change Size

Change Table Value

Specify the speed and direction (angle) of acceleration of an actor. Best used in a rule that checks for a keyboard event. Note: If the drag behavior is not also applied to an actor, acceleration will be continuously applied, adding greater and greater speed to the actor until it has reached its maximum.

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GameSalad File Edit Format Layout View Window Help

Sushi Slots - coins (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Display Text: SHOW THE VALUE OF COINS IN THIS TEXT BOX

Text: game.coins

Align: Wrap inside actor

Position: 0 0 Relative to: actor

Direction: 0 Relative to: actor

Font: Voces Size: 25 Color:

Attributes

Name	coins	text
Time	0	real
Position		point
Size		size
Rotation	0	angle
Color		color
Red	1	real
Green	1	real
Blue	1	real
Alpha	0	real
Image		image
Tags		text

Library Behaviors Images Sounds Fonts

Standard Custom

Accelerate Accelerate Toward Add/Remove Row Animate Buzz Change Attribute Change Image Change Scene Change Size Change Table Value

Accelerate (Persistent Behavior)

Specify the speed and direction (angle) of acceleration of an actor. Best used in a rule that checks for a keyboard event. Note: If the drag behavior is not also applied to an actor, acceleration will be continuously applied, adding greater and greater speed to the actor until it has reached its maximum.

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Expression Editor

= game.coins

insert function: remove expression

Game Devices coins Player 6 Keymap Player 7 Keymap Player 8 Keymap PurchaseTable Roll1 Roll2 Roll3 coins

The Display Text command tells the coins text box actor what information it is to show: the value of **coins**

An Alpha of 0 means that the text box actor will be transparent

Reel 1 will have seven Rules:

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Reel 1 (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Rule: RANDOMROLL = 1

Rule: RANDOMROLL = 2

Rule: RANDOMROLL = 3

Rule: RANDOMROLL = 4

Rule: RANDOMROLL = 5

Rule: RANDOMROLL = 6

Rule: RANDOMROLL = 7

Attributes

Name	Reel 1	text
Time	0	real
Position		point
Size		size
Rotation	0	angle
Color		color
Image	caliroll	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes
Motion		attributes
Physics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

caliroll ika roe sake

shrimp tako wasabi slotface

Purchase Images...

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Rule RANDOMROLL = 1 and Rule RANDOMROLL = 2 are shown on the next page...

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Reel 1 (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Rule: RANDOMROLL = 1

When All conditions are valid:

Attribute game.Roll1 = 1

Change Image

Set Image to: caliroll

Attribute Browser

- Game
 - Player 6 Keymap
 - Player 7 Keymap
 - Player 8 Keymap
 - PurchaseTable
 - Roll1
 - Roll2
 - Roll3
 - coins

Attributes

Name	Reel 1	text
Time	0	real
Position		point
Size		size
Rotation	0	angle
Color		color
Image	caliroll	image
Tags		text
Preload Art		boolean
Graphics		attributes
Motion		attributes
Physics		attributes

Library

Behaviors Images Sounds Fonts

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shrimp tako wasabi slotface

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Follow the pattern to create the remaining rules for Reel 1 and game.Roll1
Keep the sushi in order: caliroll, ika, roe, sake, shrimp, tako, wasabi

Reel 2 also has seven Rules:

Follow the pattern to create the remaining rules for Reel 2 and game.Roll2
Keep the sushi in order: caliroll, ika, roe, sake, shrimp, tako, wasabi

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Reel 2 (Prototype)

Back/Forward Home Scenes Tables

Preview

HTML5 Preview Publish Feedback Help

Create Group Create Rule

On RandomRoll=1

When All conditions are valid:

Attribute game.Roll2 = 1

On Change Image

Set Image to: caliroll

Otherwise:

On RandomRoll=2

When All conditions are valid:

Attribute game.Roll2 = 2

On Change Image

Set Image to: ika

Otherwise:

On RandomRoll=3

On RandomRoll=4

Attributes

Name Reel 2 text

Time 0 real

Position point

Size size

Rotation 0 angle

Color color

Image caliroll image

Tags text

Preload Art boolean

Graphics attributes

Motion attributes

Physics attributes

Library Behaviors Images Sounds Fonts

Project Purchased

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shrimp tako wasabi slotface

Purchase Images...

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Reel 3 also has seven Rules:

Follow the pattern to create the remaining rules Reel 3 and game.Roll3
Keep the sushi in order: caliroll, ika, roe, sake, shrimp, tako, wasabi

GameSalad File Edit Format Layout View Window Help

Sushi Slots - Reel 3 (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

RandomRoll=1

When All conditions are valid:

Attribute game.Roll3 = 1

Change Image

Set Image to: caliroll

Otherwise:

RandomRoll=2

When All conditions are valid:

Attribute game.Roll3 = 2

Change Image

Set Image to: ika

Otherwise:

RandomRoll=3

RandomRoll=4

Attributes

Name	Reel 3	text
Time	0	real
Position		point
Size		size
Rotation	0	angle
Color		color
Image	caliroll	image
Tags		text
Preload Art		boolean
Graphics		attributes
Motion		attributes
Physics		attributes

Library Behaviors Images Sounds Fonts

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shrimp tako wasabi slotface

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GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Rule: IS HANDLE PULLED?

When **All** conditions are valid:

- Actor receives event touch is pressed
- Actor receives event touch is inside

This app uses the touch sensor of the mobile device!

Change Image: HANDLE DOWN

Change Attribute: SUBTRACT 5 COINS PER SPIN

Timer: SPIN THE REELS

Timer: AFTER 2 SEC HANDLE UP

Otherwise:

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes
Motion		attributes
Physics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

caliroll	ika	roe	sake
shrimp	tako	wasabi	slotface

Purchase Images...

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There are a lot of nested rules and commands in here... go slowly and keep track of where you are as you work through the next few pages...

GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

On Rule: IS HANDLE PULLED?

When All conditions are valid:

- Actor receives event touch is pressed
- Actor receives event touch is inside

On Change Image: HANDLE DOWN

Set Image to: handledown

On Change Attribute: SUBTRACT 5 COINS PER SPIN

Change Attribute: game.coins To: game.coins-5

On Timer: SPIN THE REELS

On Timer: AFTER 2 SEC HANDLE UP

Otherwise:

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Width	177	real
Height	572	real
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

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GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Width	177	real
Height	572	real
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes

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shrimp tako wasabi slotface

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On Change Image: HANDLE DOWN

On Change Attribute: SUBTRACT 5 COINS PER SPIN

On Timer: SPIN THE REELS

For 2 seconds Run to Completion

On Timer

Every 0.2 seconds Run to Completion

On Change Attribute: SPIN REEL 1

Change Attribute: game.Roll1 To: random(1,7)

On Change Attribute: SPIN REEL 2

Change Attribute: game.Roll2 To: random(1,7)

On Change Attribute: SPIN REEL 3

Change Attribute: game.Roll3 To: random(1,7)

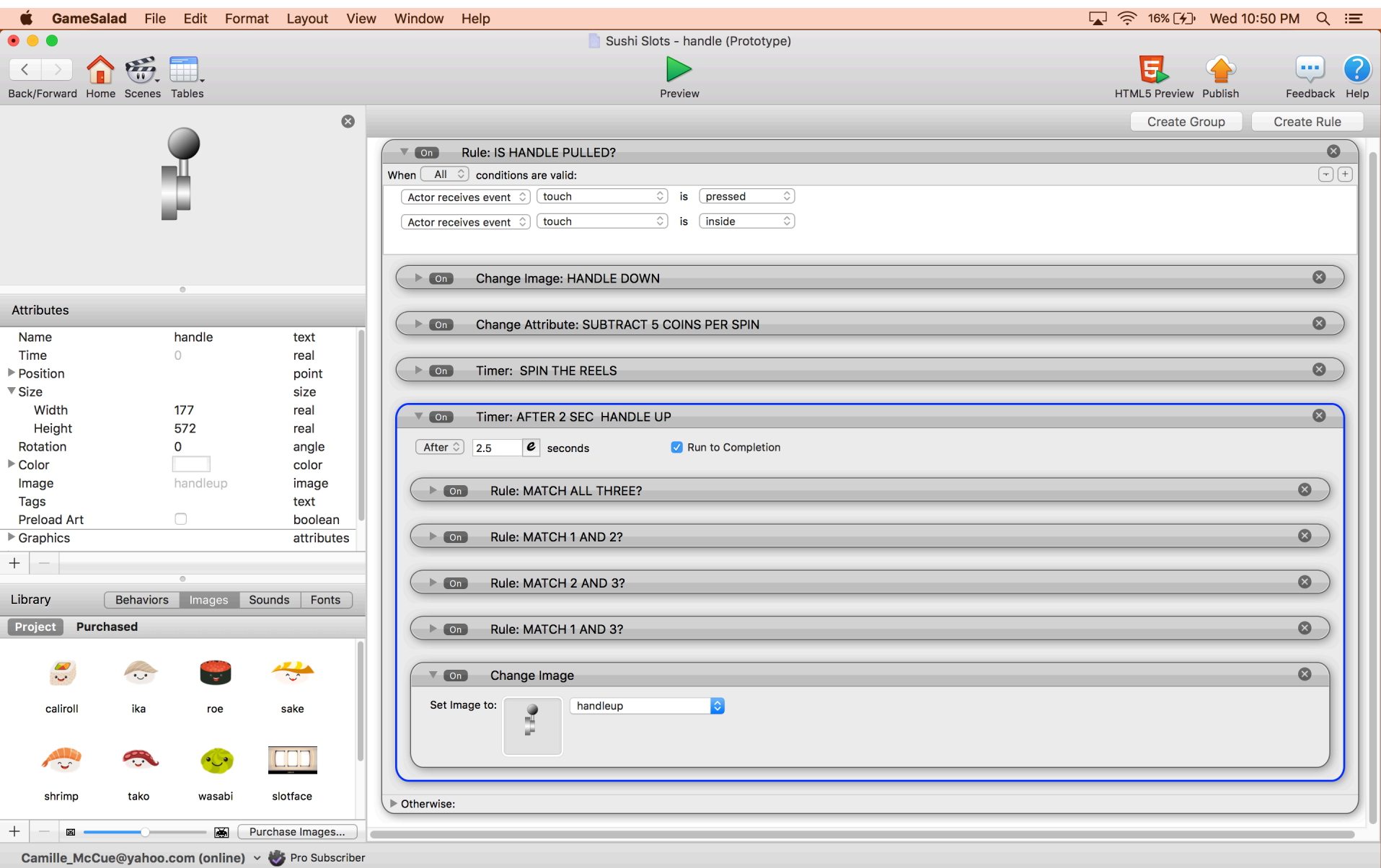
On Play Sound

Sound: reelsound Loop Run to completion

Volume: 1 Positional Sound

Pitch: 1 Velocity Shift

On Timer: AFTER 2 SEC HANDLE UP



GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Timer: AFTER 2 SEC HANDLE UP

After 2.5 seconds ☒ Run to Completion

Rule: MATCH ALL THREE?

When All conditions are valid:

Attribute game.Roll1 = game.Roll2

Attribute game.Roll2 = game.Roll3

Play Sound

Sound: bigwinsound ☐ Loop ☒ Run to completion

Volume: 1 ☐ Positional Sound

Pitch: 1 ☐ Velocity Shift

Buzz

Buzz phone if vibration is turned on

Change Attribute

Change Attribute: game.coins To: game.coins+60

Otherwise:

Rule: MATCH 1 AND 2?

Rule: MATCH 2 AND 3?

Rule: MATCH 1 AND 3?

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Width	177	real
Height	572	real
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

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GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Width	177	real
Height	572	real
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

caliroll ika roe sake

shrimp tako wasabi slotface

Purchase Images...

Timer: SPIN THE KEELS

Timer: AFTER 2 SEC HANDLE UP

After 2.5 seconds ☒ Run to Completion

Rule: MATCH ALL THREE?

Rule: MATCH 1 AND 2?

When All conditions are valid:

Attribute game.Roll1 = game.Roll2

Attribute game.Roll2 ≠ game.Roll3

Play Sound

Sound: smallwinsound ☐ Loop ☒ Run to completion

Volume: 1 ☐ Positional Sound

Pitch: 1 ☐ Velocity Shift

Buzz

Buzz phone if vibration is turned on

Change Attribute

Change Attribute: game.coins To: game.coins+10

Otherwise:

Rule: MATCH 2 AND 3?

Rule: MATCH 1 AND 3?

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GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Rule: MATCH ALL THREE?

Rule: MATCH 1 AND 2?

Rule: MATCH 2 AND 3?

When All conditions are valid:

Attribute game.Roll1 # game.Roll2 e

Attribute game.Roll2 = game.Roll3 e

Play Sound

Sound: smallwinsound Loop Run to completion

Volume: 1 e

Pitch: 1 e

Buzz

Buzz phone if vibration is turned on

Change Attribute

Change Attribute: game.coins To: game.coins+10 e

Otherwise:

Rule: MATCH 1 AND 3?

Change Image

Otherwise:

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Width	177	real
Height	572	real
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art	<input type="checkbox"/>	boolean
Graphics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

caliroll ika roe sake

shrimp tako wasabi slotface

Purchase Images...

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GameSalad File Edit Format Layout View Window Help

Sushi Slots - handle (Prototype)

Back/Forward Home Scenes Tables Preview HTML5 Preview Publish Feedback Help

Create Group Create Rule

Rule: MATCH 2 AND 3?

Rule: MATCH 1 AND 3?

When All conditions are valid:

Attribute game.Roll1 = game.Roll3 e

Attribute game.Roll2 ≠ game.Roll3 e

Play Sound

Sound: smallwinsound Loop Run to completion

Volume: 1 e

Pitch: 1 e

Positional Sound Velocity Shift

Buzz

Buzz phone if vibration is turned on

Change Attribute

Change Attribute: game.coins To: game.coins+10 e

Otherwise:

Change Image

Set Image to: handleup

Otherwise:

Attributes

Name	handle	text
Time	0	real
Position		point
Size		size
Width	177	real
Height	572	real
Rotation	0	angle
Color		color
Image	handleup	image
Tags		text
Preload Art		boolean
Graphics		attributes

Library Behaviors Images Sounds Fonts

Project Purchased

caliroll ika roe sake

shrimp tako wasabi slotface

Purchase Images...

Camille_McCue@yahoo.com (online) Pro Subscriber

For the next phase, you will need your phone to execute your app. Follow these steps:

1. OpenGameSalad Viewer on your phone or iPad
2. Your mobile device and computer must be on the same wireless network: at school, this is the **AEC network** with password **Hearusroar!**
3. Press the **Preview on device** and then select your device name to play the game on your phone or iPad!



The way you compute how much to pay out in a casino game is through a simple math formula called Expected Value (EV).

EV = sum (\$ in or out)*(probability of the transaction)

Example: EV for any spin in our game = $-\$5(100\%) + \$10(38\%) + \$60(2\%) = \0

This means that, over the long haul, the casino and the player break even.

HOW MUCH SLOT PAYOUT SHOULD WE GIVE???

Total number of arrangements:

$$7 * 7 * 7 = 343$$

Three-of-a-kind on Reels 1, 2, and 3

7 ways Probability = $7 / 343 = 0.02$ 2%

Two-of-a-kind on Reels 1 and 2 only

7 ways Probability = $7 / 49 = 0.14$ take away 0.02 12%

Two-of-a-kind on Reels 2 and 3 only

7 ways Probability = $7 / 49 = 0.14$ take away 0.02 12%

Two-of-a-kind on Reels 1 and 3 only

7 ways Probability = $7 / 49 = 0.14$ take away 0.02 12%

No match 100% - 2% - 12% - 12% - 12% 62%

Computing expected values...

Pay to play	Payout No match	Payout 2-kind	Payout 3-kind	Payout EV
-5	0	20	150	5.6
-5	0	20	100	4.6
-5	0	20	50	3.6
-5	0	15	250	5.7
-5	0	15	200	4.7
-5	0	15	150	3.7
-5	0	15	100	2.7
-5	0	15	50	1.7
-5	0	10	250	3.8
-5	0	10	200	2.8
-5	0	10	150	1.8
-5	0	10	100	0.8
-5	0	10	60	0.0
-5	0	10	50	-0.2
-5	0	10	40	-0.4
-5	0	10	30	-0.6
-5	0	10	20	-0.8

Positive expected value means that -- over the long haul -- the PLAYER is up

Negative expected value means that -- over the long haul -- the CASINO is up