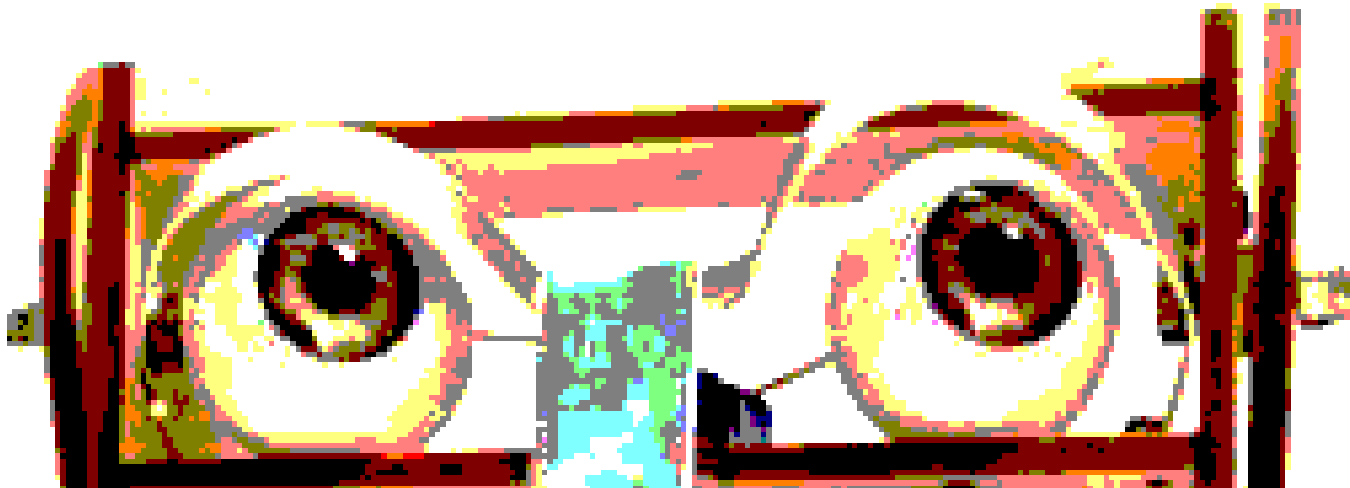# Chatterbots

Chatterbots

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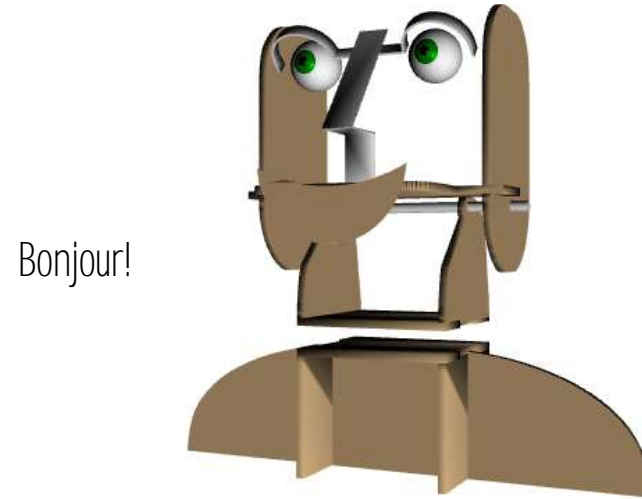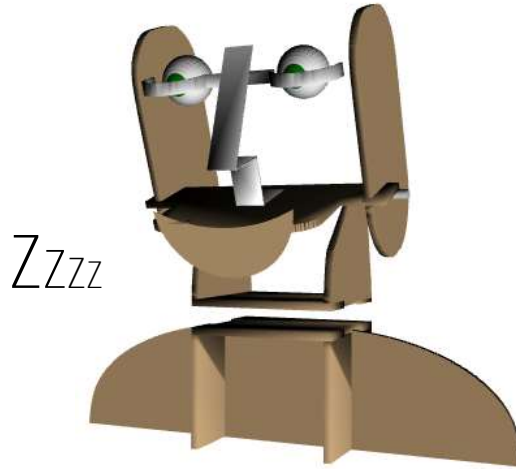
Hi Zot!

Oh, hi there Claudia!

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 Synching
Step 5: Lip Synching again
Step 6: Blinking
Step 7: Putting it all together

Zzzz

Bonjour!

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
```
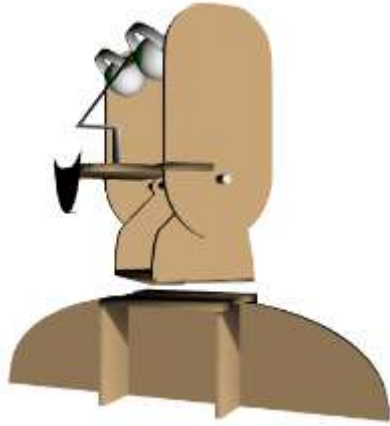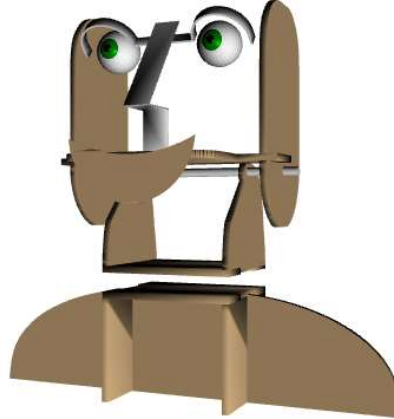← Try different values between 0 and 10

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

this way   straight ahead   that way

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

when right arrow **key pressed**
set HeadTurn to 5

when left arrow **key pressed**
set HeadTurn to 5

Try different values between 0 and 10

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

when space **key pressed**
set HeadNod to 5
set LidBlink to 10
set HeadTurn to 5

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

> when 1 ∨ key pressed
> say Hello Claudia until done

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

2. Ask a question

> when 2 ∨ key pressed
> say Do you like onions? until done
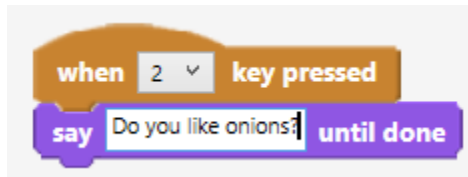
Your robot doesn't have to ask about onions!

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

> when 3 ∨ key pressed
> say Of course not! I am a robot. until done
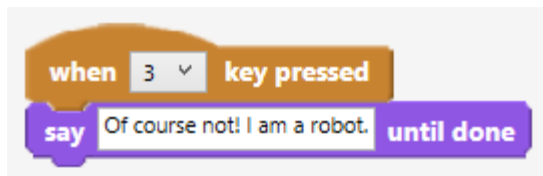
Who knows how the answer goes?

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.
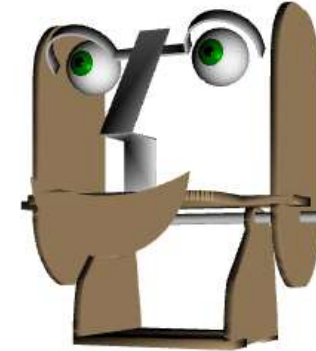
Step 4: Lip synching - the hard way

1. Make Ohbot *open its mouth...*


```
when  O ∨  key pressed
set  MouthOpen ∨  to 10
```

....and close it


```
when  C ∨  key pressed
set  MouthOpen ∨  to 0
```

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  MouthOpen ∨  to 10
say  Do you like onions?  until done
set  MouthOpen ∨  to 0
```

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.
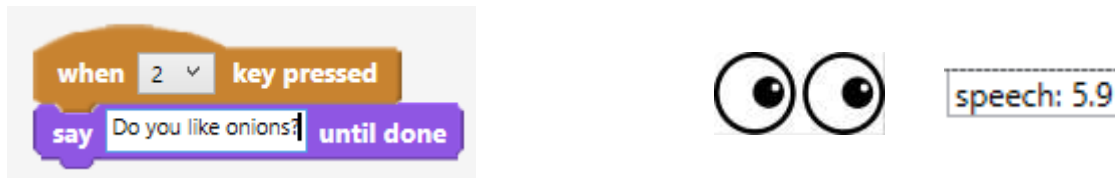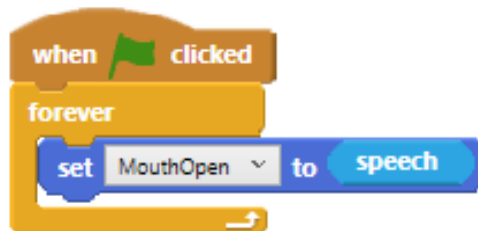
Step 5: Lip synching - the easy way

1. Put a tick in the box next to the sensor variable for speech.

2. Now run a say instruction and watch the value for speech vary

3. Try the instructions below. This will keep setting the position of mouth to the sensor value for the speech.

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:

   when [A ∨] key pressed
   set [LidBlink ∨] to [10]

   when [S ∨] key pressed
   set [LidBlink ∨] to [0]
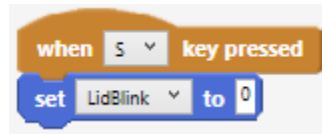
3. Can you make Ohbot blink just like you do?

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

   when [green flag] clicked

   forever

   set [LidBlink ∨] to [10]

   wait [1] secs

   set [LidBlink ∨] to [0]

   wait [1] secs

   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:
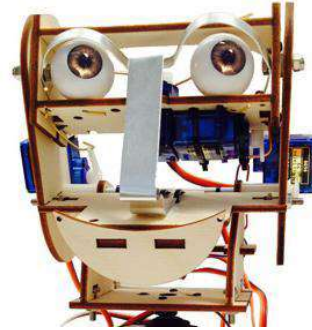
   pick random [0] to [10]

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`