

01100110 01100001 01101101 01101111
01110101 01110011 00100000 01100011
01101111 01101101 01110000 01110101
01110100 01100101 01110010 00100000
01110000 01110010 01101111 01100111
01110010 01100001 01101101 01100101
01110010 01110011

102 097 109 111

01100110 01100001 01101101 01101111

117 115 032 099

01110101 01110011 00100000 01100011

01101111 01101101 01110000 01110101

111 109 112 117

01110100 01100101 01110010 00100000

116 101 114 032

01110000 01110010 01101111 01100111

01110010 01100001 01101101 01100101

112 114 111 103

01110010 01110011

114 097 109 101

114 115

famous computer programmers

| | | | | | | | |
|-----|-----|-----|-----|----------|----------|----------|----------|
| 102 | 097 | 109 | 111 | 01100110 | 01100001 | 01101101 | 01101111 |
| 117 | 115 | 032 | 099 | 01110101 | 01110011 | 00100000 | 01100011 |
| | | | | 01101111 | 01101101 | 01110000 | 01110101 |
| 111 | 109 | 112 | 117 | 01110100 | 01100101 | 01110010 | 00100000 |
| | | | | 01110000 | 01110010 | 01101111 | 01100111 |
| 116 | 101 | 114 | 032 | 01110010 | 01100001 | 01101101 | 01100101 |
| | | | | 01110010 | 01110011 | | |
| 112 | 114 | 111 | 103 | | | | |
| 114 | 097 | 109 | 101 | | | | |
| 114 | 115 | | | | | | |

Computers and Code

We know that:

- codes are used in computing
- when you program a computer it's called "writing code"
- data stored on computers all has to become numbers
- those numbers end up as binary numbers - 1s and 0s

Computers and Code

This lesson is all about the people who helped us get to the sort of computers we have today.

You might have heard of some of them. You've used things that rely on ideas from all of them.

Computers and Code

Task 1:

Write a short **biography** of each of the five famous computer scientists

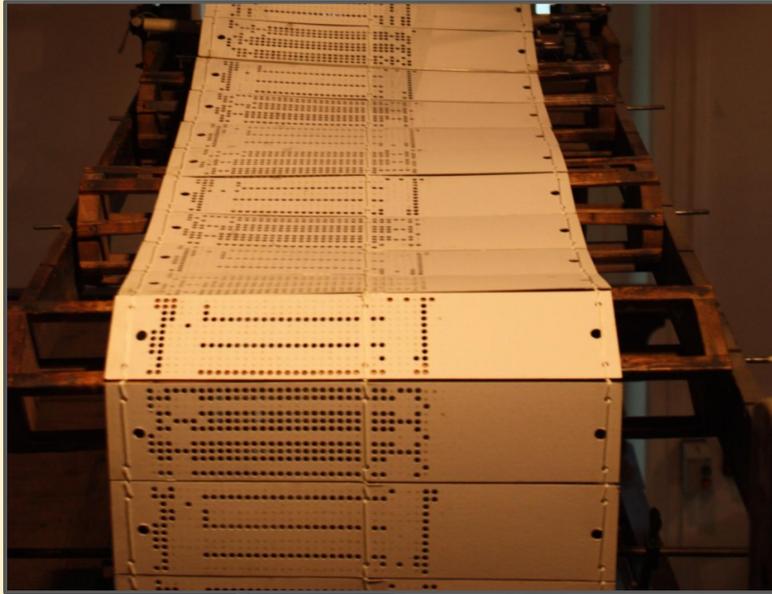
Task 2:

Find out about the 3 machines - Jacquard Loom, Difference Engine and Colossus

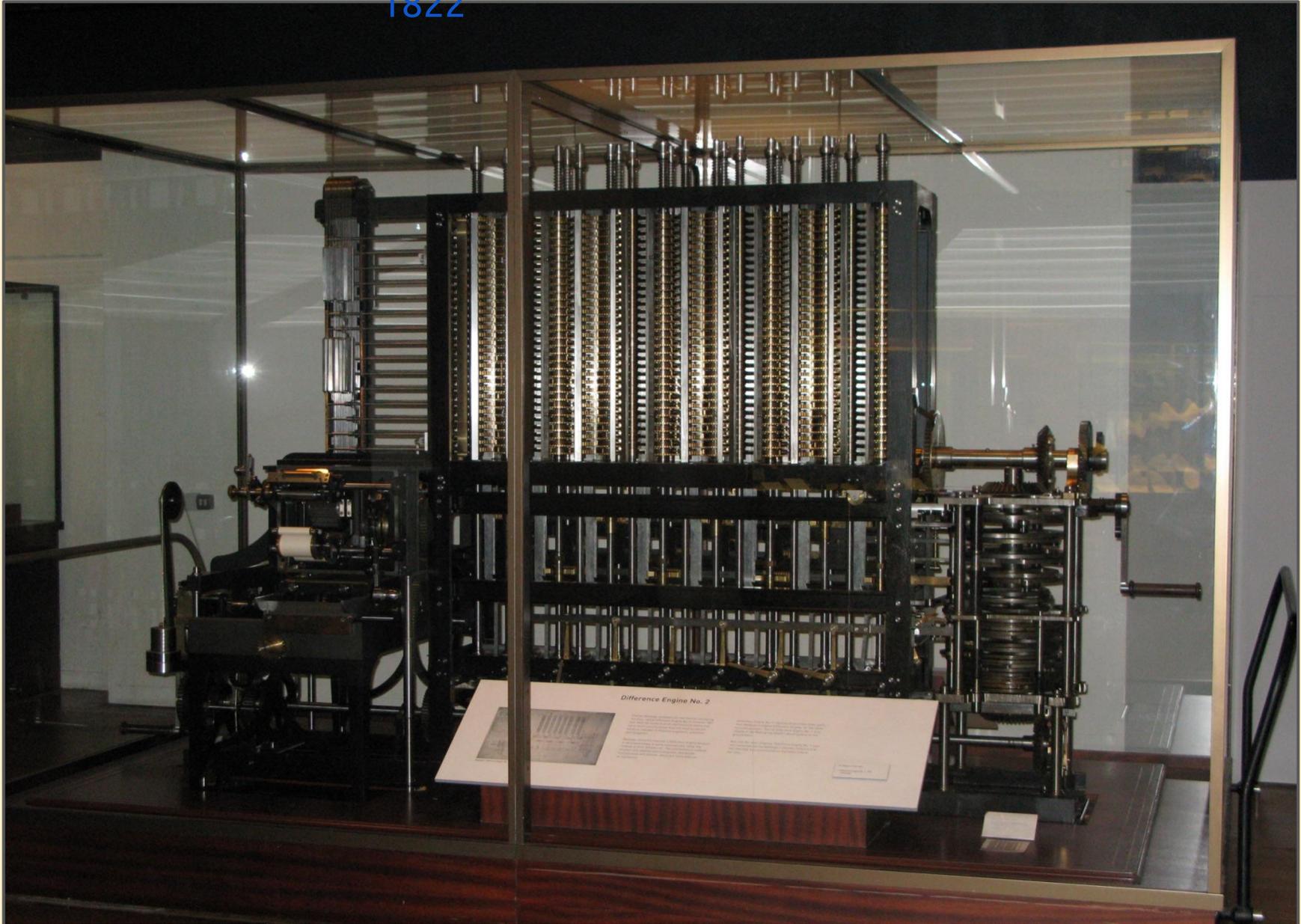
Task 3:

Add another computer scientist of your choice to the biographies

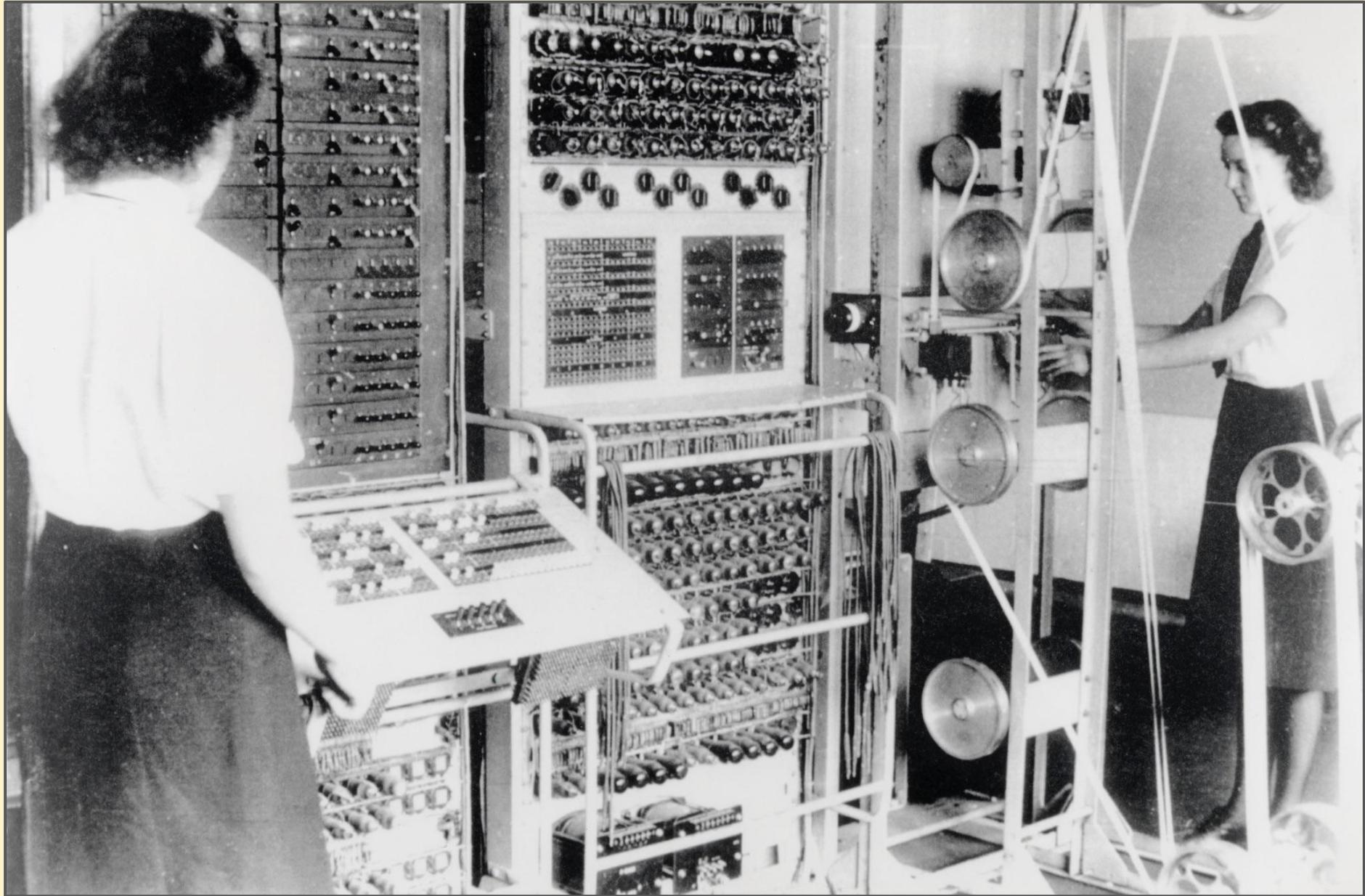
Jacquard Loom - 1804. Used punched cards

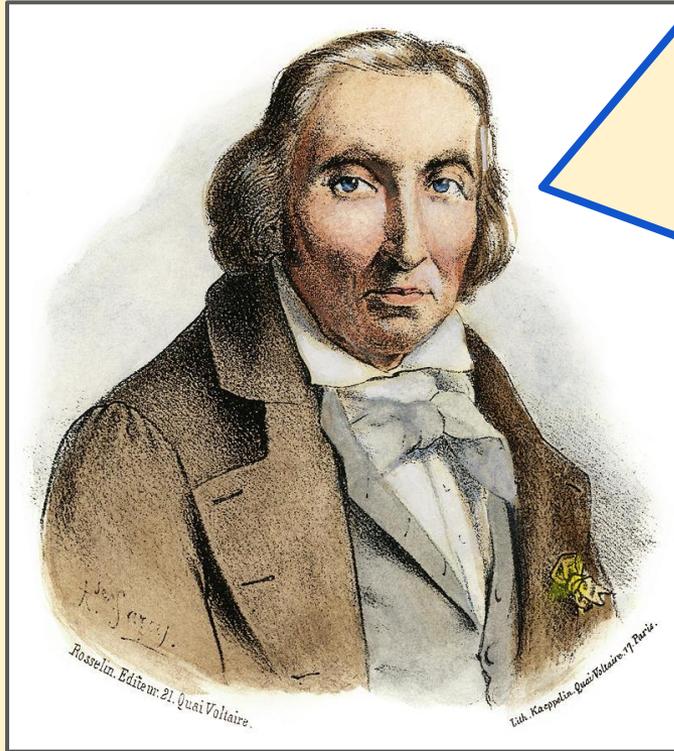


Difference Engine - designed by Charles Babbage in 1822



Colossus - 1943. Used for code breaking.





Bonjour! My name is **Joseph Marie Jacquard** and I am French. I was born in 1752 in the town of Lyon and died in 1834. There were 9 children in my family but only two of us, me and my sister, lived until we were adults.

I invented a new way of making cloth using a machine called a loom. I worked out how to control the loom using something a bit like the thing you call a computer.

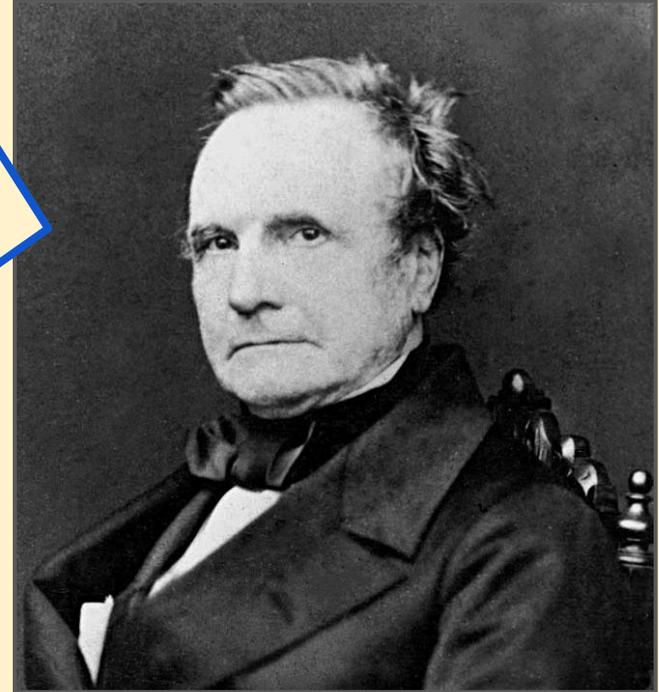
It used cards with holes in to tell the loom what to do, which made making cloth much quicker and meant every piece of cloth was the same.

My method of using cards, helped Monsieur Babbage and Madame Lovelace to come up with the idea for their Analytical Engine. Cards like mine were still used in computers until the 1980s you know. Très retro.

My name is **Charles Babbage** and I was born in London in 1791 and died in 1871. Some people call me the “father of computing”.

Why? Well in 1822 I invented something called a Difference Engine to make doing maths much quicker and easier. This was a machine, you see, so it could do lots of calculations very quickly. Just like those computers you use. But my machine had to be worked by turning a handle.

Then I worked with Countess Ada Lovelace to develop the ideas for an Analytical Engine. We never quite managed to build one of those, but Countess Lovelace thought it could do all sorts of interesting things. It would have used those cards that Monsieur Jacquard used in his loom to tell the machine what to do.





Hello there. My name is **Ada Lovelace**. That's Countess Ada Lovelace to you. My father was a famous Lord and I was born in 1815.

I worked with Mr Charles Babbage to work out how the Analytical Engine would work. Some people say that I was the real brains behind the ways we could use it. There was so much more that it could have done other than just doing maths.

I was only 36 when I died in 1852 but I left behind a set of notes with algorithms in that people think are important. They say that I wrote the first proper algorithms down and those are the things your computers use.

Hi there. My name's **Grace Hopper**, and I was born in New York City in the United States of America in 1906. I was a Professor of Maths at a university and joined the Navy in World War 2.

I worked out a way of programming computers using words that you might use every day rather than binary code and switches. It's so much easier and makes it possible to write computer programs that work on any computer.

It was in the Navy that I developed lots of my ideas. They found all sorts of ways to use them - cracking codes and controlling machines and all sorts. I died in 1992 at the age of 85 and, you know what? The Navy even named a ship after me!





I am **Alan Turing**. I was born in London in 1912 and at school I found it easy to solve problems. I studied maths and came up with the idea of a “universal computing machine”. I suppose it was a bit like the one Babbage and Lovelace had for their Analytical Engine.

During World War 2 I worked on code breaking using early computing machines. We managed to break the German codes which, they say, saved a lot of lives and made the war shorter.

The machine we used was called Colossus because it was so powerful. There were an awful lot of people involved, and I suppose that I’m the one everyone remembers, although it was actually a chap called Tommy Flowers that designed Collosus. I died not long after the war in 1954 aged 41.