QUANTUM COMPUTER

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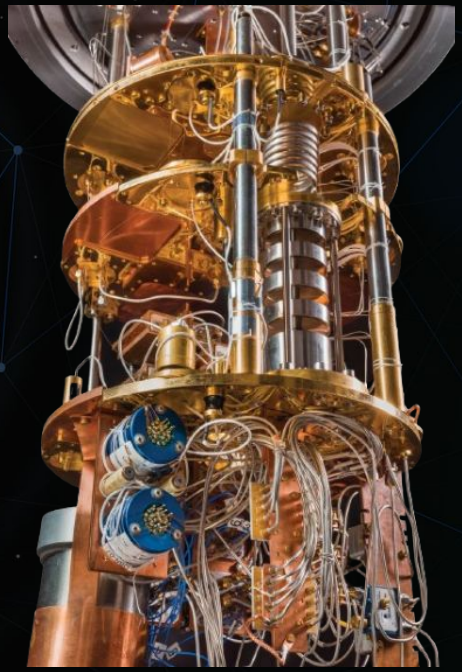
What is quantum computer?

A quantum computer is a computer that use quantum property of matter, like status overlapping and entanglement, to elaborate data.

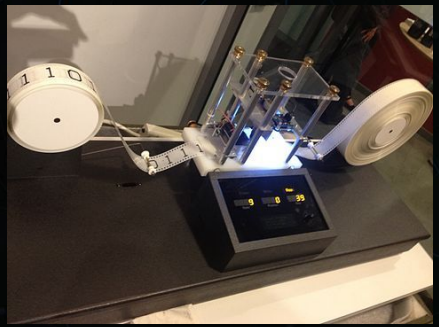
They don't use binary data but they use *qubit* that can store multiple classic data simultaneously. But when this data is read it become a binary data 0/1 and we lose other information.



A little bit of history

The idea of quantum computing start in 1980s when a physicist named Paul Benioff created the first quantum prototype of the Turing machine.

The first prototype of a quantum computer was created by IBM in 2019 [IBM Q System One] but nowadays all the project are still a prototype and there aren't totally correct.



How it's made?

MICROWAVE
+
TRANSISTOR

Used by U.S Army

SUPERCONDUCTOR
+
CAPACITOR

Used by Google and IBM

PRO

Less use of Memory

Quantum Overlapping

Entanglement

Space Exploration

Computing Speed

Energy Efficiency

Resolution of Complex Problems

Climate Modeling

Innovative Scientific Discoveries

Disadvantages

COLD

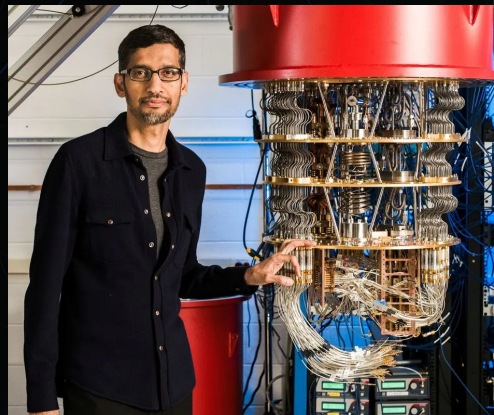
The main disadvantage is the temperature that this type of computer works.

Both type of architecture work at a temperature of 0.015 °K that are -258.15 °C very very close to the absolute temperature.

FUTURE PERSPECTIVES

An example of the computation power that this machine have was made by Google in 2019, he resolve a complex problem in 200 seconds instead 10000 years using the most powerful computer in the world.

Or with these machines we will be able to “break” all the cypring algorithms nowadays known. But we will able to create others using property of quantum computing, for example entanglement.



THANK YOU!