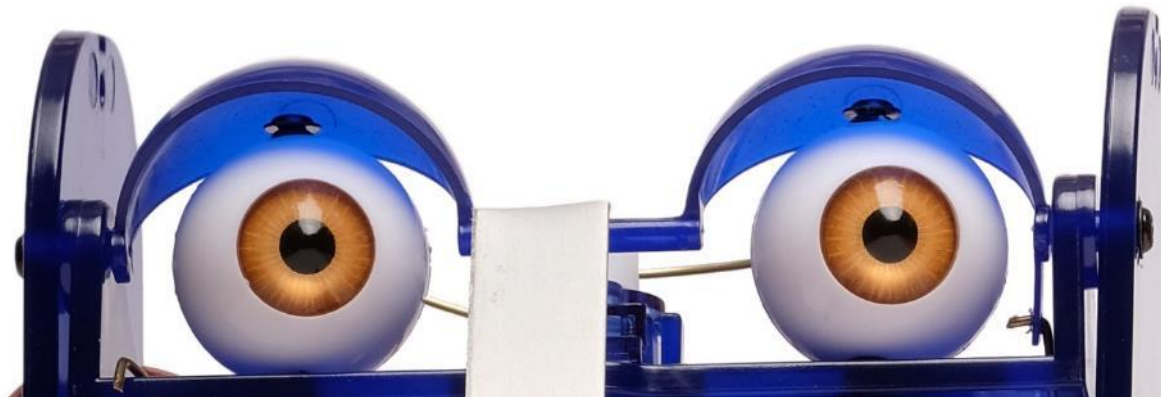




# Chatterbots





# Chatterbots

In this project you'll learn how to code one robot to talk to another one.



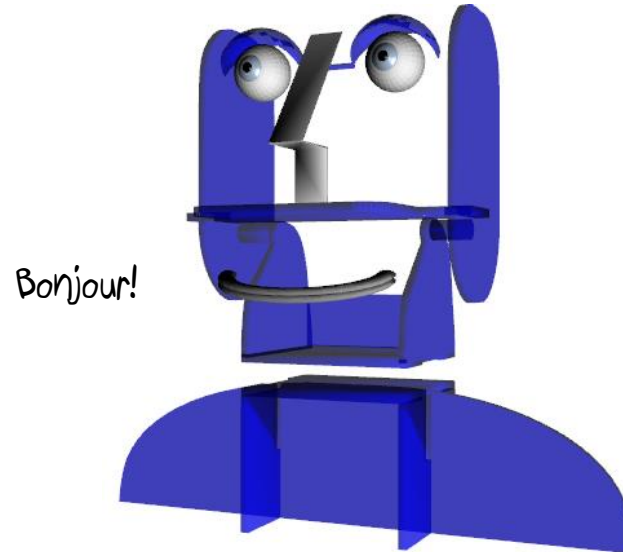
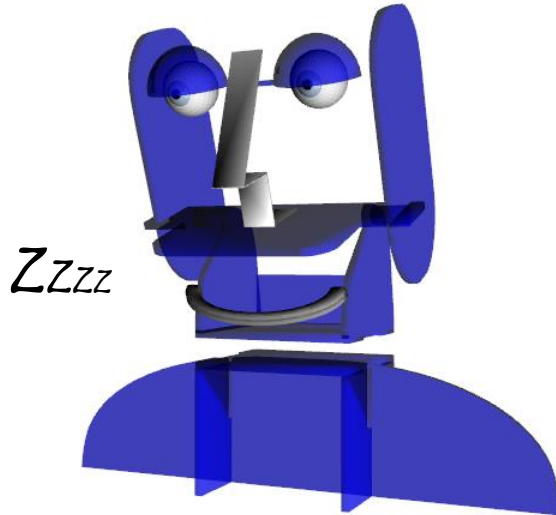
We've split the project into steps:


- Step 1: Wake up, sleepy head
- Step 2: Turning to look at a friend
- Step 3: Chatting
- Step 4: Lip Syncing
- Step 5: A chatting sequence
- Step 6: Blinking
- Step 7: Eye Moves
- Step 8: Smiling and frowning





# Step 1: Wake up, sleepy head



1. press Reset (Ohbot should 'sleep') 
2. Add instructions to make Ohbot open its eyelids when the space key is pressed

```
when space key pressed
  set LidBlink to 0
```

← Try different values between 0 and 10

3. Add another instruction to make Ohbot lift its head too

```
when space key pressed
  set LidBlink to 0
  set HeadNod to 0
```

← Try different values between 0 and 10

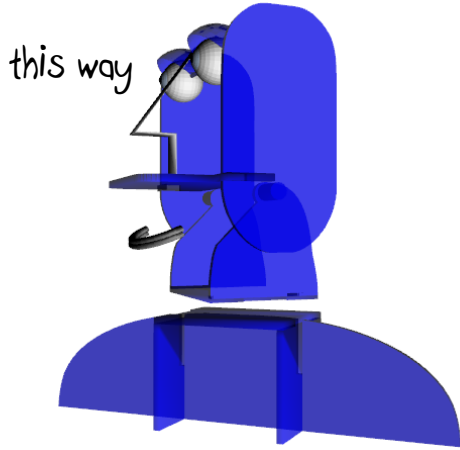
## Done that?

Can you find a way of making Ohbot open its eyes, wait a second then lift its head?  
 Can you make Ohbot wake up slowly? Use reset to return Ohbot to its sleeping position.

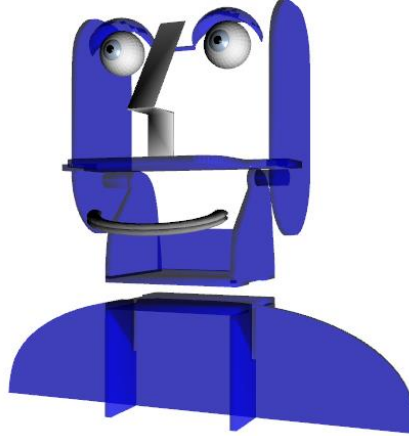




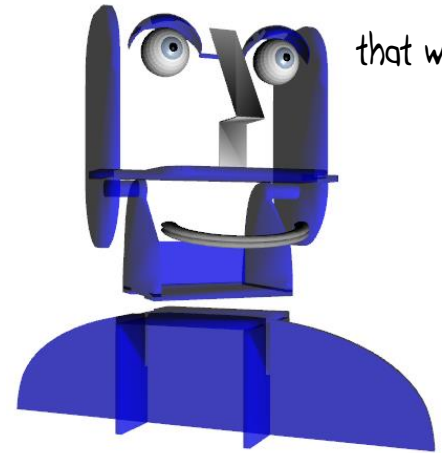
# Step 2: Turning to look at my friend



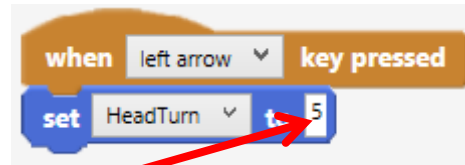
straight ahead



that way



1. Add instructions to make Ohbot turn one way and the other so that it can look at its friend



Try different values between 0 and 10

2. Add another instruction to make Ohbot return to straight ahead when the space key is pressed



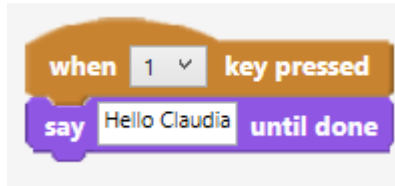
Done that?  
Can you find a way of making Ohbot look up and down too?





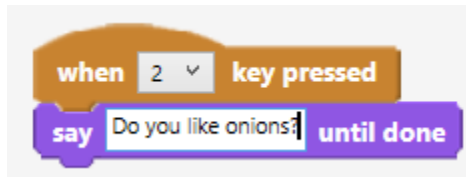
## Step 3: Let's chat

1. Add instructions for a friendly greeting to your robot's friend



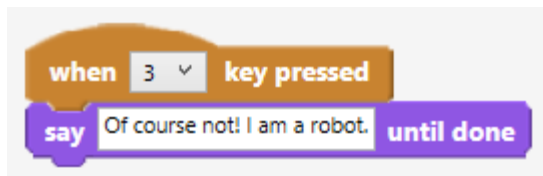
It doesn't have to be Hello! Perhaps robots use a special robot greeting when meeting to each other.

2. Ask a question



Your robot doesn't have to ask about onions!

2. And write a reply to your robot's friend's question!



Who knows how the answer goes?

### Done that?

Can you and your friend make your robots chat by pressing the keys in the right sequence? This way of controlling a robot is sometimes called Wizard of Oz robotics because just like in the film the robot is directly controlled by a human and is not automatic.





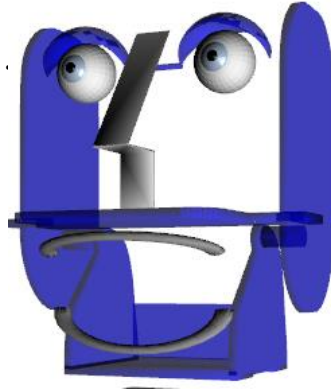
# Step 4: Lip synching - the hard way

1. Make Ohbot open its mouth...

```

when O key pressed
set TopLip to 10
set BottomLip to 10

```

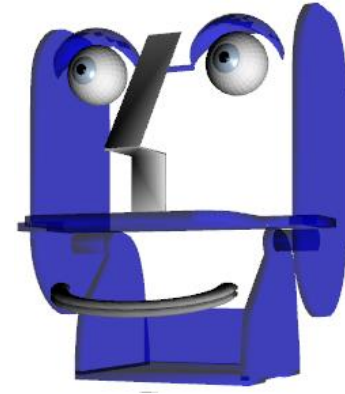


...and close it

```

when C key pressed
set TopLip to 5
set BottomLip to 5

```



2. Add these instructions before and after a Say block to make Ohbot open its mouth before speaking and close it afterwards:

```

when 2 key pressed
set TopLip to 10
set BottomLip to 10
say Do you like onions? until done
set TopLip to 5
set BottomLip to 5

```

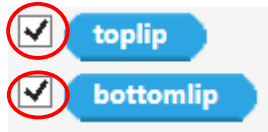
Done that?

Doesn't look too realistic does it? Can you find a way of improving how Ohbot moves its lips when it speaks? We'll show you one way on the next page.

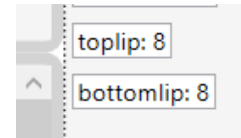
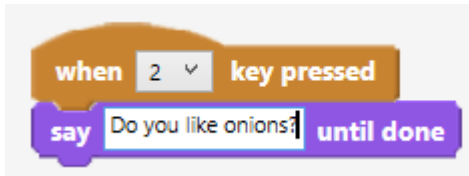


## Step 5: Lip synching - the easy way

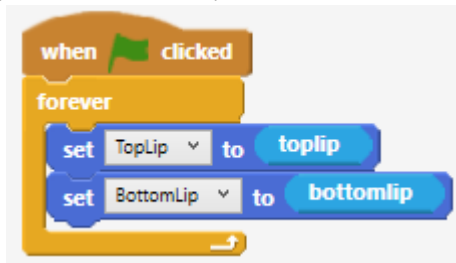
1. put a tick in the box next to the sensor variables for the toplip and bottomlip.



2. Now run a speech instruction and watch the values for the top lip and bottom lip vary



3. Try the instructions below. This will keep setting the position of lips to the sensor values for the toplip and bottom lip.

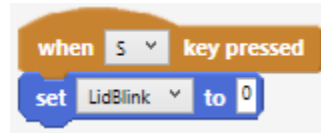






## Step 6: Blinking like you

1. How often do you blink and how long is a blink?
2. Try these instructions to open and close Ohbot's eyelids:



3. Can you make Ohbot blink just like you do?
4. Can you arrange these instructions to make Ohbot blink automatically, just like you?



There's a way of doing it behind here

Done that?

Doesn't look too realistic does it? Nobody blinks every other second for one second! Can you find a way of making Ohbot's blinking more realistic by altering the wait? You could also try using the random instruction:

pick random 0 to 10

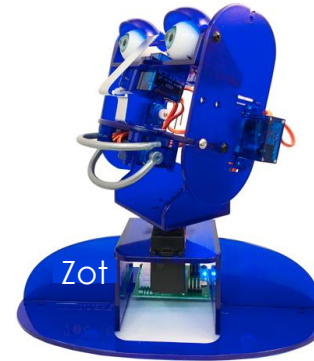
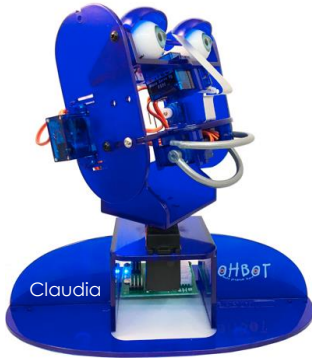






# Step 7: Sequencing Chat

1. Sequence the conversation so that it runs automatically.



```
when 1 key pressed
wait 2 secs
say Oh hi Zot until done
wait 2 secs
say Yes I do. I can eat them all day long. How about you? until done
wait 1 secs
say You don't know what you're missing! until done
```

Try different values (you can use decimals too)

```
when 1 key pressed
say Hello Claudia until done
wait 2 secs
say Do you like onions? until done
wait 2 secs
say Of course not! I am a robot until done
```

2. Add motion instructions to sequence movements too.

```
when 1 key pressed
set HeadTurn to 0
say Hello Claudia until done
wait 2 secs
say Do you like onions? until done
wait 2 secs
say Of course not! I am a robot until done
set HeadTurn to 5
```





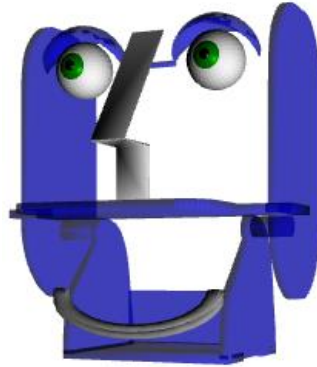
# Step 8: Smiling and frowning

1. Make Ohbot smile

```

when U key pressed
  set BottomLip to 10
  set TopLip to 0

```

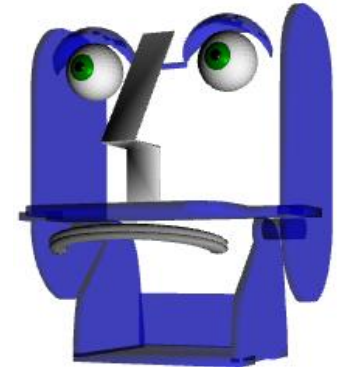


...and frown

```

when N key pressed
  set TopLip to 10
  set BottomLip to 0

```



2. Create a variable

```

Make a Variable
 Lip Sync On
set Lip Sync On to 0
change Lip Sync On by 1

```

3. Add a condition to the forever loop so that the lip sync only works if the variable is set to 1

```

when green flag clicked
  forever
    if Lip Sync On = 1 then
      set TopLip to toplip
      set BottomLip to bottomlip

```

4. Set Lip Sync On to 1 before speech and 0 after it so that you can set the lips to a smile.

```

when 1 key pressed
  set Lip Sync On to 1
  say Hello Cynthia until done
  set Lip Sync On to 0
  set TopLip to 10
  set BottomLip to 0
  wait 2 secs

```

