Introduction

• This tutorial will demonstrate how to use a tool called a “Function” in Alice, to tell if one object is relatively close to another object.

• In order to do this we will build a simple world and a simple function to tell if two objects are on top of each other.

Building the World

• To set up this world, you can either download it off the repository or build it from scratch.

• To build it simply choose a grass scene, in Alice and add a bunny and a boar from the Web gallery.

Writing the function

• The first thing that we need to do is create a function in world.

• Click on world and and then the functions tab

• Click on the gray “Create new function” button.
Writing the function

- We are going to name this one “overlaps.”
- Make sure you select the Boolean type.

After you write the name a green box should appear on your screen that looks like this.

Writing the function

- Next we need to drag an if/else statement into the place that currently says "do nothing."

Now your screen should look like this.

Writing the function

- For the first number we are going to go to the boar’s functions and choose “boar distance to bunny.”

Your screen should now look like this.

Writing the function

- Now let’s go to world level functions and drag the a<b tab over from the logic column.

Just pick any numbers for A and B, they are simply place holders.

Your screen should now look like this.
Writing the function

• Now find the function inside of boar's functions labeled “boar's width.” Drop on top of the number in the second space.

• Now, click on math and select “/2” to divide the width in half.

Writing the function

• This function is going to check and see if the boar is closer than the length of the boar’s width to the bunny.
• In other words, is the boar on top of the bunny?
• Thus we want to return “true” if the boar is on top of the bunny.
• Add this return function to your code.

Writing the function

• Now we need to add a plus arrow and do the same expression over again.

Writing the function

• We will return false in the “else” category.
Writing the function

• Finally, let’s turn the final return to false.

Testing the function

• Now we need to write a method to call this function.
• Let’s go into World.myfirstmethod and drop in an “if statement.”

Testing the function

• Now drop in your “overlaps” function on top of the “if statement.”

Testing the function

• Now we want the boar to say something.
• Let’s have him say, “We are overlapping, how can this be?”

Testing the function

• Now, in the else statement have the boar say, “Checking…we are not overlapping.”
Testing the function

• Now play your world.
• Since the boar is next to the bunny he should say “Checking.....we are not overlapping.”

Testing the function

• Now drag the boar on top of your bunny and play it again.
• The boar should say “we are overlapping, how can this be?”

Finishing up

• You can use functions like this in your Alice worlds to determine if objects in your world are within a certain distance of each other.

• That’s all folks!