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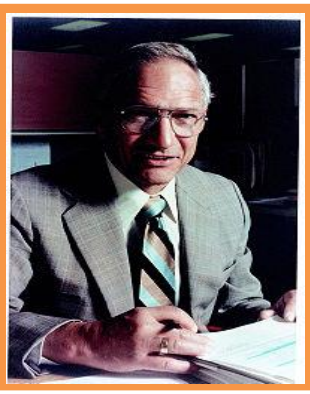


Robert Noyce
Cofounder : Intel corporation

Robert Norton Noyce (December 12, 1927 – June 3, 1990), nicknamed "**the Mayor of Silicon Valley**", co-founded Fairchild Semiconductor in 1957 and Intel in 1968. He is also credited (along with Jack Kilby) with the invention of the integrated circuit or microchip. While Kilby's invention was six months earlier, neither man rejected the title of co-inventor. Noyce was also a mentor and father-figure to an entire generation of entrepreneurs, including Steve Jobs at Apple, Inc.

Education

He exhibited a talent for math and science while in high school and took the Grinnell College freshman physics course in his senior year. He graduated from Grinnell High School in 1945 and entered Grinnell College in the fall of that year. He graduated Phi Beta Kappa with a BA in physics and mathematics from Grinnell College in 1949. He also received a signal honor from his classmates: the Brown Derby Prize, which recognized "the senior man who earned the best grades with the least amount of work". He received his Ph.D. in physics from Massachusetts Institute of Technology in 1953. He studied the first transistors, developed at Bell Laboratories, in a Grinnell College classroom.He decided to

spend his semester's expulsion working as a clerk in the actuarial department of the Equitable Life Insurance Company in New York City. He returned to Grinnell and graduated with his class in the spring of 1949.

Career

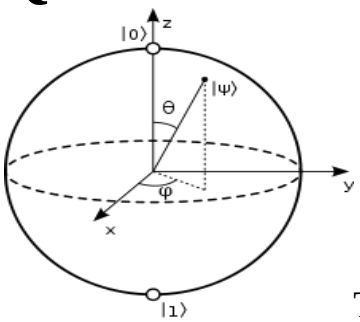
After graduating from the Massachusetts Institute of Technology in 1953, he took his first job as a research engineer at the Philco Corporation in Philadelphia, Pennsylvania. He left in 1956 for the Shockley Semiconductor Laboratory in Mountain View, California.He joined William Shockley at the Shockley Semiconductor Laboratory, a division of Beckman Instruments, but left with the "Traitorous Eight". in 1957, because of the poor management of the company, to create the influential Fairchild Semiconductor corporation. According to Sherman Fairchild.Noyce and Gordon E. Moore founded Intel in 1968 when they left Fairchild Semiconductor. Arthur Rock, the chairman of Intel's board and a major investor in the company said that for Intel to succeed, Intel needed Noyce, Moore and Grove. Noyce's management style could be called "roll up your sleeves." By declining the usual executive perks he stood as a model for future generations of Intel CEOs. At Intel, he oversaw Ted Hoff's invention of the microprocessor—that was his second revolution.

Awards and honors

In July, 1959, he filed for U.S. Patent 2,981,877 "Semiconductor Device and Lead Structure", a type of integrated circuit. This independent effort was recorded only a few months after the key findings of inventor Jack Kilby. For his co-invention of the integrated circuit and its world-transforming impact, three presidents of the United States honored him.President Ronald Reagan awarded him the National Medal of Technology in 1987. Two years later, George H.W. Bush inducted him into the Business Hall of Fame. President George H. W. Bush presented the award, sponsored by the National Academy of Engineering.In 1990 also Noyce—along with Jack Kilby, transistor inventor John Bardeen, and some other celebrities, received a "Lifetime Achievement Medal" during the bicentennial celebration of the Patent Act.Noyce received the Stuart Ballantine Medal in 1966. He was awarded the IEEE Medal of Honor in 1978 "for his contributions to the silicon integrated circuit, a cornerstone of modern electronics." In 1979, he was awarded the National Medal of Science. In 1990, the National Academy of Engineering awarded him its Draper Prize.Mr. Noyce was inducted into the Junior Achievement U.S. Business Hall of Fame in 1989. The science building at his alma mater, Grinnell College, is named after him.

He accumulated sixteen patents to his name.

Quantum computer



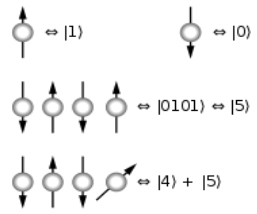
The Bloch sphere is a representation of a qubit, the fundamental building block of quantum computers.

A **quantum computer** is a device for computation that makes direct use of quantum mechanical phenomena, such as superposition and entanglement, to perform operations on data. Quantum computers are different from traditional computers based on transistors. The basic principle behind quantum computation is that quantum properties can be used to represent data and perform operations on these data. A theoretical model is the quantum Turing machine, also known as the universal quantum computer.Although quantum computing is still in its infancy, experiments have been carried out in which quantum computational operations were executed on a very small number of qubits (quantum bit). Both practical and theoretical research continues, and many national government and military funding agencies support quantum computing research to develop quantum computers for both civilian and national security purposes, such as cryptanalysis.

Basis

A classical computer has a memory made up of bits, where each bit represents either a one or a zero. A quantum computer maintains a sequence of qubits. A single qubit can represent a one, a zero, or, crucially, any quantum superposition of these; moreover, a pair of qubits can be in any quantum superposition of 4 states, and three qubits in any superposition of 8. In general a quantum computer with n qubits can be in an arbitrary superposition of up to 2^n different states simultaneously (this compares to a normal computer that can only be in *one* of these 2^n states at any one time). A quantum computer operates by manipulating those qubits with a fixed sequence of quantum logic gates. The sequence of gates to be applied is called a quantum algorithm

Bits vs. qubits



qubits can be in a superposition of all the clasically allowed states

Qubits are made up of controlled particles and the means of control (e.g. devices that trap particles and switch them from one state to another). Consider first a classical computer that operates on a three-bit register. The state of the computer at any time is a probability distribution over the $2^3 = 8$ different three-bit strings `000, 001, 010, 011, 100, 101, 110, 111`. If it is a deterministic computer, then it is in exactly one of these states with probability 1. However, if it is a probabilistic computer, then there is a possibility of it being in any *one* of a number of different states. We can describe this probabilistic state by eight nonnegative numbers *a*,*b*,*c*,*d*,*e*,*f*,*g*,*h* (where *a* = probability computer is in state `000`, *b* = probability computer is in state `001`, etc.). There is a restriction that these probabilities sum to 1.The state of a three-qubit quantum computer is similarly described by an eight-dimensional vector (*a*,*b*,*c*,*d*,*e*,*f*,*g*,*h*), called a ket. However, instead of adding to one, the sum of the *squares* of the coefficient magnitudes, $|a|^2 + |b|^2 + ... + |h|^2$, must equal one. Moreover, the coefficients are complex numbers. Since states are represented by complex wavefunctions, two states being added together will undergo interference. This is a key difference between quantum computing and probabilistic classical computing. If you measure the three qubits, then you will observe a three-bit string. The probability of measuring a string will equal the squared magnitude of that string's coefficients (using our example, probability that we read state as `000` = $|a|^2$, probability that we read state as `001` = $|b|^2$, etc..). Thus a measurement of the quantum state with coefficients (*a*,*b*,...,*h*) gives the classical probability distribution ($|a|^2$, $|b|^2$,..., $|h|^2$). We say that the quantum state "collapses" to a classical state.Note that an eight-dimensional vector can be specified in many different ways, depending on what basis you choose for the space. The basis of three-bit strings 000, 001, ..., 111 is known as the computational basis, and is often convenient, but other bases of unit-length, orthogonal vectors can also be used. Ket notation is often used to make explicit the choice of basis. For example, the state (*a*,*b*,*c*,*d*,*e*,*f*,*g*,*h*) in the computational basis can be written as

$$a|000\rangle + b|001\rangle + c|010\rangle + d|011\rangle + e|100\rangle + f|101\rangle + g|110\rangle + h|111\rangle$$

where, e.g., $|010\rangle$= (0,0,1,0,0,0,0,0).The computational basis for a single qubit

(two dimensions) is $|0\rangle$= (1,0), $|1\rangle$= (0,1), but another common basis are the eigenvectors of the Pauli-x operator: $|+\rangle = \frac{1}{\sqrt{2}}(1,1)$and $|-\rangle = \frac{1}{\sqrt{2}}(1,-1)$.

Best the India have today (Sports)

SAINA NEHWAL

Saina Nehwal born March 17, 1990 is an Indian Khel Ratna winning badminton player currently ranked number 3 in the world by Badminton World Federation. Saina is the first Indian woman to reach the singles quarterfinals at the Olympics and the first Indian to win the World Junior Badminton Championships. Saina Nehwal made history on June 21, 2009, becoming the first Indian to win a Super Series tournament, by clinching the Indonesia Open with a stunning victory over higher-ranked Chinese Wang Lin in Jakarta. (The Super Series tournament is roughly equivalent to a Grand Slam in tennis).

GAGAN NARANG

Gagan Narang is a gold medalist in the Afro Asian games, 2003 in Hyderabad on October 26, 2003 in Men's 10m air rifle competition. He had won an air rifle gold medal at the World Cup 2006 and followed that event in April 2008.In a pre-Olympic event in Hannover, Germany, Gagan shot an air rifle score higher than the world record, 704.3 as opposed to 703.1 set by Thomas Farnik of Austria in the World Cup 2006.Gagan qualified for the 2008 ISSF World Cup Final after he won a bronze in the World Cup in China earlier in 2008. Gagan shot a perfect 600 in the qualification round. He scored 103.5 in the final round making total score of 703.5 to gain the world record. He broke Austria's Thomas

Farnik's record, set in the 2006 World Cup final in Granada, Spain. Gagan said his win was special because Barack Obama, who won the United States' Presidential election on same day, was a source of inspiration.

Interesting facts about India

- India never invaded any country in her last 100000 years of history.
- When many cultures were only nomadic forest dwellers over 5000 years ago, Indians established Harappan culture in Sindhu Valley (Indus Valley Civilization)
- The name 'India' is derived from the River Indus, the valleys around which were the home of the early settlers. The Aryan worshippers referred to the river Indus as the Sindhu.
- The Persian invaders converted it into Hindu. The name 'Hindustan' combines Sindhu and Hindu and thus refers to the land of the Hindus.
- Chess was invented in India.
- Algebra, Trigonometry and Calculus are studies, which originated in India.
- The World's First Granite Temple is the Brihadeswara Temple at Tanjavur, Tamil Nadu. The shikhara of the temple is made from a single 80-tonne piece of granite. This magnificent temple was built in just five years, (between 1004 AD and 1009 AD) during the reign of Rajaraja Chola.
- The game of Snakes & Ladders was created by the 13th century poet saint Gyandev. It was originally called 'Mokshapat'. The ladders in the game represented virtues and the snakes indicated vices. The game was played with cowrie shells and dices. In time, the game underwent several modifications, but its meaning remained the same, i.e. good deeds take people to heaven and evil to a cycle of re-births.
- The world's highest cricket ground is in Chail, Himachal Pradesh. Built in 1893 after leveling a hilltop, this cricket pitch is 2444 meters above sea level.
- India has the largest number of Post Offices in the world.

QUIZ #51

1 Which monument in India has the largest corridor?
2 Which is our National Science Day?
3 Where is Fort William located in India?

ANSWER #50

1 Name the tree that is seen on the reverse side of RS 20/- Note?==Palm tree
2 Name one Indian state where English is the first Official Language ?==Nagaland & Meghalaya
3 Who won the GOLDEN BOOT in FIFA 2010 worldcup?==Thomus Mueller

Mail your comments/answers: mailtocolumbus@gmail.com

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QUIZ WINERS

Aishwarya
Patil (MCA 2)

Manali
Joshi (MCA 2)

Aishwarya

QUIZ