Your 3rd assignment:   
Learn about a famous computer scientist

# Learning goals

Describe some of the people who have made important contributions to computer science.

Gain a better appreciation for how far we’ve come, and how progress in technology happens.

# What you will do

Let X = an influential computer scientist of your choosing

Learn:

* Where and when X lived
* What X’s specialty was
* How X got to be so good at that specialty
* The biggest contributions that X made to CS. In other words, why is X famous?
* Some of the math or technical background behind one of those contributions
* A bit about X’s personality or character. (For example, Facebook founder Mark Zuckerberg was widely known as a sexist jerk. Edsgar Dijkstra actually disliked computers, and wrote all his CS journal papers by hand with a fountain pen.)

Write a research paper that captures the most interesting points about X. Aim for 600-800 words.

The goal is to tell an interesting human story, rather than to spew a list of dry biographical facts. A simple re-hash of the Wikipedia article on the person is not acceptable. For this reason, you must include substantial material from at least four non-Wikipedia sources. These may include videos, either about the person or the field they specialized in. (For example, if you chose Alan Turing, you might want to watch a few videos about how the Enigma machine worked and how it its code was broken.)

Include a bibliography, formatted in MLA or Chicago style.

# Computer scientists you could choose

Below are just a few of the men and women you could choose from. You are not limited to this list.

**Alan Turing** Built a computer to break the Nazis’ Enigma code in WWII. Developed the concept of a Turing machine and the Turing Test. Considered the “Isaac Newton” of computer science.

**John von Neumann** Designed the 1st computers that stored programs in memory instead of in the wiring itself

**Grace Hopper** Wrote the 1st COBOL compiler. Invented the phrase “computer bug”.

**Edsgar Dijkstra** Inventor of the shortest-path algorithm, one of the most important algorithms in all of CS

**John McCarthy** Considered the founder of artificial intelligence (AI)

**Ping Fu** Founder of Geomagic, a 3D modeling software company. She also wrote a best-selling memoir,   
 *Bend But Not Break*

**Claude Shannon** Established the mathematical field of Information Theory with a ground-breaking paper in 1948

**David Deutsch**  Pioneered the field of quantum computing

**Charles Babbage** Designed the first all-purpose mechanical calculator in the 1820’s

**Donald Knuth** Developed the first rigorous standards for how programs should be written and analysed in the groundbreaking book *The Art of Computer Programming*. Inventor of Big-O notation for measuring the efficiency of algorithms

**Erik Demaine** World’s #1 expert on computational origami. Got his Ph.D. from UW at age 20. (He’s also a friend of mine!)

**Ada Lovelace** The first programmer in history. She wrote programs before there were computers to run them!

**Steve Wozniak** Built the first Apple computer

**Larry Page** Inventor of Google’s PageSearch algorithm, the basic algorithm behind all Google searches

**George Boole** Mathematician who first expressed rules for logical deduction as algebraic rules. “Boolean”   
 expression is derived from his name

**Linus Torvalds** Inventor of the Linux operating system, which is the core of Android

**Mike Lazaridis** Electrical engineer and founder of RIM

**Frances Allen** First woman to win the Turing Award

**Ronald Rivest** Inventor of the RSA encryption algorithm, now used to encrypt virtually all online transactions

**Dennis Ritchie** Inventor of C, and co-inventor of the Unix operating system

**Bjarne Stroustroup** Inventor of C++

**Georg Dantzig** Inventor of the simplex algorithm for solving linear optimization problems (also called Linear   
 Programming). LP was used by the Allies in WW2 to allocate armed escorts of Atlantic convoys.

**Stephen Wolfram** Inventor of the software Mathematica and an AI wonder known as Wolfram|Alpha

**John Conway** Developed the theory of cellular automata and the simulation known as Conway’s Game of Life

**Benoit Mandelbrot** Developed the theory of fractals, including the fractal named after him, called the Mandelbrot Set

**Mark Zuckerberg** Inventor and CEO of Facebook

**John Draper** One of the earliest computer hackers who went to prison for his crimes but also helped Steve Jobs   
 and Steve Wozniak establish Apple

**Anita Borg** Developed smart e-mail systems in the 1980’s. Founded the most famous conference for women   
 in computer science.

**other** \_\_\_\_\_\_\_\_ \_???\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the tables below to keep track of your findings as you read

Computer scientist you chose

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Where and when X lived

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A few of X’s specialties or areas of expertise:

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How X got to be so good at one or more of those specialties

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Biggest contributions of X to CS (you can have more than two if you want)

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| **Contribution** | **Details. Why is the contribution important?** |
| 1. |  |
| 2. |  |

A bit of the math or technical background behind one of those contributions

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Interesting bits about X’s personality or views

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Your 6+ sources (at least 4 not from Wikipedia):

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Now weave your findings into a smooth, engaging paper. 600-800 words is about right.