Names: _____

Conditionals Questions

- Does something happen differently at different times, or only happen sometimes?
    - → if so, need conditionals

- What are the alternatives?
- How do we decide between them?
    - ◦ *on-the-spot* – focus is on how to decide in the moment
        - ▪ decision about which alternative is based only on the current *value of animation or system variable(s)*
    - ◦ *prior happenings* – focus is on when the change in behavior occurs
        - ▪ decision about which alternative depends on prior events / what has been going on

On-the-spot decisions –

- Is "do nothing" an option?
- When does each alternative occur?

Prior happenings decisions –

- What is the decision about?
- How many alternatives are there?
- Is "do nothing" an option?
- Which alternative do we start with?
- For each alternative, when do we change to that alternative?

At the End of Class

Hand in this handout.

Exercises

1. A sketch contains a 100x100 rectangle centered in the drawing window. The rectangle should be outlined in black, and should be filled red when the mouse is over it and blue otherwise.

	what happens differently, or only sometimes?	
	what are the alternatives?	
	how do we decide between them?	
	on the spot or prior happenings?	
on-the-spot	is "do nothing" an option?	
	when does each alternative occur?	
prior happenings	what is the decision about?	
	how many alternatives are there?	
	is "do nothing" an option?	
	which alternative do we start with?	
	For each alternative, when do we change to that alternative?	

2. A sketch contains a 100x100 rectangle centered in the drawing window. The rectangle should grow in width when the mouse is over the rectangle, and should reset to 100 when it reaches the edge of the window. (The rectangle should remain centered in the window.)

	what happens differently, or only sometimes?	
	what are the alternatives?	
	how do we decide between them?	
	on the spot or prior happenings?	
on-the-spot	is "do nothing" an option?	
	when does each alternative occur?	
	what is the decision about?	
	how many alternatives are there?	
	is "do nothing" an option?	
	which alternative do we start with?	
prior happenings	For each alternative, when do we change to that alternative?	

3. A sketch contains an ellipse which grows steadily. Clicking the mouse should pause and unpause the animation so that sometimes the ellipse grows and sometimes it doesn't.

	what happens differently, or only sometimes?	
	what are the alternatives?	
	how do we decide between them?	
	on the spot or prior happenings?	
on-the-spot	is "do nothing" an option?	
	when does each alternative occur?	
prior happenings	what is the decision about?	
	how many alternatives are there?	
	is "do nothing" an option?	
	which alternative do we start with?	
	For each alternative, when do we change to that alternative?	

4. A sketch contains a rectangle whose width grows until it reaches the edges of the window, then its height grows. Once the rectangle reaches the top/bottom of the window, both width and height reset to 0 and the animation repeats.

	what happens differently, or only sometimes?	
	what are the alternatives?	
	how do we decide between them?	
	on the spot or prior happenings?	
on-the-spot	is "do nothing" an option?	
	when does each alternative occur?	
prior happenings	what is the decision about?	
	how many alternatives are there?	
	is "do nothing" an option?	
	which alternative do we start with?	
	For each alternative, when do we change to that alternative?	

If you have time –

5. A sketch contains a 100x100 rectangle centered in the drawing window. The rectangle should grow in width when the mouse is moved to the right, shrink in width when the mouse is moved to the left, and not change when the mouse stays still (or moves only vertically). (Hint: in addition to system variables mouseX and mouseY for the mouse's current position, there are also system variables pmouseX and pmouseY for the mouse's previous position.)

	what happens differently, or only sometimes?	
	what are the alternatives?	
	how do we decide between them?	
	on the spot or prior happenings?	
on-the-spot	is "do nothing" an option?	
	when does each alternative occur?	
prior happenings	what is the decision about?	
	how many alternatives are there?	
	is "do nothing" an option?	
	which alternative do we start with?	
	For each alternative, when do we change to that alternative?	

6. A sketch contains a 100x100 rectangle centered at a random position in the drawing window. Clicking the mouse inside the rectangle should cause it to move to a new random position.

	what happens differently, or only sometimes?	
	what are the alternatives?	
	how do we decide between them?	
	on the spot or prior happenings?	
on-the-spot	is "do nothing" an option?	
	when does each alternative occur?	
prior happenings	what is the decision about?	
	how many alternatives are there?	
	is "do nothing" an option?	
	which alternative do we start with?	
	For each alternative, when do we change to that alternative?	

7. A sketch contains a rectangle whose width grows until it reaches the edges of the window, then its height grows. Once the rectangle reaches the top/bottom of the window, both width and height reset to 0 and the animation repeats. This repeats three times before stopping.

	what happens differently, or only sometimes?		
	what are the alternatives?		
	how do we decide between them?		
	on the spot or prior happenings?		
on-the-spot	is "do nothing" an option?		
	when does each alternative occur?		
	what is the decision about?		
	how many alternatives are there?		
	is "do nothing" an option?		
prior happenings	which alternative do we start with?		
	For each alternative, when do we change to that alternative?		