Name: _____



BOOTSTRAP: REACTIVE

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Class:



Workbook v0.9

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	Unit	
	Racket Code	Pyret Code
	(define AGE 14)	AGE = 14
	(define A-NUMBER 0.6)	A-NUMBER = 0.6
	(define SPEED -90)	SPEED = -90
Numbers		Two of your own:
ž		
	(define CLASS "Bootstrap")	CLASS = "Bootstrap"
	(define PHRASE "Coding is fun!")	PHRASE = "Coding is fun!"
	(define A-STRING "2500")	A-STRING = "2500"
sgu		Two of your own:
Strings		

```
(define SHAPE
                                          SHAPE =
                                           triangle(40, "outline", "red")
     (triangle 40 "outline" "red"))
   (define OUTLINE
                                          OUTLINE =
     (star 80 "solid" "green"))
                                           star(80, "solid", "green")
   (define SQUARE
                                          SQUARE =
     (rectangle 50 50 "solid" "blue"))
                                           rectangle(50, 50, "solid", "blue")
                                                    One of your own:
   (define BOOL true)
                                          BOOL = true
Booleans
   (define BOOL2 false)
                                                    One of your own:
                                         # double : Number -> Number
   ; double : Number -> Number
                                          # Given a number, multiply by
   ; Given a number, multiply by
                                          # 2 to double it
   ; 2 to double it
   (EXAMPLE (double 5) (*
                                  5)
                                          examples:
Functions
   (EXAMPLE (double 7) (*
                                              double(5) is 2 * 5
                                  7))
                                              double(7) is 2 * 7
   (define (double n)
                                  n))
                                          end
                                          fun double(n):
                                              2 * n
                                          end
```

Fast Functions!

Fill out the contract for each function, then try to write two examples and the definition by yourself.

#	double	:	Numbe	er →	Number
exa	mples: double (5 n 7 n	is	2 * 5 n 2 * 7 n	
fun		(<u> </u>):	
enc					
#	name	:	domain	->	range
exa	mples:				
_		_(_) is		
end		_(_) is		
fun		():	
enc	1				

Fast Functions!

Fill out the contract for each function, then try to write two examples and the definition by yourself.

#		:		>		
	name		domain		range	
exa	mples:					
		() is			
		() is			
end						
fun		():		
en	<u>d</u>					
#	name	:	domain	->	range	-
exa	mples:					
	P = 0.0 t					
_		() is			_
_		() is			
end						
fun		():		
en						

Fast Functions!

Fill out the contract for each function, then try to write two examples and the definition by yourself.

#		•		→	
	name		domain		range
exampl	les:				
		() is		
		() is		
end					
fun		():	
end					
#	name	:	domain	>	range
exampl	Les:				
		() is		
end		() is		
fun		():	

Bug Hunting: Pyret Edition SECONDS = (7)#1 STRING = my string SHAPE1 = circle(50 "solid" "blue") #2 SHAPE2 = triangle(75, outline, yellow) # triple : Number -> Number # Multiply a given number by # 3 to triple it #3 examples: triple(5) = 3 * 5triple(7) = 3 * 7end fun triple(n): #4 3 * n # ys : Number -> Number # Given a number, create a solid # yellow star of the given size examples: ys(99) is star(99, "solid", "yellow") ys(33) is star(99, "solid", "yellow") #5 ys(size): star(size "solid" "yellow") end

Unit 2	

Word Problem: double-radius

Write a function double-radius, which takes in a radius and a color. It produces an outlined circle of whatever color was passed in, whose radius is twice as big as the input.

		Domain	→ Range
name		DOMATII	Kange
	What does	the function do?	
camples	function in action		
	function in action		
mples:			
	1	,	is
	()	12
the user	types		
	which should becom	e	
	()	is
the user t	ypes		
	w	hich should become	
on			
	examples, and name to exerct hing that isn't circ	the variables. cled, and using names wher	e vou find variables!
o oodo, oop,g c	770171111111111111111111111111111111111	orea, arra esing marries when	o yee mia vanasies.
		() :

Word Problem: double-width

Write a function double-width, which takes in a number (the length of a rectangle) and produces a rectangle whose width is twice the given length.

	•		`
name	·	 Domain	→
	What does	s the function do?	
e Examples te examples of	your function in action		
xamples:	your fortellors in delion		
xampies.	1) is
) 15
th	e user types		
	which should beco		<u></u>
		,,,,,	
	() is
the	user types		
 nd	•••	.which should become	
IIG			
		a tha variables	
	n the examples, and name		where you find variable
le the changes i e the code, cop	n the examples, and name lying everything that isn't c		•

Word Problem: next-position
Write a function next-position, which takes in two numbers (an x and ycoordinate) and returns a JumperState, increasing the x-coordinate by 5 and decreasing the y-coordinate by 5.

	<u> </u>			
name		Domain		Range
	What	does the function do?		
ive Examples				
	our function in acti	on		
examples:				
	() is	
the	user types			
the	acc. cypcom			
	which should	become		
	1) is	
) IS	
u	ne user types			
end		which should become		
3114				
ınction				
	the examples, and n			المامالية المامالية
	ing everytning that is	n't circled, and using nai		a variables!
fun		() :
				— ′

Data Structure

# A CakeT is a flavor, layers, & is-iceCream	
data CakeT:	
cake(
)
end	
To make instances of this structure, I would write:	
cake1 =	
cake2 =	
To access the fields of cake2, I would write:	
7 G. G. G. G. G. G. G. G. T. T. T. T. G. G. G. T. T. T. T. T. G. G. G. T. T. T. T. G. G. G. T. T. T. T. T. T. G. G. G. T.	

Word Problem: taller-than

Write a function called *taller-than*, which consumes two CakeTs, and produces true if the number of layers in the first CakeT is greater than the number of layers in the second.

Contract+Purpo	ose Statement			
#	:		→	
#				
Give Examples				
	of your function in acti	on		
examples	:			
) is	
	the user types			
	which should	become		
	() is	
	the user types			
		which should beco	ome	
end		willen should beek		
Function				
	es in the examples, and r			امد
			g names where you find variable	2 \$!
fun		() :	
end				

Word Problem: will-melt

Write a function called *will-melt*, which takes in a CakeT and a temperature, and returns true if the temperature is greater than 32 degrees, AND the CakeT is an ice cream cake.

Confro	act+Purpose Statement
#	: →
#	
	xamples
	examples of your function in action
exa	mples:
_	() is
	the user types
	which should become
	mich should become
	() is
	the user types
end	which should become
Function Circle to	on he changes in the examples, and name the variables.
	ne code, copying everything that isn't circled, and using names where you find variables!
fun	· () :
end	

Unit 3

Identifying Animation Data Worksheet: Sunset

Draw a sketch for three distinct moments of the animation				
Sketch A	Sketch B	Sketch C		

What things are changing?				
Thing	Describe how it changes			

What fields do you need to represent the things that change?				
Field name (dangerX, score, playerIMG)	Datatype (Number, String, Image, Boolean)			

(worksheet continues on the next page)

Define the Data Structure

a _____State is _____

data _____State:

_____)
end

Make a sample instance for each sketch from the previous page:

_____A = ____

_____B = ____

_____c = ____

draw-state

Write a function called *draw-state*, which takes in a SunsetState and returns an image In which the sun (a circle) appears at the position given in the SunsetState. The sun should be behind the horizon (the ground) once it is low in the sky.

ontract+Purpose Sta # draw-state				Image
r draw-scace	•			Image
rite an expression fo	each piece of yo	our final image		
Sun				
Ground				
Sky				
rite the draw-state f	unction, using put-	image to combine	your pieces	
		image to combine) :
) :
) :
) :
) :
) :
) :
) :
) :

Word Problem: next-state-tick

Write a function called *next-state-tick*, which takes in a SunsetState and returns a SunsetState in which the new x-coordinate is 8 pixels larger than in the given SunsetState and the y-coordinate is 4 pixels smaller than in the given SunsetState.

Contract+Pu	rpose Statement	
#	:	→
#		
Give Example	es es	
	les of your function in action	
example	es:	
	() is
	the user types	
	which should become	
	() is
	the user types	,
end	which	should become
Function		
Circle the cha	nges in the examples, and name the	
		l, and using names where you find variables!
fun _	() :
	· ·	-
end		

Identifying Animation Data Worksheet

Draw a sketch for th	nree distinc	moments of the ani	mation	
Sketch ,	A	Sketch E	3	Sketch C
What things are cho	anging?			
Thing		Descr	ibe how it ch	nanges
What fields do you Field name (dange		oresent the things the ayerIMG)		nber, String, Image, Boolean)
, , ,			,, ,	,

(worksheet continues on the next page)

Define the Data Structure

a _____**State** is _____

data _____State:

_____)
end

Make a sample instance for each sketch from the previous page:

_____A = ____

_____B = ____

_____c = ____

Identifying Animation Data Worksheet

Sketch A Sketch B Sketch C at things are changing? Thing Describe how it changes at fields do you need to represent the things that change? ield name (dangerX, score, playerIMG) Datatype (Number, String, Image, Boolean)	Draw a sketch for t	hree distinct	moments of t	ne animation	
Thing Describe how it changes at fields do you need to represent the things that change?					
Thing Describe how it changes at fields do you need to represent the things that change?					
Thing Describe how it changes at fields do you need to represent the things that change?					
Thing Describe how it changes at fields do you need to represent the things that change?					
Thing Describe how it changes at fields do you need to represent the things that change?	Sketch	A	Ske	tch B	Sketch C
at fields do you need to represent the things that change?		anging?		Describe here it al	
	ining			Describe now if Ci	nanges
		1			
ield name (dangerX, score, playerIMG) Datatype (Number, String, Image, Boolean)					
	Field name (dang	erX, score, pl	ayerIMG)	Datatype (Nun	nber, String, Image, Boolean)
	What fields do you			gs that change?	

(worksheet continues on the next page)

Define the Data Structure

a _____**State** is _____

data _____State:

_____)

end

Make a sample instance for each sketch from the previous page:

_____A = ____

_____B = ____

_____c = ____

Identifying Animation Data Worksheet

Draw a sketch for th	nree distinc	t moments of t	he animation	
Sketch	A	Ske	etch B	Sketch C
What things are cho	anging?			
Thing			Describe how it ch	nanges
What fields do you Field name (dange				nber, String, Image, Boolean)
neid name (dang)	CIX, 3COIC, PI	ayellivio)	Dalatype (14011	iber, siring, image, boolean

(worksheet continues on the next page)

Define the Data Structure

a _____**State** is _____

data ____State:

_____(_____

_____)

end

Make a sample instance for each sketch from the previous page:

_____A = ____

_____B = ____

_____c = ____

Identifying Animation Data Worksheet

Draw a sketch for th	nree distinct	t moments of	the animation	
Sketch /	A	Ske	etch B	Sketch C
What things are cho	anging?			
Thing			Describe how it cl	nanges
What fields do you i	need to rep	resent the thi	ngs that change?	
Field name (dange				nber, String, Image, Boolean)

(worksheet continues on the next page)

Define the Data Structure

end

a _____**State** is _____

data _____State:

_____)

Make a sample instance for each sketch from the previous page:

_____A = ____

_____B = ____

_____c = ____

Unit 4

Word Problem: location

Write a function called *location*, which consumes a JumperState, and produces a String representing the jumper's location: either "cliff", "beach", "water", or "air".

Contract+Purpose S	Statement			
#	·			
#				
Give Examples				
examples:	()	is	
	() i	is	
	() i	is	
	_() i	is	

end

(worksheet continues next page)

Functi	on		
fun	n	() :
	if		•
	else if		
	else if		:
	else:		
end	end		

Piecewise Bug-Hunting					
	Buggy Code	Correct Code / Explanation			
Round 1	<pre>fun piecewisefun(n): if (n > 0): n else: 0</pre>				
Round 2	<pre>fun cost(topping): if string-equal(topping, "pepperoni"): 10.50 else string-equal(topping, "cheese"): 9.00 else string-equal(topping, "chicken"): 11.25 else string-equal(topping, "broccoli"): 10.25 else: "That's not on the menu!" end end</pre>				
Round 3	<pre>fun absolute-value(a b): if a > b: a - b b - a end end</pre>				
Round 4	<pre>fun best-function(f): if string-equal(f, "blue"): "you win!" else if string-equal(f, "blue"): "you lose!" else if string-equal(f, "red"): "Try again!" else: "Invalid entry!" end end</pre>				

Animation Extension Worksheet

Describe the goal of your change: what new feature or behavior will it add to your animation?

Draw a sketch	for three distinc	et moments of the animation		
Sketo	ch A	Sketch B Sketch	 ch C	
What things are	e chanaina?			
Thing		Describe how it changes		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
	you need to re langerX, score, p	present the things that change? Datatype (Number, String, Image, Bo	oolean.)
Make a To-Do I	List, and check	off each as "Done" when you finish each one.		
Component	When is there	work to be done?	To-Do	Done
Data Structure	If any new field	ny new field(s) were added, changed or removed		
draw-state	If something is a	something is displayed in a new way or position		
next-state-tick	e-tick If the Data Structure changed, or the animation happens automatically			
next-state-key	-key If the Data Structure changed, or a keypress triggers the animation			
reactor	If either next-sto	ither next-state function is new		

Make a sample i	nstance for each sk	etch from the p	evious page:	
	=			
	=			
	_			
Write at least one	e NEW example for	one of the funct	ions on your To-D	Do list
			·	
_				
_				
_				
If you have anot	her function on you	r To-Do list , write	at least one NE	W example

Word Problem: draw-sun

Write a function called *draw-sun*, which consumes a SunsetState, and produces an image of a sun (a solid, 25 pixel circle), whose color is "yellow", when the sun's y-coordinate is greater than 225, "orange", when its y-coordinate is between 150 and 225, and "red" otherwise.

Contract+Purpose St	atement				
#	:			>	
#					
Give Examples					
examples:					
	_()	is		
	_()	is		
	_()	is		
	_()	is		
_					

end

(worksheet continues next page)

Functi fun		()	:
					_:
	else if _				;
	else if _				- -
	else:				_
end	end				

Unit 5

Describe the goal of your change: what new feature or behavior will it add to your animation?

Decrease the cat's hunger level by 2 and sleep level by 1 on each tick. Make the green bars get smaller based on hunger and sleep levels.



Sketch A Sketch B Sketch C

What things are changing?			
Thing	Describe how it changes		

What fields do you need to represent the things that change?				
Field name (dangerX, score, playerIMG) Datatype (Number, String, Image, Boolean)				

Make a To-Do List, and check off each as "Done" when you finish each one.				
Component	When is there work to be done?	To-Do	Done	
Data Structure	If any new field(s) were added, changed or removed			
draw-state	If something is displayed in a new way or position	V		
next-state-tick	If the Data Structure changed, or the animation happens automatically	V		
next-state-key	If the Data Structure changed, or a keypress triggers the animation	V		
reactor	If either next-state function is new			

Make a samp	ole instance for each sketch from the previous page:
FULLPET =	pet(100, 100)
MIDPET =	pet(50, 75)
LOSEPET =	pet(0, 0)
Write at least	one NEW example for one of the functions on your To-Do list
	tick/CULLDET) is mot/CULLDET burger 2. CULLDET close 4
n <u>ext-state-</u>	tick(FULLPET) is pet(FULLPET.hunger - 2, FULLPET.sleep - 1
next-state	-tick(MIDPET) is pet(MIDPET.hunger - 2, MIDPET.sleep - 1)
next-state	e-tick(LOSEPET) is LOSEPET
If you have ar	nother function on your To-Do list , write at least one NEW example

Draw a sketch	for three distinc	ct moments of the animation		
Sketo	ch A	Sketch B Sketch	С	
What things are	e changing?			
Thing		Describe how it changes		
	you need to re langerX, score, p	present the things that change? Datatype (Number, String, Image, Bo	oolean.)
		3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3		··· /
Make a 10-Do l Component		off each as "Done" when you finish each one. work to be done?	To-Do	Done
Data Structure	If any new field	(s) were added, changed or removed		
draw-state	If something is a	displayed in a new way or position		
next-state-tick	If the Data Stru	cture changed, or the animation happens automatically		
next-state-key	If the Data Stru	cture changed, or a keypress triggers the animation		
reactor	If either next-sto	ate function is new		

Make a sample	instance for each	ch sketch from	the previous p	page:	
					_
	=				_
	=				_
Write at least or	ne NEW example	e for one of the	functions on y	your To-Do list	
		T 5 ".		\	
If you have ano	ther function on	your to-Do list	, write at least	one NEW examp	le

Draw a sketch	for three distinc	ct moments of the animation		
Sketo	ch A	Sketch B Sketch	С	
What things are	e changing?			
Thing	J	Describe how it changes		
		present the things that change?		
Field name (c	langerX, score, p	DlayerIMG) Datatype (Number, String, Image, Bo	oolean.)
Make a To-Do I	List, and check	off each as "Done" when you finish each one.		
Component	When is there	work to be done?	To-Do	Done
Data Structure	If any new field	(s) were added, changed or removed		
draw-state	If something is a	displayed in a new way or position		
next-state-tick	If the Data Struc	cture changed, or the animation happens automatically		
next-state-key	If the Data Struc	cture changed, or a keypress triggers the animation		
reactor	If either next-sto	ate function is new		

Make a sample i	instance for each	sketch from the	e previous page	:	
	=				
	=				
	=				
Write at least one	e NEW example f	or one of the fur	nctions on your	To-Do list	
	•		•		
If you have anot	her function on v	our To Do list w	rite at least one	NEW example	
ii yoo nave anoi	ner fortellorr on y	001 10-D0 list , w	ille di ledsi ofte	TALVY EXCITIPIE	

Build Your Own Animation

Draw a sketch	for three distinc	t moments of the animation		
Sket	ch A	Sketch B Sketch	С	
What things are	e changing?			
Thing		Describe how it changes		
		present the things that change?	oologn	1
rieia name (c	langerX, score, p	Datatype (Number, String, Image, Bo	olean.	••)
Maka a Ta Da	list and chack	off agab as "Dana" when you finish agab and		
Component		off each as "Done" when you finish each one. work to be done?	To-Do	Done
Data Structure	If any new field	(s) were added, changed or removed		
draw-state	If something is c	displayed in a new way or position		
next-state-tick	If the Data Struc	cture changed, or the animation happens automatically		
next-state-key	If the Data Struc	cture changed, or a keypress triggers the animation		
reactor	If either next-sto	ate function is new	П	

Define the Data S	tructure	
# a	State is	
data	State:	
	(
)
end		,
	stance for each sketch from the previous page:	
	=	
	=	
	=	
Write an example	for one of the functions on the previous page:	

Collision

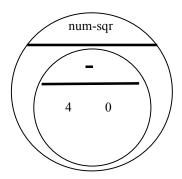
Distance:

The Player is at (4, 2) and the Target is at (0, 5). Distance takes in the player's x, player's y, character's x and character's y.

Use the formula below to fill in the EXAMPLE:

$$\sqrt{(4-0)^2+(2-5)^2}$$

Convert it into a Circle of Evaluation. (We've already gotten you started!)



Convert it into Pyret code:

Word Problem: distance Write a function distance, which takes FOUR inputs: px: The x-coordinate of the player

	py: The y-coordinate of the player cx: The x-coordinate of another cy: The y-coordinate of another sy	er game charact		
It shou	ıld return the distance between tl	he two, using	the Distance formula:	
	Distance	² = (px - c	$(x)^2 + (py - cy)^2$	
	act+Purpose Statement			
#	:		->	
#				
	xamples examples of your function in act	tion		
exai	mples: ()	is	
	()	is	
end Function				
fun):	
end				

Word Problem: is-collision Write a function is-collision, which takes FOUR inputs: px: The x-coordinate of the player

<u> </u>	px: The x-coordinate of the player py: The y-coordinate of the player cx: The x-coordinate of another game character cy: The y-coordinate of another game character t should return true if the coordinates of the player are within 50 pixels of the coordinates of the other character. Otherwise, false.	
	ct+Purpose Statement	
#	·	
#		
Give E	camples xamples of your function in action	
exar	mples: () is	
-		
	() is	
-		
end		
Function	on	
fun	():	
end		

DESIGN RECIPE

Contract+F	Purpose Statement				
Every contr	ract has three parts:				
#	•				
#	· · · · · · · · · · · · · · · · · · ·			> Range	
				3-	
#					_
Give Exam		hat does the function	on do?		
	ples of your function in	action			
_					
examp.	Les:				
	()	is		
	the user types				
	which sh	nould become			
	()	is		
	the user types				
		which should becom	e		
end					
Function					
Circle the ch	nanges in the examples, a	nd name the va	riables.		
fun		():		
			, ,		
end					

DESIGN RECIPE

Contract+F	Purpose Statement				
Every contr	ract has three parts:				
#	•				
#	·	Don		> Range	
				5-	
#					
Give Exam		hat does the function	on do?		
	ples of your function in	action			
_					
examp.	Les:				
	()	is		
	the user types				
	which sh	nould become			
	()	is		
	the user types				
	۷	which should becom	e		
end					
Function					
Circle the ch	nanges in the examples, a	nd name the vai	riables.		
fun		():		
		\	, , , , , , , , , , , , , , , , , , ,		
end					_

	for the constitution	- L	Ha a sustina aili a ia			
Draw a sketch	for three distinc	or moments of	tne animation			
Sket	ch A	Ske	etch B	Sketch	С	
Vhat things are	e changing?					
Thing			Describe how it c	hanges		
What fields do		research tha thi	resident abana	• 2		
	dangerX, score, p		ngs that chang Datatype (N	eç Iumber, String, Image, Bo	oolean.)
				u finish each one.	- De	2
Component		work to be do			To-Do	Don
Data Structure	If any new tiela	l(s) were addea,	, changed or rem	noved		
draw-state	If something is a	displayed in a ne	ew way or positio	n		
next-state-tick	If the Data Stru	cture changed,	or the animation	happens automatically	 	
next-state-key	If the Data Stru	cture changed	or a keypress trio	gers the animation		
HEXI-SIGIE-KCY	II IIIE Daid siio	Clore Changea,	Of a keypiess mg	igers me animanon		
reactor	If either next-sto	ate function is ne	ew.		l –	

Define the Data S	tructure	
# a	State is	
data	State:	
	(
)
end		,
	stance for each sketch from the previous page:	
	=	
	=	
	=	
Write an example	for one of the functions on the previous page:	

Draw a sketch	for three distinc	moments of the animation			
Sket	ch A	Sketch B	Sketch	С	
What things are	e chanaina?				
Thing	3 61141191119 :	Describe how it changes			
			_		
			_		
What fields do	you need to re	present the things that change?			
Field name (c	dangerX, score, p	ayerIMG) Datatype (Number, S	String, Image, Bo	olean.)
		off each as "Done" when you finish ϵ			
Component		vork to be done?		To-Do	Done
Data Structure	If any new field	s) were added, changed or removed			
draw-state	If something is a	isplayed in a new way or position			
next-state-tick	If the Data Struc	ture changed, or the animation happer	ns automatically		
next-state-key	If the Data Struc	ture changed, or a keypress triggers the	animation		
reactor	If either next-sto	te function is new			

Define the Data S	tructure	
# a	State is	
data	State:	
	(
)
end		,
	stance for each sketch from the previous page:	
	=	
	=	
	=	
Write an example	for one of the functions on the previous page:	

Draw a sketch	for three distinc	t moments of the ar	nimation			
Sket	ch A	Sketch	 B	Sketch	С	
What things ar	o chanaina?					
What things are Thing	e changing?	Describ	oe how it chan	iges .		
\^/ f: - -						
	you need to re dangerX, score, p	oresent the things th		ber, String, Image, Bo	oolean.)
<u> </u>						,
		off each as "Done"	when you fir		To Do	Dana
Component		work to be done?			To-Do	Done
Data Structure	ii any new iieia	(s) were added, chan	ged of remove	ea		
draw-state	If something is a	lisplayed in a new wa	y or position			
next-state-tick	If the Data Stru	cture changed, or the	animation ha	ppens automatically		
next-state-key	If the Data Stru	cture changed, or a k	eypress trigger	rs the animation		
reactor	If either next-sto	te function is new				

Define the Data	Structure	
# a	State is	
data	State:	
l	(
_)
end		
Make a sample	instance for each sketch from the previous page:	
	=	
	=	
	=	
Write an examp	le for one of the functions on the previous page:	
_		

Draw a sketch	for three di	stinct moments of the animation		
Sket	ch A	Sketch B Sketch	C	
What things are	e changing			
Thing		Describe how it changes		
What fields do	you need t	o represent the things that change?		
Field name (c	langerX, sco	re, playerIMG) Datatype (Number, String, Image, Bo	olean.)
Make a To-Do I	List, and ch	eck off each as "Done" when you finish each one.		
Component		·	To-Do	Done
Data Structure	If any new	field(s) were added, changed or removed		
draw-state	If somethin	g is displayed in a new way or position		
next-state-tick	If the Data	Structure changed, or the animation happens automatically		
next-state-key	If the Data	Structure changed, or a keypress triggers the animation		
reactor	If either nex	xt-state function is new		

Make a sample i	nstance for each sket	tch from the previ	ous page:	
·		•		
	=			
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Write at least one	e NEW example for or	ne of the functions	on your To-Do list	
	·		•	
If you have anot	her function on your T	O-Do list write at	least one NEW evai	mnle
ii yoo nave anon		O-DO list, Willout	ICASI ONC INEW CXAI	HPIC

Draw a sketch	for three	distinc	t moments of the animation		
Sket	ch A		Sketch B Sketch	С	
What things are	e changi	ng?			
Thing			Describe how it changes		
What fields do	you nee	d to rep	oresent the things that change?		
Field name (c	langerX, s	score, p	layerIMG) Datatype (Number, String, Image, Bo	oolean.)
Make a To-Do I	List, and	check	off each as "Done" when you finish each one.		
Component			·	To-Do	Done
Data Structure	If any ne	ew field	(s) were added, changed or removed		
draw-state	If somet	hing is c	displayed in a new way or position		
next-state-tick	If the Do	ata Struc	cture changed, or the animation happens automatically		
next-state-key	If the Do	ata Struc	cture changed, or a keypress triggers the animation		
reactor	If either	next-stc	ate function is new		

= = Write at least one NEW example for one of the functions on your To-Do list If you have another function on your To-Do list , write at least one NEW example	Make a sample insta	nce for each sketch fro	om the previous po	age:	
Write at least one NEW example for one of the functions on your To-Do list					
=	= _				
Write at least one NEW example for one of the functions on your To-Do list					
Write at least one NEW example for one of the functions on your To-Do list	=				
Write at least one NEW example for one of the functions on your To-Do list					
Write at least one NEW example for one of the functions on your To-Do list	=				
If you have another function on your To-Do list , write at least one NEW example	Write at least one NE	W example for one of t	the functions on yo	our To-Do list	
If you have another function on your To-Do list , write at least one NEW example					
If you have another function on your To-Do list , write at least one NEW example					
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If you have another function on your To-Do list , write at least one NEW example					
If you have another function on your To-Do list , write at least one NEW example					
	If you have another f	unction on your To-Do	list , write at least c	one NEW example	e

Contracts

Name	Domain	Range	example
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Contracts

Name	Domain	Range	example
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