# Binary Coding

## Secret behind Digital Technology

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# Problem solving tool!?



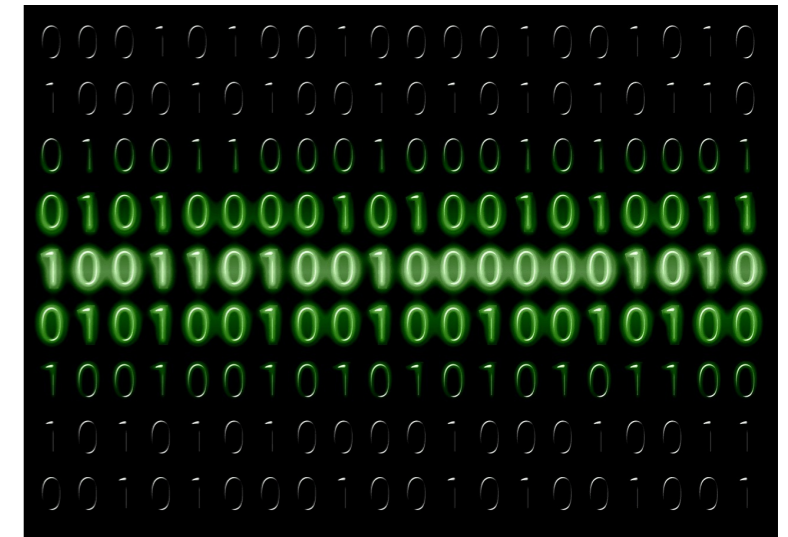Health education campaigns help people to be aware of the need for hygiene.

# Demystifying the *magic* behind the box

"Computer science is no more about computers than astronomy is about
telescopes, biology is about microscopes, or chemistry is about beakers and test tubes.
Science is not about tools. It is about how we use them..." M.R. Fellows and I. Parberry,

# *Binary Coding – Computer's own language*

- 1 computer is on
- 0 computer is off
- 1 Bit – represents on or off (1 or 0)
- 1 Byte – represents 8 bits
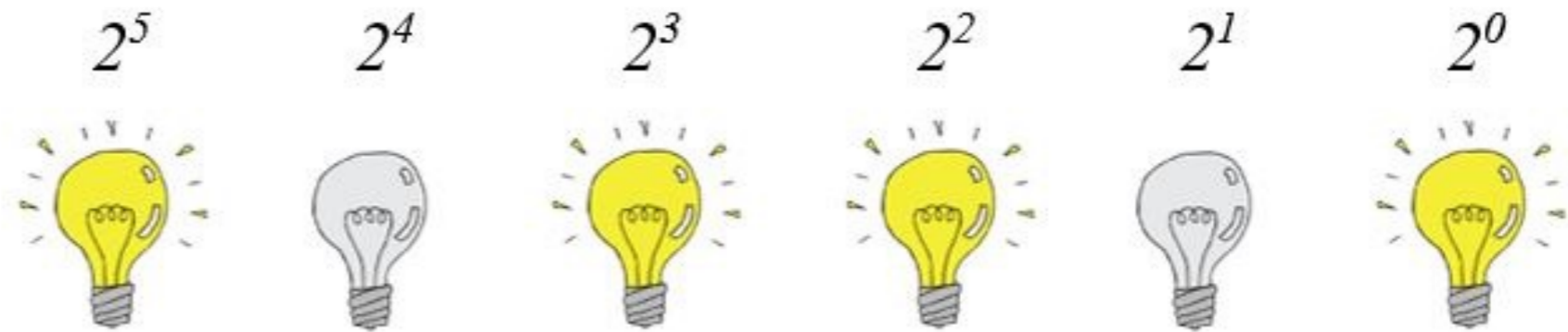- The combination of 1s and 0s, represents numbers and letters

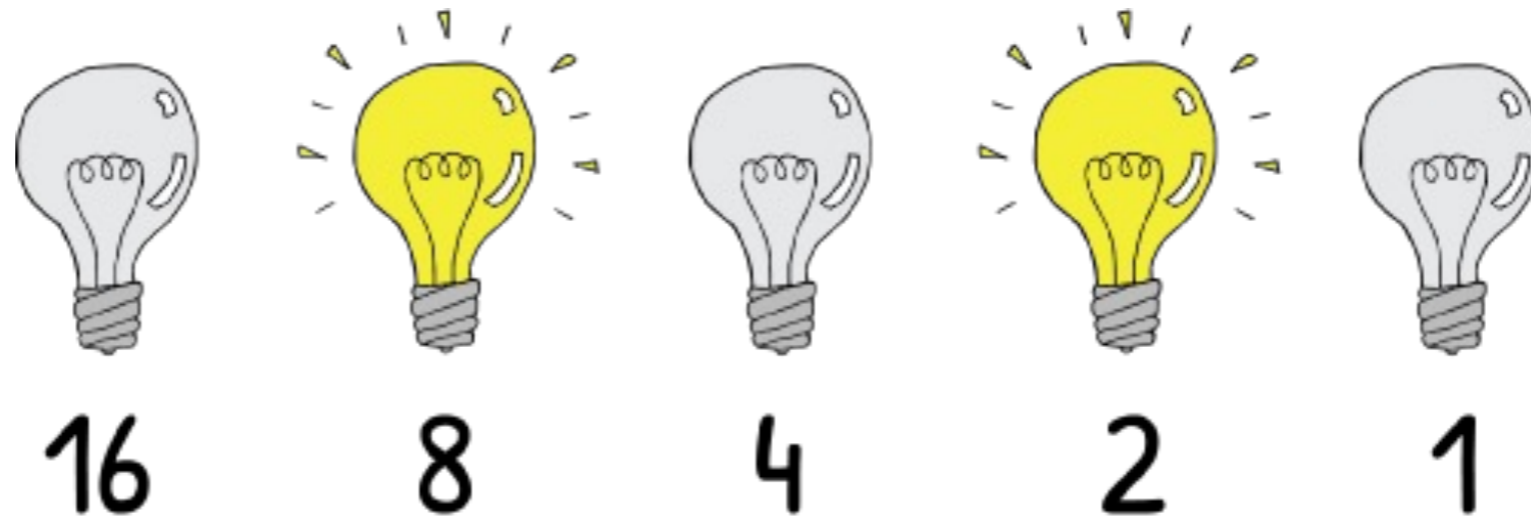# Difference Engine (Charles Babbage)

# Binary numbers

- Base of 2

$$2^5 \qquad 2^4 \qquad 2^3 \qquad 2^2 \qquad 2^1 \qquad 2^0$$

# What number is represented?
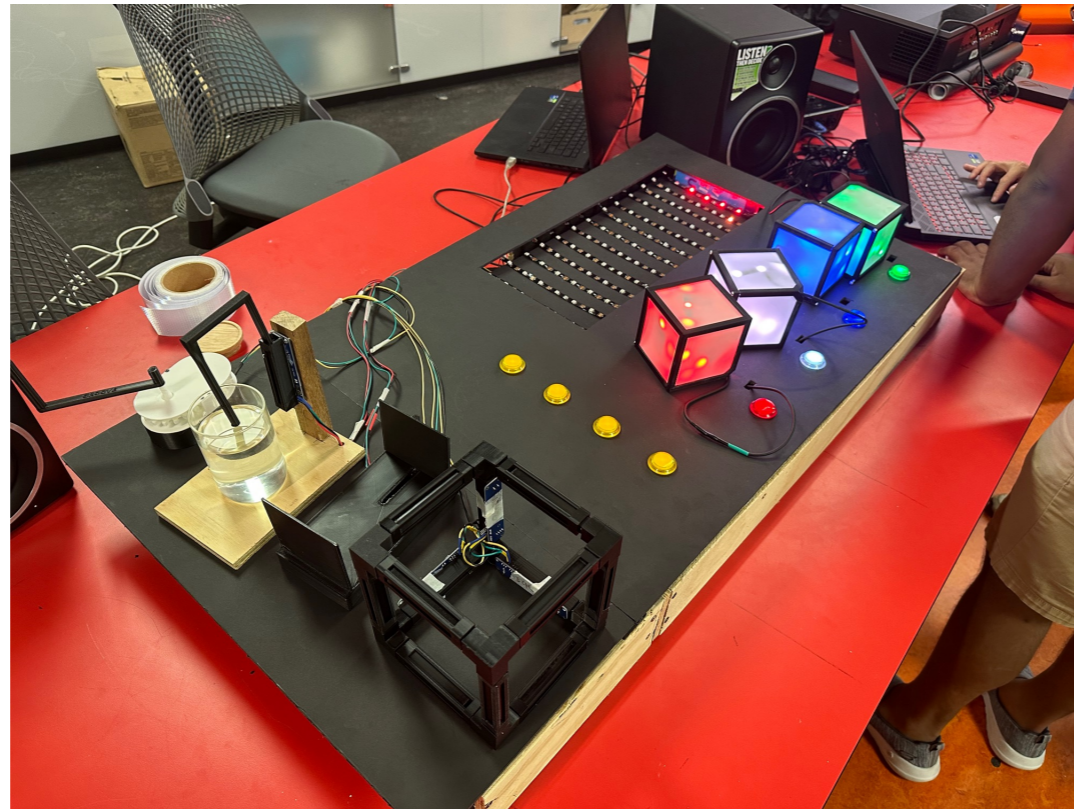


16    8    4    2    1

8+2=10

# Activity

- Work in pairs –
  Can you figure out what number your friend has coded in binary code?

- Work in pairs –
  Send a secret word in binary to your friend, can they unravel what you sent them?

- Make a bracelet with your initials in binary code.

# Student projects

72864295399400
534940578642 9
295 sometimes 95
89465786429 50
389405786429 5
64 all5 you4 need 8
578642953940 5
40578642953 94
523942 is 7 1 64295
94057864295 39

Student work from our Visualisation course.

Task was to visualise a sentence

# Student projects

https://ixd-exhibit.uqcloud.net/teams/groove/

Student work from Physical Computing course.

Groove is a new kind of music mixing board, being creative with physical form.

# Takehome message

Computer Science and Computing is:

- ability to understand and model reality

- problem solve in creative and efficient ways

- support the daily lives of billions of people

# Bachelor of MULTIMEDIA DESIGN

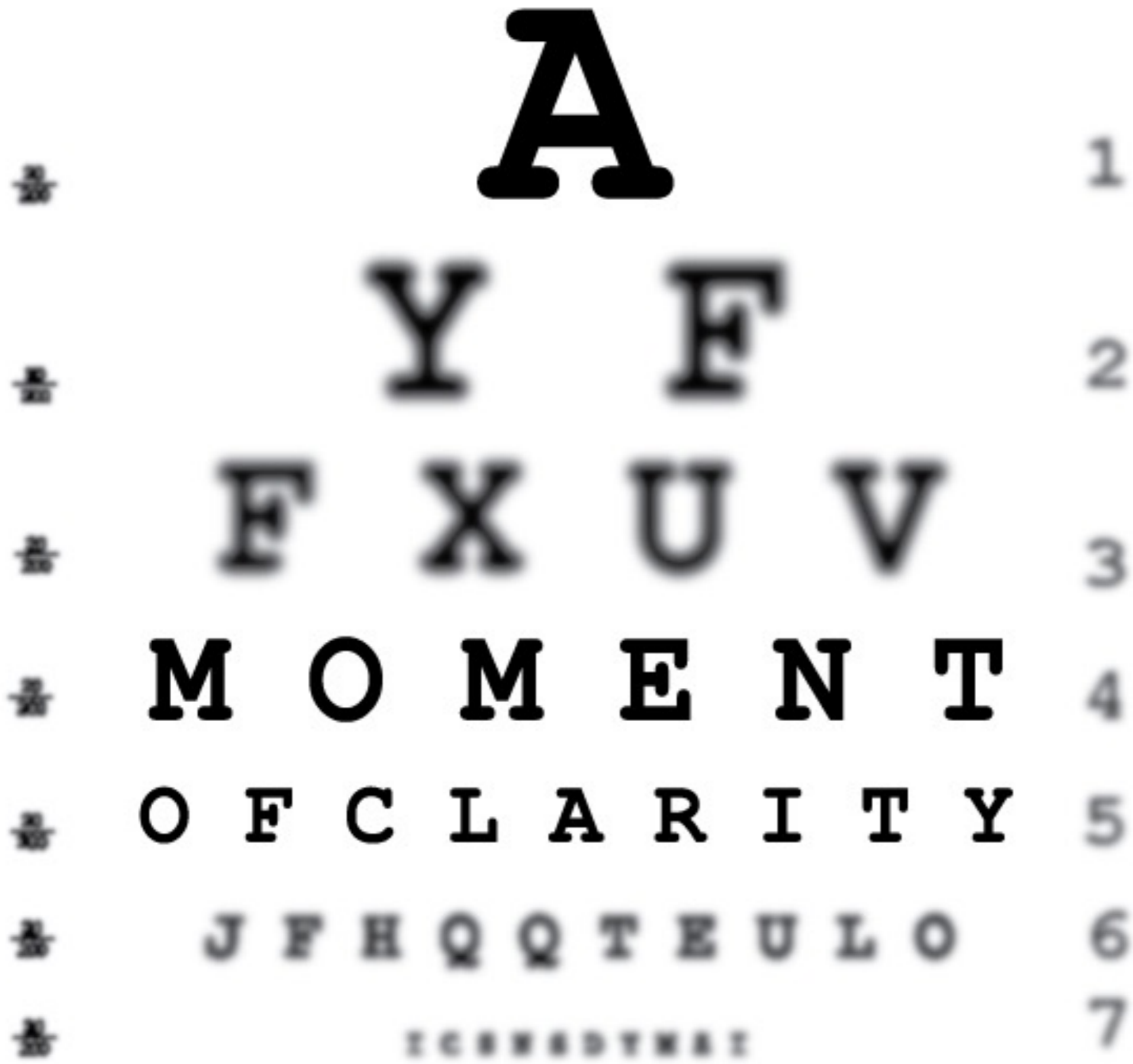Student work from the Graphic Design course.

Visual Sentences:

This project asked students to produce a visual response to a sentence that would depict the meaning &/or emotion of that text through line, shape, text, colour & layout.

Hugh Francis

# Contributions to the world

- Proving the threat of global warming to skeptics

- Unraveling the mysteries of the human gene

- Helps us understand history

- Allowing small business to reach global markets

- Medical diagnosis and drug development

- Revolutionizing media and communications

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# Bachelor of MULTIMEDIA DESIGN

Student work from the Graphic Design course.

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This project asked students to produce a visual response to a sentence that would depict the meaning &/or emotion of that text through line, shape, text, colour & layout.

Chris Anthony

What do you think?

Do you want to join us here @ UQ ☺

Thanks!