

How Tall Are You

Functions - If_else – create your own procedure

In this tutorial you will be learning to use functions to ask how tall a character is. Using this information two characters will compare their height and give a specific response depending on who is the tallest.

1. Start Alice 3. Select the Wonderland template from the Blank Slates section of the Select Template Dialog box
 1. Click on the Setup Scene . Go into your Biped Class and click on new Bunny ().
 2. Click on new CheshireCat (), and add it to your world.
 3. Using your object moving buttons, move the Bunny to the left of your viewing screen, and move the CheshireCat to the right of your viewing screen. Resize so they are approximately the same size. Rotate them so they are facing each other. Your world should look like the picture below.
 4. Save your project with the name **ifelse**



2. Using the True or False Functions
 1. Since we only want the CheshireCat to say “Hah! I’m taller” if he is taller, we need to use something called an If Else statement. You will find it located below your method editor: Drag in an If Else statement. Select true when you drop it. We will replace this later.

```
declare procedure myFirstMethod
```

```
do in order
```

```
if true is true then
```

```
drop statement here
```

```
else
```

```
drop statement here
```

Here is where you put the question that is either true or false. For us, that will be CheshireCat is taller than the Bunny. Since it is currently set at true, that means this If Else says, "If this statement right here is true, do whatever commands are ri

This is where you put whatever you want to happen if the answer to your question is true. This is where we'll tell the CheshireCat to say "Hah! I'm taller!"

This is where you put whatever you want to happen if the answer to your question is NOT true. If it is not true, it will skip everything above the Else, and go straight to whatever is here. This is where we'll tell the Bunny to say "Hah! I'm taller!", because if our statement is false, and the CheshireCat is NOT taller, that means the Bunny is taller! Step 3: True or False Continued...

2. So let's construct our question. Click on true in the If Else statement. Click on Relational (Decimal Number). Click on the greater than > symbol, and pick 2.0 for the first value and 1.0 for the second value.
3. So let's construct our question. Go to the CheshireCat's functions and drag this.CheshireCat getHeight over the 2.0 in the if else statement. Next, go to the Bunny's functions and drag this.Bunny getHeight over the 1.0 in the if else statement. Now, the if else statement will ask the CheshireCat's height is greater than the Bunny's



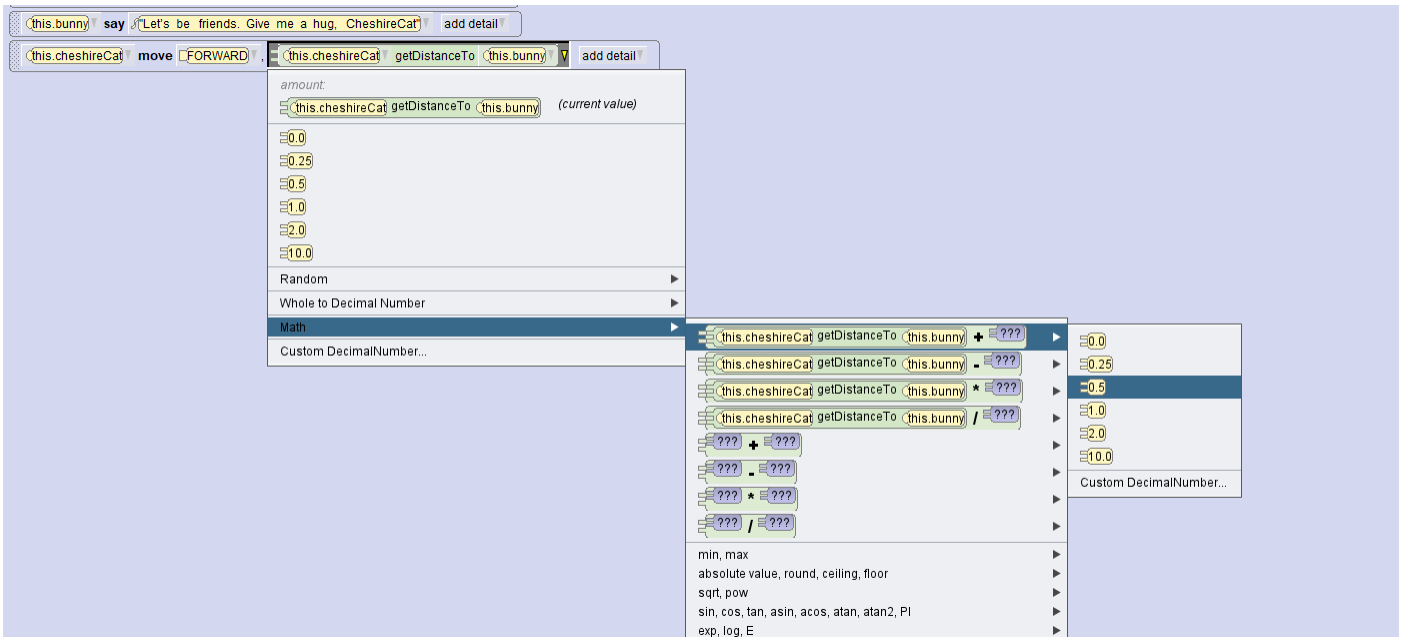
8. It seems that the CheshireCat is taller. To test and make sure your function is working correctly, go to the Set Up screen and use your object buttons to resize the Bunny and make him clearly taller than the CheshireCat. Now, play your world again. This time, the Bunny will say that he is taller! You can change him back to his normal size after you test this out.

Think about what would happen if they were both the same height.

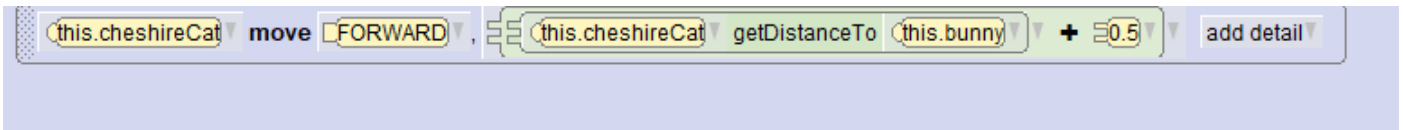
3. Now we're going to use one of the functions that is a question whose answer is a number. We're going to make the CheshireCat move right up to the Bunny and give him a hug. The only problem is, we don't know how far to tell him to move! That's why we'll use a function!
 1. First we'll tell the Bunny to say something. He's tired of competing with the Cheshire Cat about their height, and he wants to be friends. Click on this.Bunny, then click on Procedures. Find Bunny say, and drag it under your If Else statement. Make him say "Let's be friends. Give me a hug, CheshireCat!"
 2. Now we want the CheshireCat to move right up to the guy to hug him.
 3. Click on CheshireCat in your object tree and then click on procedures. Find the CheshireCat move and drag it into your method editor under everything else. We don't know exactly how far yet, so just put 1 meter for now. Play your world just to see what it looks like.
 4. Now we're going to use a function to tell the CheshireCat how far forward to move.
 5. Click on CheshireCat in your object tree, and then click on the functions tab. Find the function under "other" called get distance to. Drag that function over the 1 meter

er on your CheshireCat move forward command and drop it there. On the menu that pops up, select Bunny.

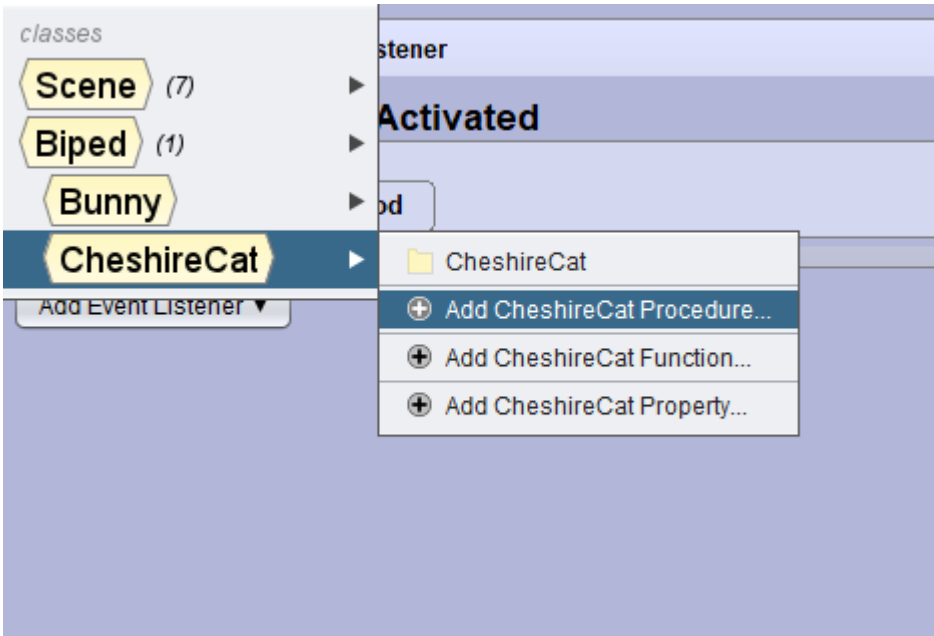
6. Try playing your world. What happens? The CheshireCat moves too far, into the body of the Bunny. It would be nice if the CheshireCat would stop about 0.5 meters in front of Bunny. We can select math, followed by "--", followed by a number. [Click here](#) to apply math.



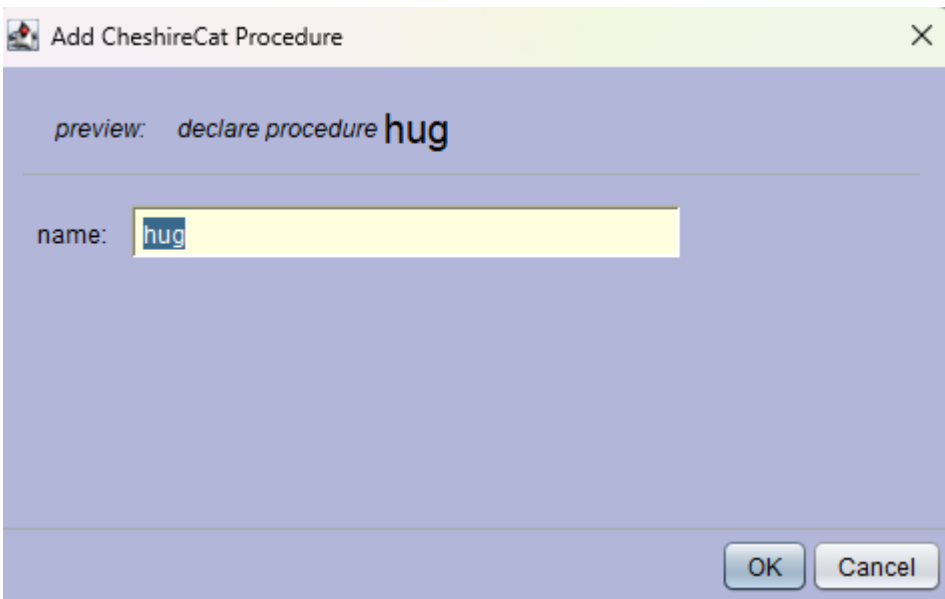
Your code for this line will then look like this:



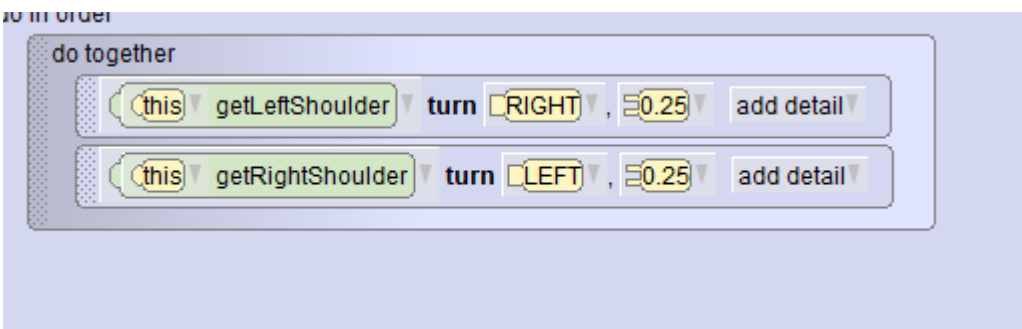
9. The last thing you need to do is make the CheshireCat hug the guy. Go to classes, then CheshireCats, and click on add CheshireCat procedure.



1. Call it hug.



2. In this method, experiment until you find code that makes the CheshireCat hug the guy.
My code for CheshireCat.hug looks like this.



- Now click on the my first method tab of your method editor. Make sure you have clicked on CheshireCat in the object tree, and then look at the CheshireCat's procedures list. Find CheshireCat.hug, and drag it into the bottom of your method editor. Your final code will look like this.

The screenshot shows a Scratch method editor for a procedure named `myFirstMethod`. The code is written in a block-based style and includes the following steps:

- `do in order` block containing:
 - `if` block: `this.cheshireCat.getHeight` > `this.bunny.getHeight` is true then:
 - `do together` block:
 - `this.cheshireCat say` "HAHH! I am taller than you!!" (with "add detail" button)
 - `this.cheshireCat turn` LEFT, 1.0 (with "add detail" button)
 - `else` block:
 - `do together` block:
 - `this.bunny say` "HAHH! I am taller than you!!" (with "add detail" button)
 - `this.bunny turn` LEFT, 1.0 (with "add detail" button)
 - `this.bunny say` "Let's be friends. Give me a hug, CheshireCat" (with "add detail" button)
 - `this.cheshireCat move` FORWARD, `this.cheshireCat.getDistanceTo` `this.bunny` - 0.5 (with "add detail" button)
 - `this.cheshireCat hug`