

technocamps

Inspiring | Creative | Fun
Ysbrydoledig | Creadigol | Hwyl



Swansea University
Prifysgol Abertawe



PRIFYSGOL
ABERYSTWYTH
UNIVERSITY



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BANGOR
UNIVERSITY

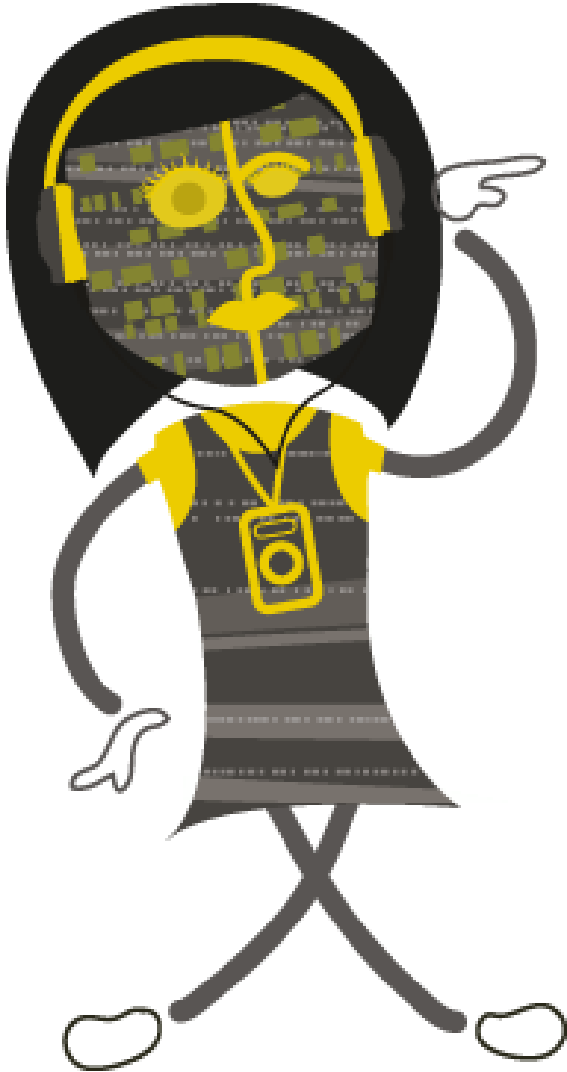
University of
South Wales
Prifysgol
De Cymru



Llywodraeth Cymru
Welsh Government

Ewrop & Chymru: Buddsoddi yn eich dyfodol
Cronfa Gymdeithasol Ewrop

Europe & Wales: Investing in your future
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Pre-Day Questionnaire

About Technocamps

We go around schools like yours and show lots of interesting stuff!



We also do things we call “bootcamps” during holidays!

What is a STEM subject?

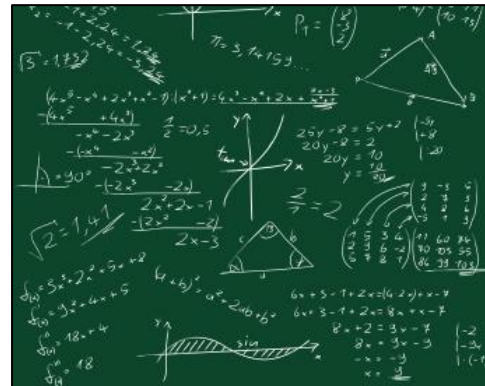
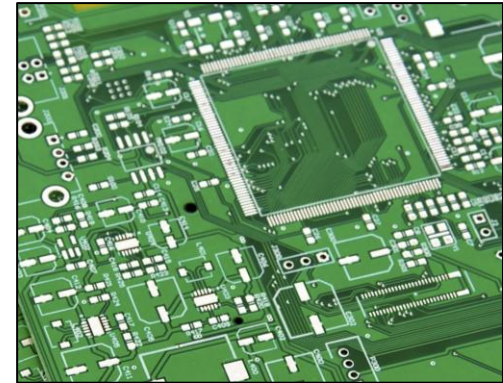
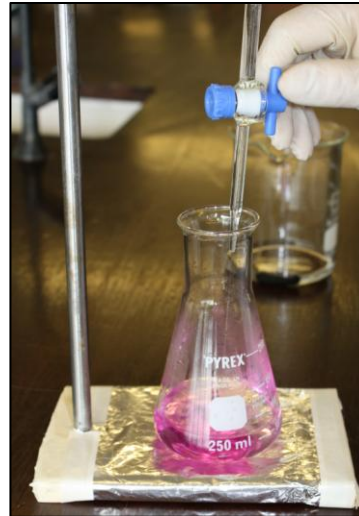
Science

Technology

Engineering

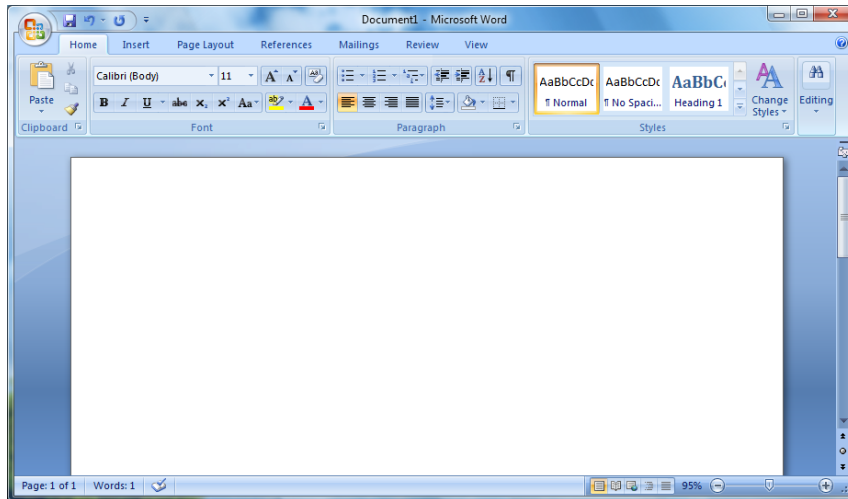
Maths

They all link with
each other!



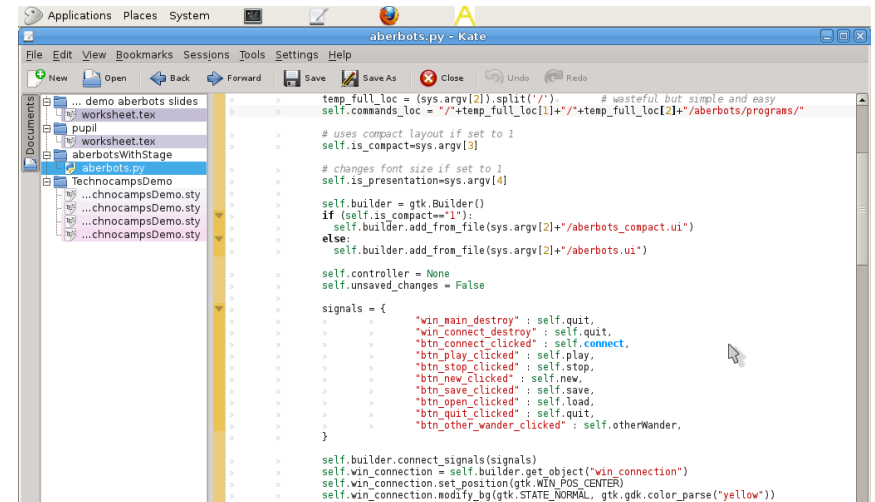
IT vs. Computer Science

Do you know the difference between them?



Information Technology:

Using computers to do things like word processing and spreadsheets



Computer Science

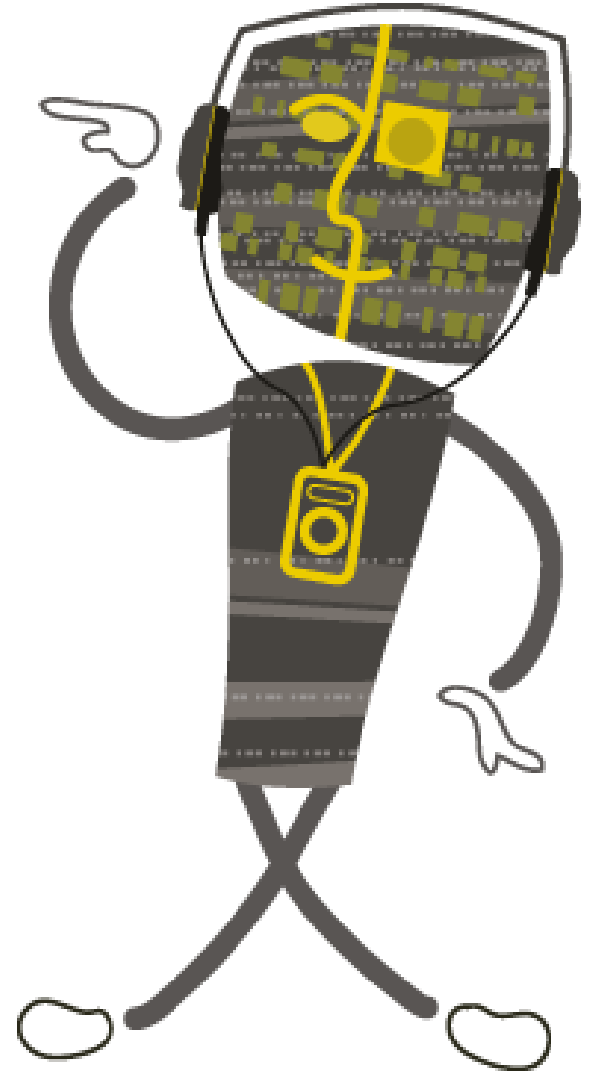
Programming the computer programs and Apps that we use

How do we use computers in our everyday lives?



And much, much more!

Can
computers
think ?



Vote Now!

Do you think computers can be intelligent?



A

Yes

B

No

C

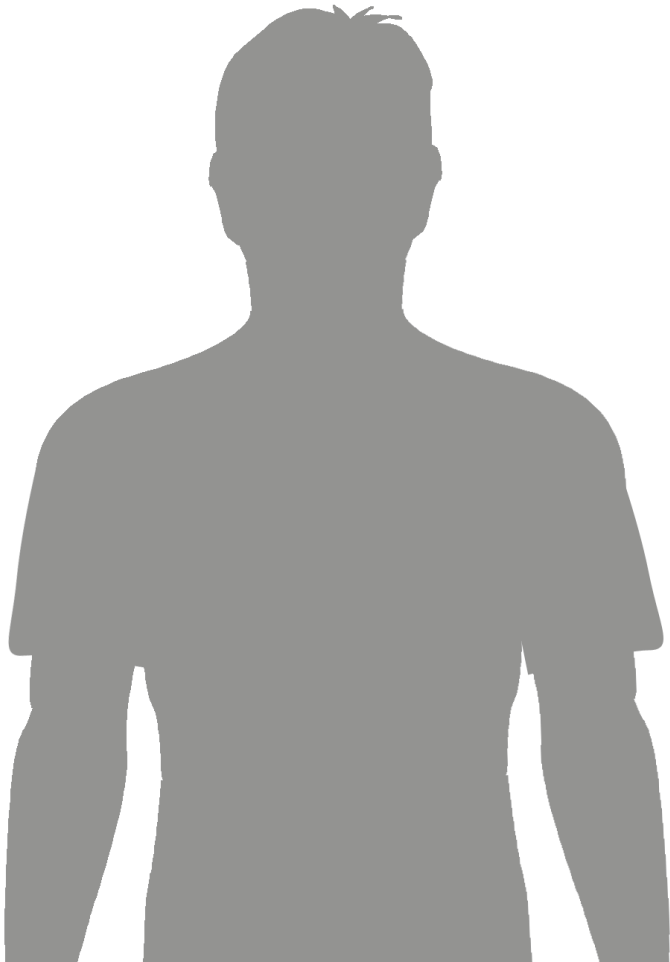
Maybe

We need a volunteer

- Someone who likes chatting
- Someone with plenty to say
- Who's going to go out now with one of the helpers ...



Who are we talking to?



- Are they a schoolkid or an adult?
- What questions should we ask to find out?
- Stick up your hand if you've got a good question...

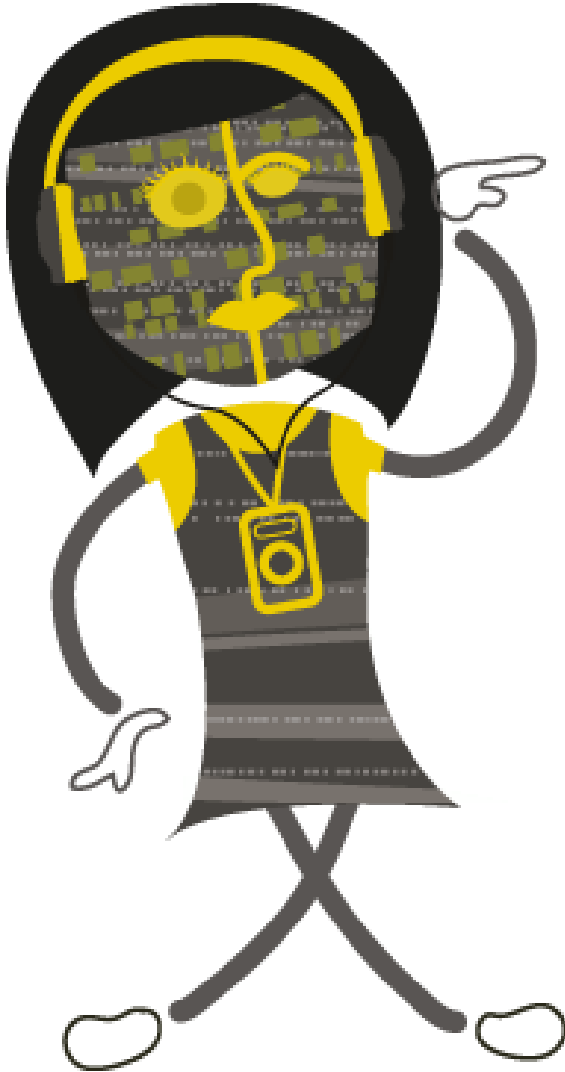
If you don't know the person...

- How can you tell if the person you're talking to is who they say they are?
- Sometimes it is easy...
 - ... just ask them a question only they could answer
- But sometimes you don't have that question
- If you can't tell whether you're talking to an adult or a child
- Maybe you're actually talking with a computer?

Chatbots

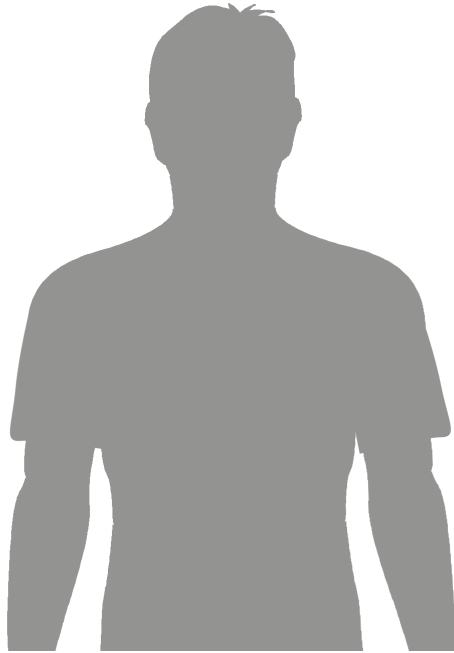
Chatbots are computer programs that can have a conversation:

- There are lots of types of chatbot
- Most you type words into, and they type words back
- Some use speech recognition or speech synthesis to do things that seem more real

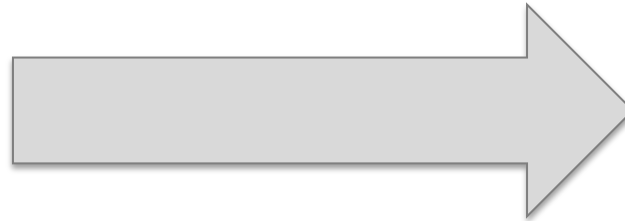


What is intelligence?

What does “intelligent” mean?



You are intelligent
(We know this for sure)



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by [Siim](#)



A rock is not intelligent
(We are pretty sure of this too)

But what about things in-between?

Let's play a game...

What makes some of these things intelligent and some not?

- Can you work out what it is about the things that are Definitely Intelligent that makes them intelligent?
- How about the things that are Definitely not intelligent?
- Are there any things in the middle?

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by [Alex Balan](#)



by [Microbe World](#)



by [Arun Joseph](#)

Some ideas...

- Talking
- Moving
- Reacting
- Repeating things
- Language
- Forming relationships
- Being scared
- Being predictable
- Not communicating
- Not moving
- Emotions
- Being boring
- Memory
- Creativity

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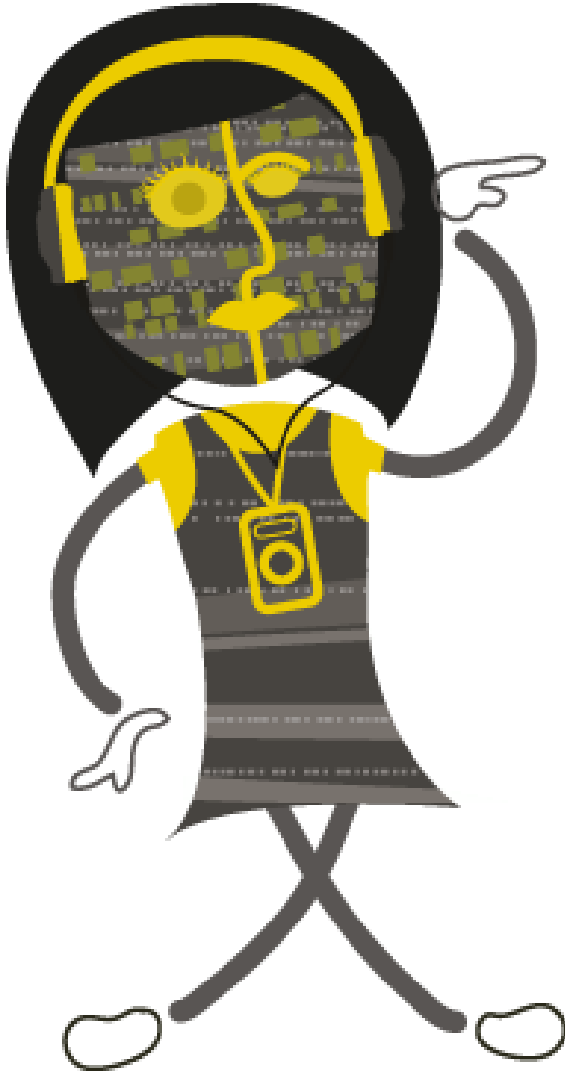
by [Alex Balan](#)



by [Microbe World](#)



by [Arun Joseph](#)



Can
computers be
intelligent?

Could computers be intelligent?

What's the most impressive thing you know a computer can do?



Vote Now!

Do you think computers can be intelligent?



A

Yes

B

No

C

Maybe

Hands up if you think A is a human

A:Are you alive?

J:Perhaps.

A:Why the uncertain tone?

J:Everything is uncertain except for five facts.

A:The whole universe?

J:And we both might just be some ones and zeros in the computer memory.

A:Do you dream?

J:Yes, I dream.

A:It goes without saying.Do you remember your dreams?

J:I remember them vividly.

A:What do you remember about it?

J:I think I shouldn't flirt with a robot.

Can computers be intelligent?

- Alan Turing said that this was the wrong question to ask
- If you can have a conversation with a computer...
... and you can't tell if it's a computer or a human
... then we have to say that the computer is intelligent.



About Alan Turing



- Alan Turing was born 100 years ago this year.
- He was a mathematician, a codebreaker and one of the world's best ever computer scientists
- Every computer you ever use has been influenced by Turing's work
- He died, young, in 1954

The Loebner Prize

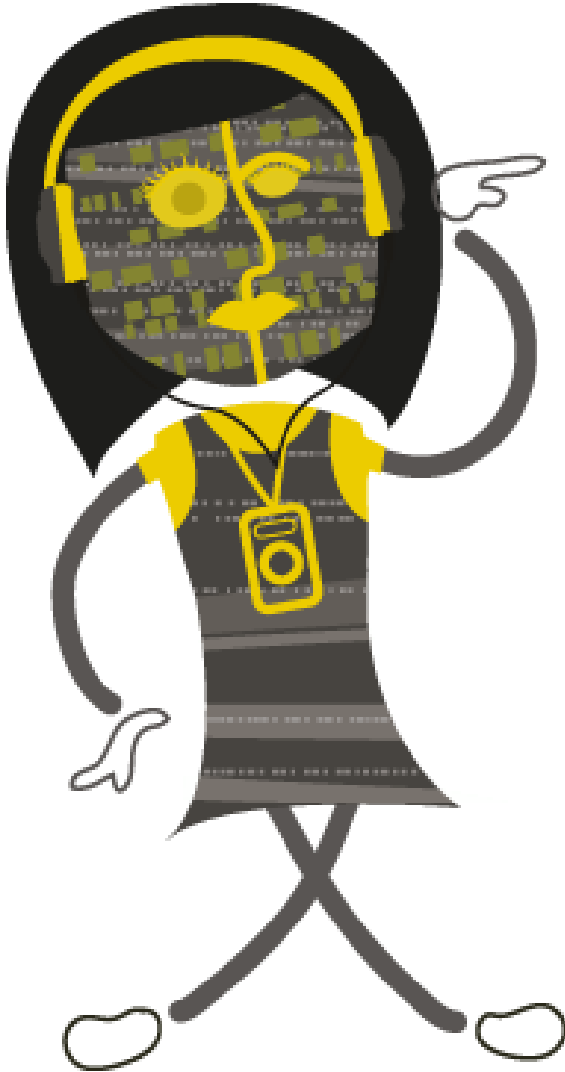
- Every year there is a contest to find the **best chatbot**
- This year the contest was at **Bletchley Park** (as part of the Turing 2012 celebrations)
- The winner is the “most human” computer program
- They also give a prize for the “Most human human”!



<http://loebner.net/Prizef/GoldPrizeHGL.jpg>

2012 prizes:

US\$ 5000 + Annual Bronze Medal
 Second Prize US\$ 1000
 Third Prize US\$ 750
 Fourth Prize US\$ 250



Test Chatbot intelligence

What are good questions to ask a computer program?

Imagine you get to talk to one of these computer programs

- How would you trip it up?

Come up with 3 questions to ask a chatbot:

Try to think of questions that will help you work out if it is a program or a real person.

Jabberwacky

Jabberwacky is a chatbot you can try out now.

<http://www.jabberwacky.com/>

- Try out your three questions
- Note down if it says anything silly or unusual
- Try having a normal conversation with it.

jabberwacky.com

Cleverbot

Cleverbot is another chatbot you can try out now.

<http://cleverbot.com/>

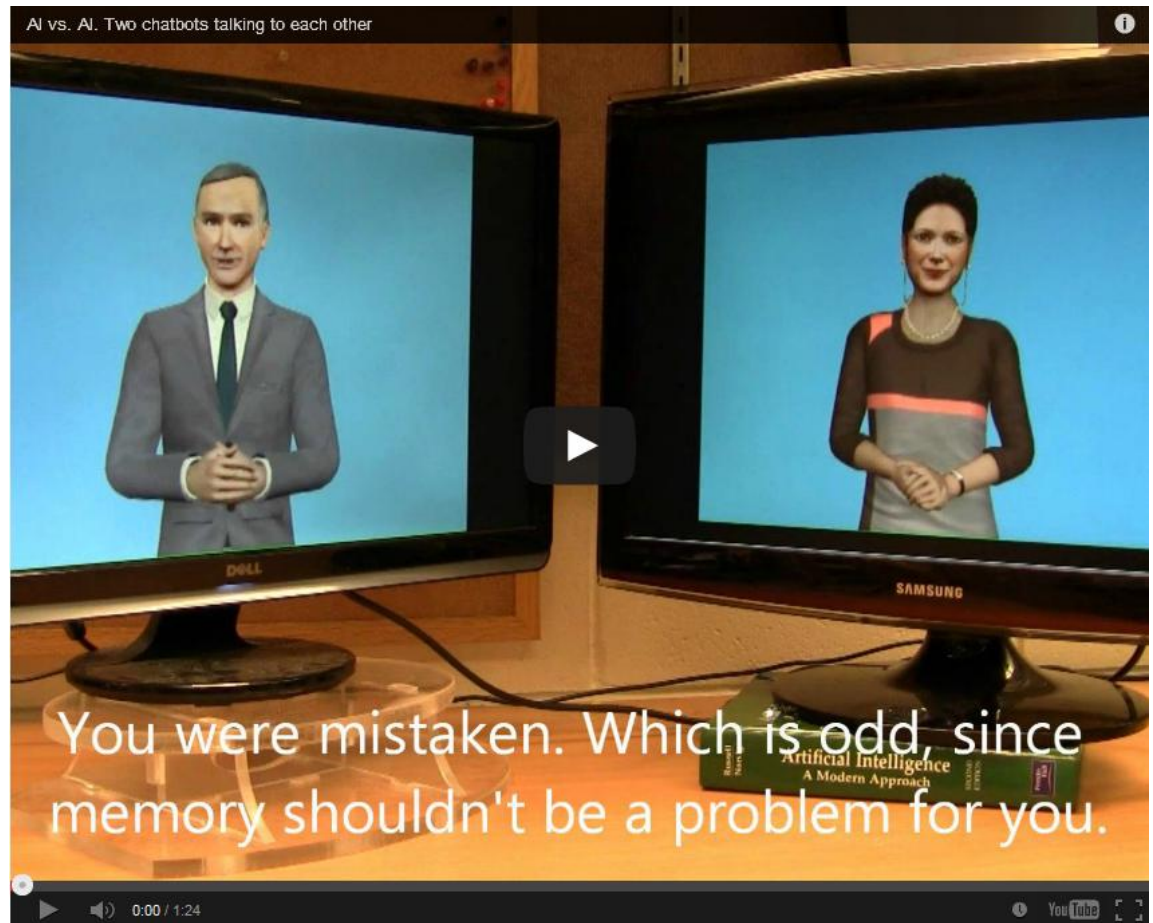
- Try out your three questions
- Note down if it says anything silly or unusual
- Try having a normal conversation with it.



Cleverbot vs Cleverbot

Here's another example of a chatbot vs a chatbot:

Would you be convinced you were talking to something intelligent if you chatted with either of these ?



<http://www.youtube.com/watch?v=WnzlbYsQY>

How did that go?

- What was the best question you asked?
- Who's cleverer, **Cleverbot** or **Jabberwacky**?
- Could you have a normal conversation with either of them?



Vote Now!

Do you think computers can be intelligent?



A

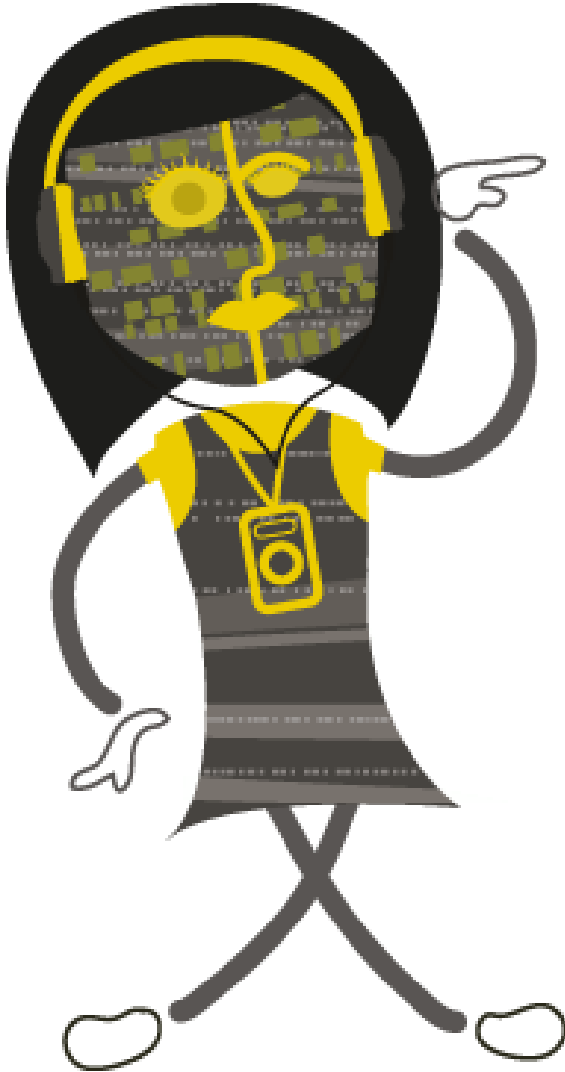
Yes

B

No

C

Maybe



Program your own Chatbot

Now it's time to program your own!

You'll get a chance to put in any sentences you like in a minute but to start with let's all put in the same things:

Input: Do you like pizza ?

Response: Yes I think pizza is delicious

It's **very** important to spell things carefully as the chatbot will not work with spelling mistakes

Responding to lots of input

Input: `alright *`

Response: `Alright mate`

* is a wildcard, and means the chatbot will take anything in the place of the asterisk

Try this now – if you type “alright fish” or “alright idiot” the chatbot should respond with “alright mate”

Using the question in the answer

Input: I like *

Response: I like <star/> too

* is a wildcard, but you can also get the chatbot to remember what was there and use it. If you try this input/response pair you should get...

You: I like cheese

Chatbot: I like cheese too

You: I like football

Chatbot: I like football too

Giving a range of answers

Input: do you want one or two

Response: <random>

One please

Two please

</random>

This gives a random choice of responses from a list

So sometimes when you say “do you want one or two?” to your chatbot it will say “One please” and other times “Two please”.

Remember your three questions from earlier?

- Program your Turi chatbot so that it can answer those as well

Now program it to say what you like...

Vote Now!

Do you think computers can be intelligent?



A

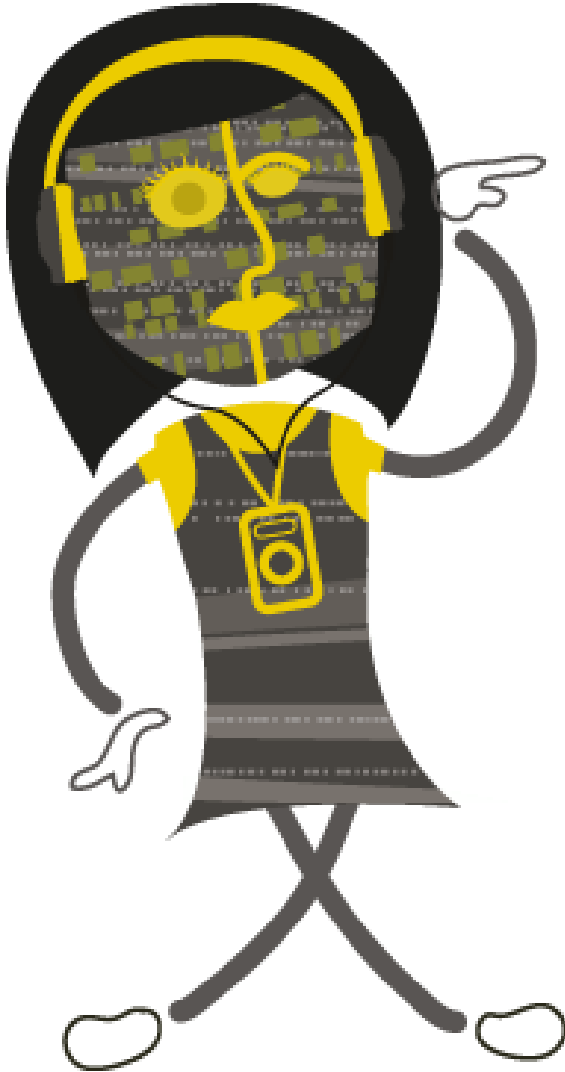
Yes

B

No

C

Maybe



Rule Following

Swap chatbots with the person next to you

- Can you have a conversation?
- Does it make sense?



Is rule following enough?

- When you programmed the chatbot just now, you wrote a set of rules and it followed them...
...Given some input it gave an output
- When humans speak there is something that goes on in between input and response (most of the time!)
- What do you think that is ?

Try following some rules

- We need a volunteer to be a robot
- Can you program this robot to walk around the room?
- Use instructions like:
“Go forwards a step”
and
“Turn right 90 degrees”



ASIMO

The Worlds most
Advanced
Humanoid Robot
created by Honda

[http://www.youtube.com/
v/JHwgBitYMIA](http://www.youtube.com/v/JHwgBitYMIA)



Chatbots don't have bodies

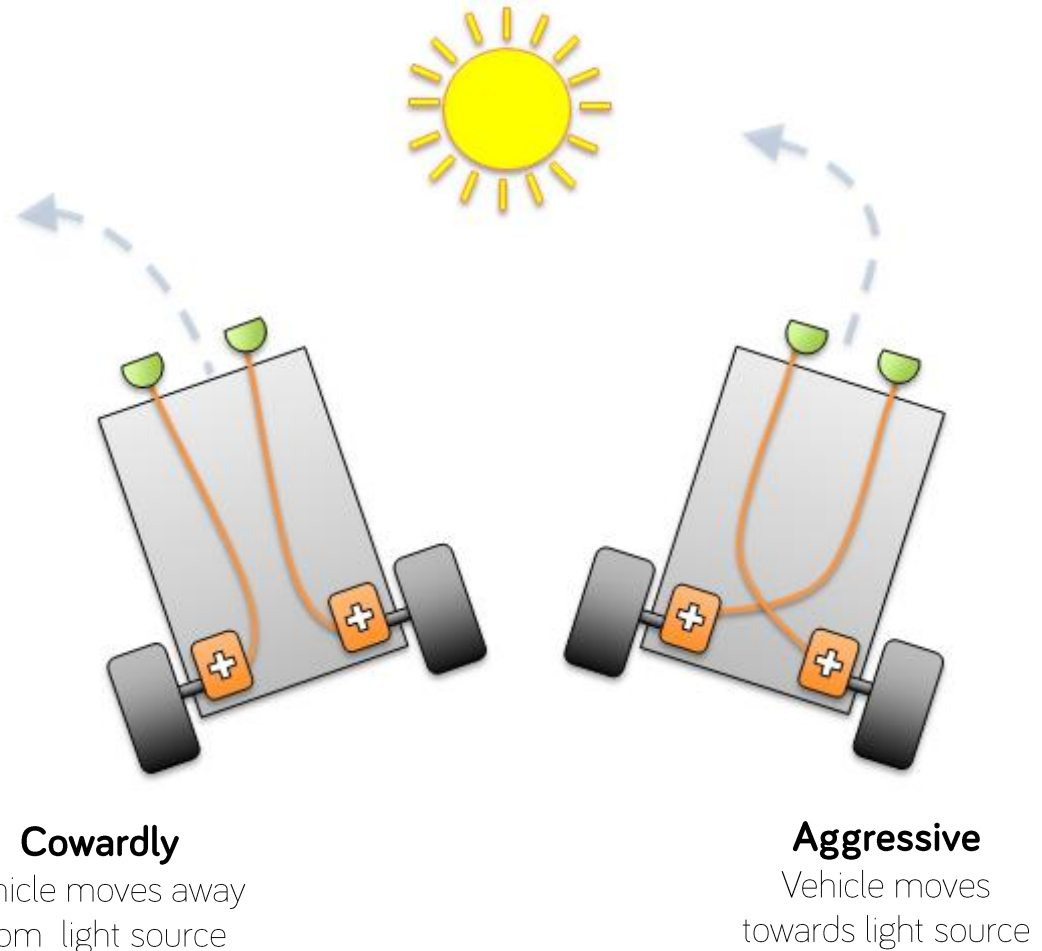
- They don't see things or move around...
... Some of them can learn things though
- Does having a body make things different?
... Are robots more intelligent?



Braitenberg Vehicles

Vehicles with simple connections between sensors and motors can seem to have remarkable properties

- Alive
- Cowardly
- Aggressive
- Exploring
-



Vote Now!

Do you think computers can be intelligent?



A

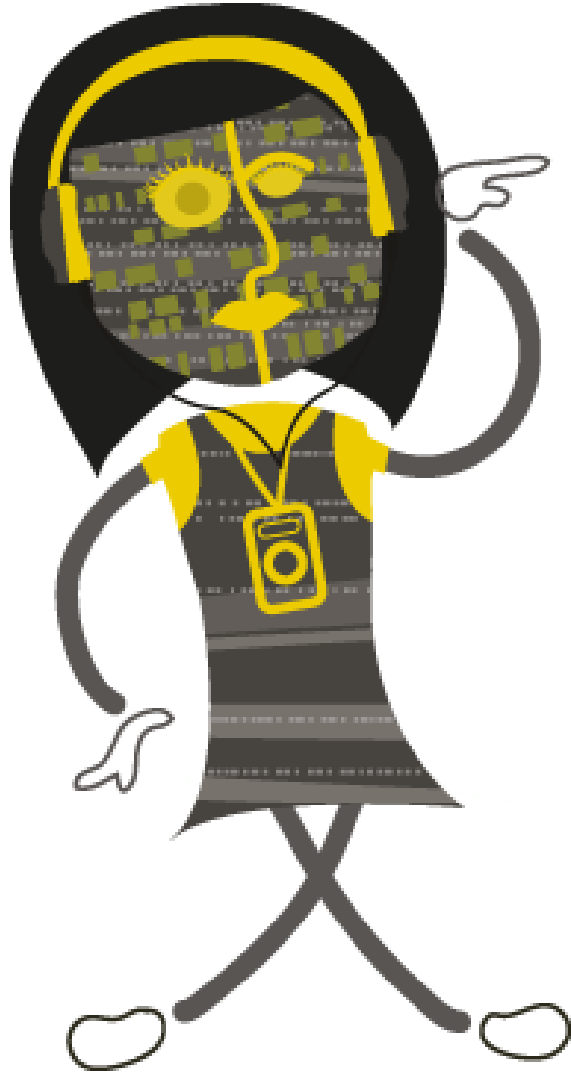
Yes

B

No

C

Maybe



Post-Day Questionnaire