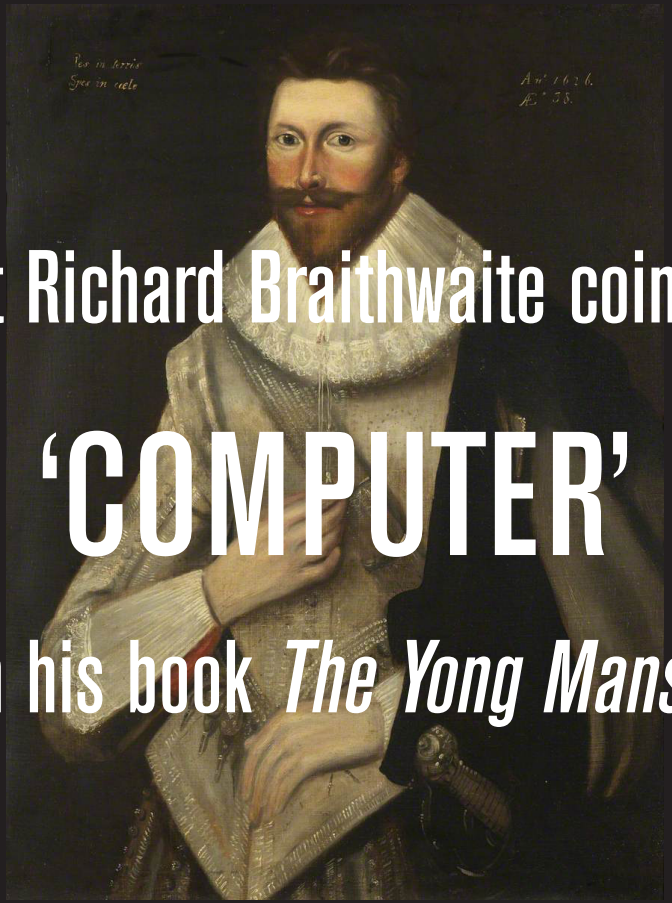
A BRIEF HISTORY OF THE INTERNET

BIRTH TO HTML

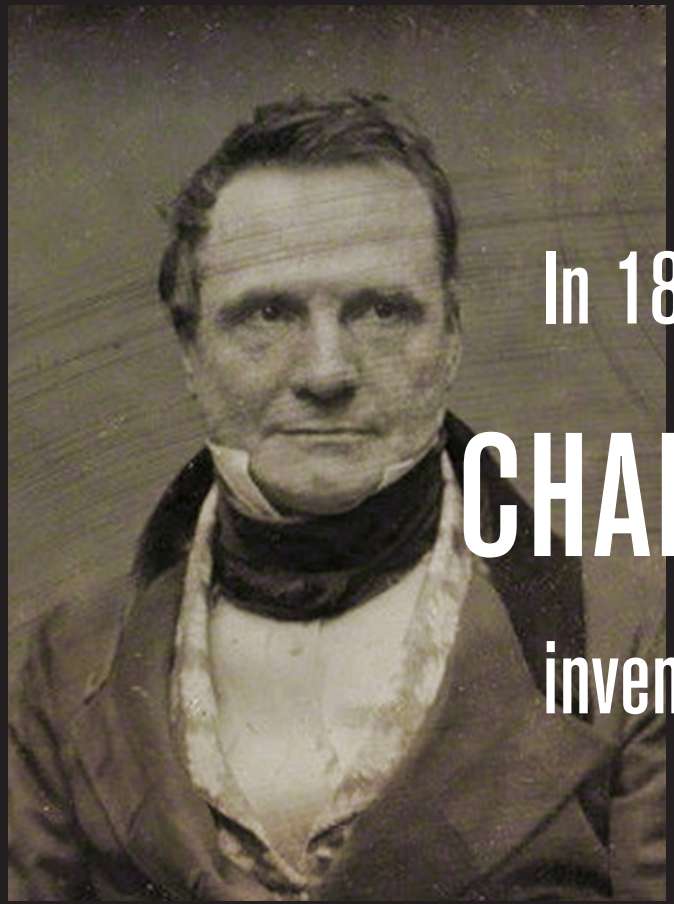
English poet Richard Braithwaite coined the term

‘COMPUTER’

in 1613, in his book *The Yong Mans Gleanings*



For hundreds of years, ‘computer’ was a job title, describing a person who did computations.

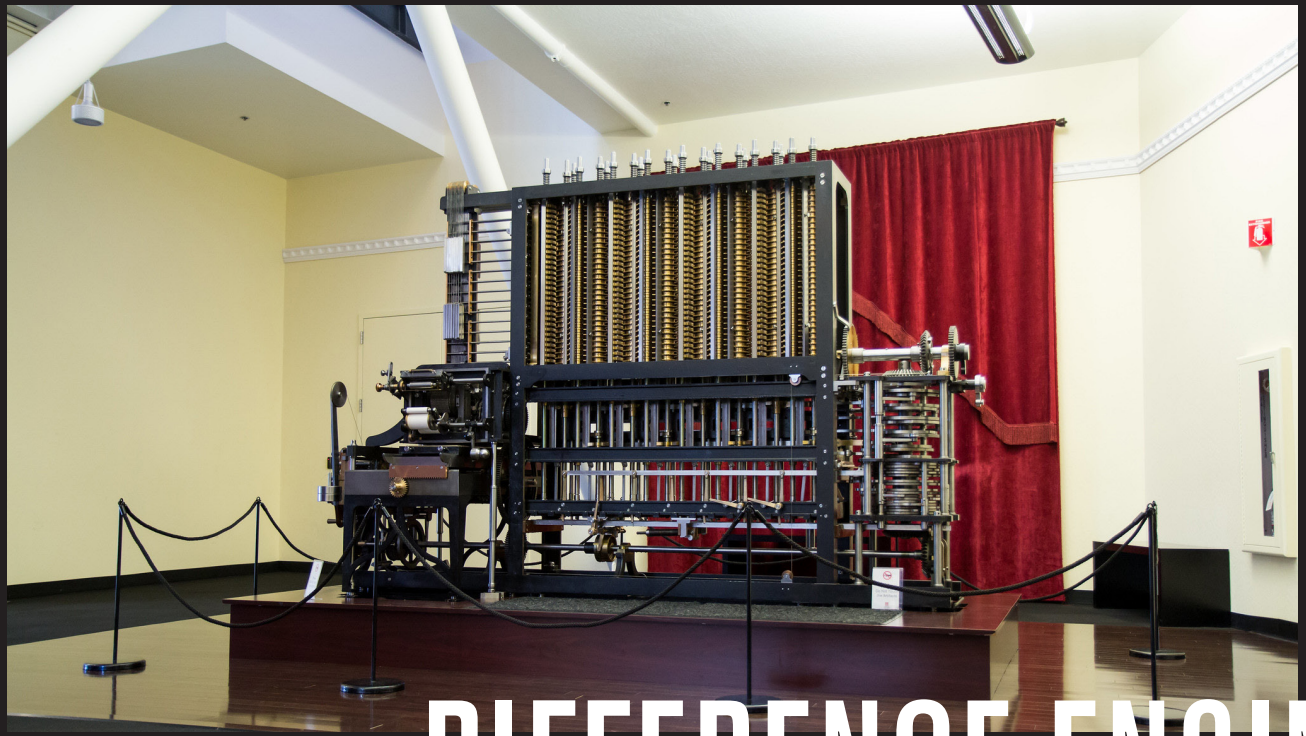


In 1822, English mathematician

CHARLES BABBAGE

invented the “Difference Engine”

PHOTO CREDIT: DAGUERREOTYPE BY ANTOINE CLAUDET VIA WIKIMEDIA COMMONS



DIFFERENCE ENGINE

PHOTO CREDIT: ATOMIC TACO VIA FLICKR (CC BY-SA 2.0 DEED)

Babbage did not work alone.
He consulted with Ada Lovelace, a 17-year-old mathematical genius, daughter of Lord Byron.

Ada Lovelace added extensive notes to Italian scientist Luigi Menabrea's paper on Babbage's invention. Those notes amount to the first computer program.

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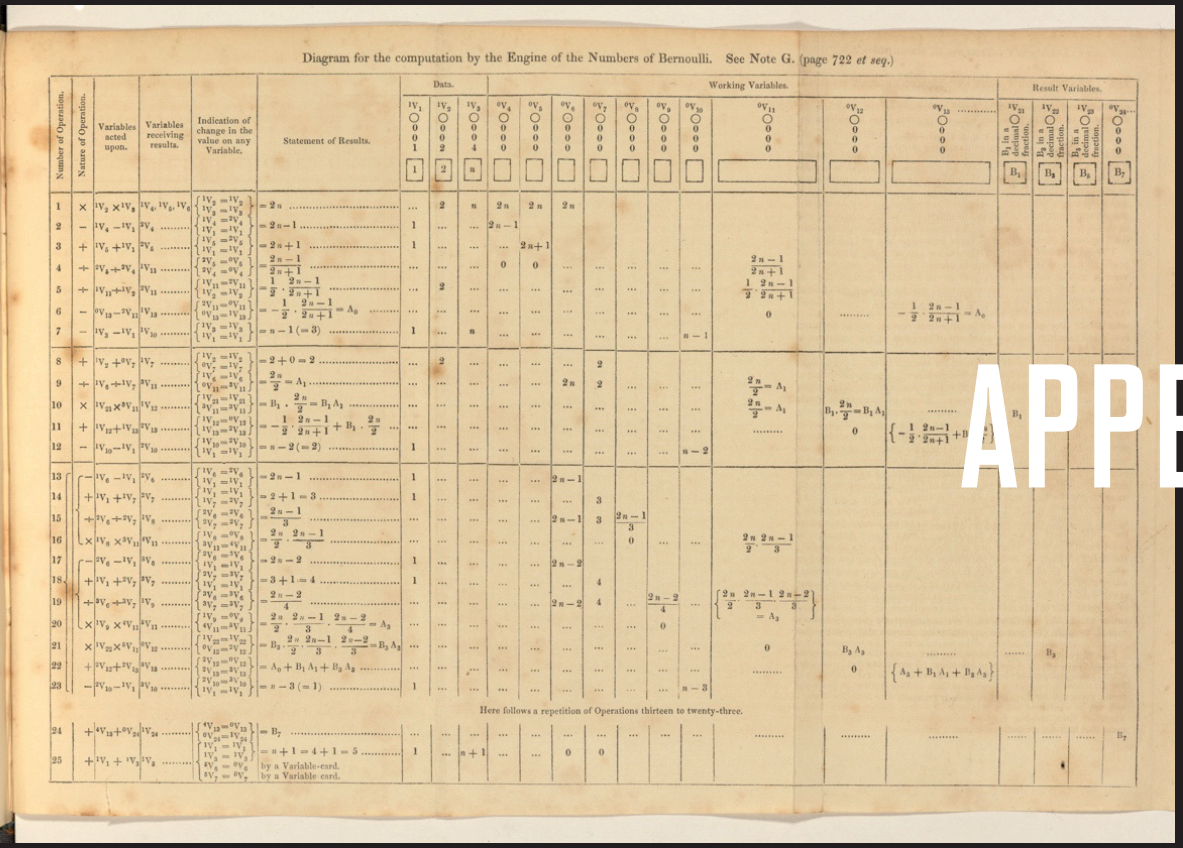

Diagram for the computation by the Engine of the Numbers of Bernoulli. See Note G. (page 722 *et seq.*)

Number of Operation.	Nature of Operation.	Variables acted upon.	Variables receiving results.	Indication of change in the value on any Variable.	Statement of Results.	Data.			Working Variables.									Result Variables.			
						$^1V_1$ 1	$^1V_2$ 2	$^1V_3$ n	$^0V_4$	$^0V_5$	$^0V_6$	$^0V_7$	$^0V_8$	$^0V_9$	$^0V_{10}$	$^0V_{11}$	$^0V_{12}$	$^0V_{13}$	$^1V_{21}$ B_1 in a decimal fraction.	$^1V_{22}$ B_3 in a decimal fraction.	$^1V_{23}$ B_5 in a decimal fraction.	$^0V_{24}$... B_7
1	×	$^1V_2 \times {}^1V_8$	$^1V_4, {}^1V_5, {}^1V_6$	$\left\{\begin{matrix} {}^1V_2 = {}^1V_2 \\ {}^1V_8 = {}^1V_8 \end{matrix}\right.$	$= 2n$	...	2	n	$2n$	$2n$	$2n$											
2	−	$^1V_4 - {}^1V_1$	$^2V_4$	$\left\{\begin{matrix} {}^1V_4 = {}^1V_4 \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= 2n-1$	1	...	...	$2n-1$													
3	+	$^1V_6 + {}^1V_1$	$^2V_6$	$\left\{\begin{matrix} {}^1V_6 = {}^1V_6 \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= 2n+1$	1	...	...	...	$2n+1$												
4	÷	$^2V_6 \div {}^2V_4$	$^1V_{11}$	$\left\{\begin{matrix} {}^2V_6 = {}^0V_6 \\ {}^2V_4 = {}^0V_4 \end{matrix}\right.$	$= \frac{2n-1}{2n+1}$	...	...	...	0	0	...	...	...	...	...	$\frac{2n-1}{2n+1}$						
5	÷	$^1V_{11} \div {}^1V_3$	$^2V_{11}$	$\left\{\begin{matrix} {}^1V_{11} = {}^0V_{11} \\ {}^1V_3 = {}^1V_3 \end{matrix}\right.$	$= \frac{1}{2} \cdot \frac{2n-1}{2n+1}$	...	2	...	...	...	...	...	...	...	...	$\frac{1}{2}\frac{2n-1}{2n+1}$						
6	−	$^0V_{13} - {}^2V_{11}$	$^1V_{13}$	$\left\{\begin{matrix} {}^2V_{11} = {}^0V_{11} \\ {}^0V_{13} = {}^1V_{13} \end{matrix}\right.$	$= -\frac{1}{2} \cdot \frac{2n-1}{2n+1} = A_0$	...	...	...	...	...	...	...	...	...	...	0	.....	$-\frac{1}{2} \cdot \frac{2n-1}{2n+1} = A_0$				
7	−	$^1V_9 - {}^1V_1$	$^1V_{10}$	$\left\{\begin{matrix} {}^1V_9 = {}^1V_9 \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= n-1\ (=3)$	1	...	n	...	...	...	...	...	...	$n-1$							
8	+	$^1V_2 + {}^0V_7$	$^1V_7$	$\left\{\begin{matrix} {}^1V_2 = {}^1V_2 \\ {}^0V_7 = {}^1V_7 \end{matrix}\right.$	$= 2+0=2$	...	2	...	...	...	...	2										
9	+	$^1V_6 + {}^1V_7$	$^1V_{11}$	$\left\{\begin{matrix} {}^1V_6 = {}^0V_6 \\ {}^0V_{11} = {}^1V_{11} \end{matrix}\right.$	$= \frac{2n}{2} = A_1$	...	...	...	...	...	$2n$	2	...	...	...	$\frac{2n}{2} = A_1$						
10	×	$^1V_{21} \times {}^1V_{11}$	$^1V_{12}$	$\left\{\begin{matrix} {}^1V_{21} = {}^1V_{21} \\ {}^1V_{11} = {}^1V_{11} \end{matrix}\right.$	$= B_1 \cdot \frac{2n}{2} = B_1 A_1$	...	...	...	...	...	...	...	...	...	...	$\frac{2n}{2} = A_1$	$B_1, \frac{2n}{2} = B_1 A_1$	.....				
11	+	$^1V_{12} + {}^1V_{13}$	$^1V_{13}$	$\left\{\begin{matrix} {}^1V_{12} = {}^0V_{12} \\ {}^1V_{13} = {}^0V_{13} \end{matrix}\right.$	$= -\frac{1}{2} \cdot \frac{2n-1}{2n+1} + B_1 \cdot \frac{2n}{2}$	...	...	...	...	...	...	...	...	...	...	.....	0	$\left\{-\frac{1}{2} \cdot \frac{2n-1}{2n+1} + B\right.$	B_1			
12	−	$^1V_{10} - {}^1V_1$	$^2V_{10}$	$\left\{\begin{matrix} {}^1V_{10} = {}^2V_{10} \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= n-2\ (=2)$	1	...	...	...	...	...	...	...	...	$n-2$							
13	−	$^1V_6 - {}^1V_1$	$^2V_6$	$\left\{\begin{matrix} {}^1V_6 = {}^2V_6 \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= 2n-1$	1	...	...	...	...	$2n-1$											
14	+	$^1V_1 + {}^2V_7$	$^2V_7$	$\left\{\begin{matrix} {}^1V_1 = {}^1V_1 \\ {}^2V_7 = {}^2V_7 \end{matrix}\right.$	$= 2+1=3$	1	...	...	...	...	...	3										
15	+	$^2V_6 + {}^2V_7$	$^2V_8$	$\left\{\begin{matrix} {}^2V_6 = {}^2V_6 \\ {}^2V_7 = {}^2V_7 \end{matrix}\right.$	$= \frac{2n-1}{3}$	...	...	...	...	...	$2n-1$	3	$\frac{2n-1}{3}$									
16	×	$^1V_8 \times {}^2V_{11}$	$^2V_{11}$	$\left\{\begin{matrix} {}^1V_8 = {}^0V_8 \\ {}^2V_{11} = {}^0V_{11} \end{matrix}\right.$	$= \frac{2n}{2} \cdot \frac{2n-1}{3}$	...	...	...	...	...	...	...	0	...	...	$\frac{2n}{2}\frac{2n-1}{3}$						
17	−	$^2V_6 - {}^1V_1$	$^2V_6$	$\left\{\begin{matrix} {}^2V_6 = {}^2V_6 \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= 2n-2$	1	...	...	...	...	$2n-2$											
18	+	$^1V_1 + {}^2V_7$	$^2V_7$	$\left\{\begin{matrix} {}^1V_1 = {}^1V_1 \\ {}^2V_7 = {}^2V_7 \end{matrix}\right.$	$= 3+1=4$	1	...	...	...	...	...	4										
19	÷	$^2V_6 \div {}^2V_7$	$^2V_9$	$\left\{\begin{matrix} {}^2V_6 = {}^2V_6 \\ {}^2V_7 = {}^2V_7 \end{matrix}\right.$	$= \frac{2n-2}{4}$	...	...	...	...	...	$2n-2$	4	...	$\frac{2n-2}{4}$	...	$\left\{\frac{2n}{2}\frac{2n-1}{3}\frac{2n-2}{3}\right.$						
20	×	$^2V_9 \times {}^2V_{11}$	$^2V_{11}$	$\left\{\begin{matrix} {}^2V_9 = {}^0V_9 \\ {}^2V_{11} = {}^0V_{11} \end{matrix}\right.$	$= \frac{2n}{2} \cdot \frac{2n-1}{3} \cdot \frac{2n-2}{4} = A_2$	...	...	...	...	...	...	...	...	...	...	$= A_2\}$						
21	×	$^1V_{22} \times {}^2V_{11}$	$^2V_{12}$	$\left\{\begin{matrix} {}^1V_{22} = {}^0V_{22} \\ {}^0V_{12} = {}^2V_{12} \end{matrix}\right.$	$= B_3 \cdot \frac{2n}{2} \cdot \frac{2n-1}{3} \cdot \frac{2n-2}{4} = B_3 A_2$	...	...	...	...	...	...	...	...	...	...	0	$B_3 A_2$	.....	.....	B_3		
22	+	$^2V_{12} + {}^1V_{13}$	$^2V_{13}$	$\left\{\begin{matrix} {}^2V_{12} = {}^0V_{12} \\ {}^1V_{13} = {}^1V_{13} \end{matrix}\right.$	$= A_0 + B_1 A_1 + B_3 A_2$	...	...	...	...	...	...	...	...	...	...	.....	0	$\left\{A_2 + B_1 A_1 + B_3 A_2\right\}$				
23	−	$^2V_{10} - {}^1V_1$	$^2V_{10}$	$\left\{\begin{matrix} {}^2V_{10} = {}^2V_{10} \\ {}^1V_1 = {}^1V_1 \end{matrix}\right.$	$= n-3\ (=1)$	1	...	...	...	...	...	...	...	...	$n-3$							

Here follows a repetition of Operations thirteen to twenty-three.

24	+	$^2V_{13} + {}^0V_{24}$	$^1V_{24}$	$\left\{\begin{matrix} {}^2V_{13} = {}^0V_{13} \\ {}^0V_{24} = {}^1V_{24} \end{matrix}\right.$	$= B_7$	...	...	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	B_7
25	+	$^1V_1 + {}^1V_2$	$^2V_2$	$\left\{\begin{matrix} {}^1V_1 = {}^1V_1 \\ {}^1V_2 = {}^1V_2 \\ {}^2V_6 = {}^0V_6 \\ {}^2V_7 = {}^0V_7 \end{matrix}\right.$	$= n+1=4+1=5$ ..... by a Variable-card. by a Variable card.	1	...	$n+1$	...	...	0	0											

APPENDIX G

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Many years later, four mainframe computers were networked together by US government researchers.

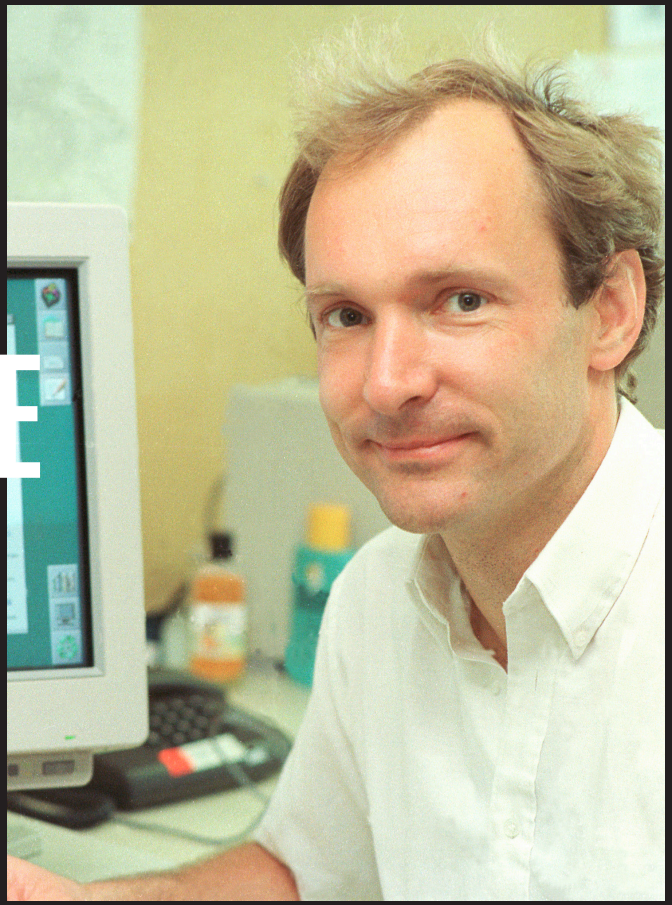
"The ARPANET was not started to create a Command and Control System that would survive a nuclear attack, as many now claim. To build such a system was, clearly, a major military need, but it was not ARPA's mission to do this; in fact, we would have been severely criticized had we tried. Rather, the ARPANET came out of our frustration that there were only a limited number of large, powerful research computers in the country, and that many research investigators, who should have access to them, were geographically separated from them."

Charles Herzfeld, ARPA Director (1965–1967)

Former physicist
+ computer scientist

TIM BURNERS-LEE

invented HTML, http, URLs,
the first web server and the
browser and html editor.



HTML

HYPERTEXT MARKUP LANGUAGE

=

TEXT ENCODING SYSTEM

BURNER-LEE'S 3-PART WEB

1. HTML documents
2. Software programs called browsers
3. Sets of rules, known as the HTTP protocol

HTML Document Structure

HTML is the skeleton of a webpage

HTML code is made of tags,
which represent elements on the page

Tags tell a browser what it is rendering

```
<!DOCTYPE html>
<html lang=”en-US”>
    <head>
        <meta charset=”utf-8” />
        <meta name=”viewport” content=”width=device-width” />
        <title>Page Title</title>
    </head>
    <body>
        <p>Here is a sentence in a paragraph.</p>
    </body>
</html>
```