Module A.2 Level 1

1. 1.The Abucus by definition the first digital computer because it calculated values by using digits. The Abucus was invented between 500-1300 B.C.  
     
   The ENIAC was invented in 1947, it contained 18,000 vacuum tubes, 10,000 capacitors, 6,000 switches and 1,500 relays.  
     
   On June 14, 1951, declared that UNIVAC was the first electronic digital computer. It was made by J. Presper Eckert and John Mauchly (designers of the ENIAC).
   1. In the 1960’s mainframe computers become much more common in large industries and with the US military and space program. IBM became the unquestioned market leader in selling mainframe computers. Personal computers occurred in the early 1970s, starting with Steve Jobs and Steve Wozniak exhibiting the first Apple II.
   2. Some modern mainframes that banks, government, and large companies use today are ATM’s and Credit purchase at a retail store.
2. In 1964, Cray introduced the CDC 6600, it ran at a speed of 40 MHz, executing roughly three million floating-point operations per second, which made it the fastest computer in the world. It was often considered to be the world’s first supercomputer, the CDC 6600 was 10 times faster than most computers and three times faster than the [IBM](https://www.thoughtco.com/ibm-history-1991407) 7030 Stretch.
   1. The Goodyear Massively Parallel Processor (MPP) was a [massively parallel processing](https://en.wikipedia.org/wiki/Massively_parallel_(computing)) [supercomputer](https://en.wikipedia.org/wiki/Supercomputer) built by [Goodyear Aerospace](https://en.wikipedia.org/wiki/Goodyear_Aerospace) for the [NASA](https://en.wikipedia.org/wiki/NASA) [Goddard Space Flight Center](https://en.wikipedia.org/wiki/Goddard_Space_Flight_Center).

The Network Computer (or NC) was a [diskless](https://en.wikipedia.org/wiki/Diskless_node) [desktop computer](https://en.wikipedia.org/wiki/Desktop_computer) device made by [Oracle Corporation](https://en.wikipedia.org/wiki/Oracle_Corporation) from about 1996 to 2000. The devices were designed and manufactured by an alliance, which included [Sun Microsystems](https://en.wikipedia.org/wiki/Sun_Microsystems), [IBM](https://en.wikipedia.org/wiki/IBM), and others. The devices were designed with minimum specifications, based on the [Network Computer Reference Profile](https://en.wikipedia.org/wiki/Network_Computer_Reference_Profile).

1. Due to the way the tiniest of particles behave, operations can be done much more quickly and use less energy than classical computers. Quantum computing uses quantum bits, or 'qubits' . However, unlike a usual bit, they can store much more information than just 1 or 0, because they can exist in any superposition of these values.
2. The first IBM computer was introduced on August 12, 1981. Some features it had were processing information faster than earlier machines, it could hook up to the home TV set, play games, process text and harbor more words than a fat cookbook.
   1. The [MITS Altair 8800](https://en.wikipedia.org/wiki/Altair_8800) was the first pc and it came in kits. It was introduced in 1975.
   2. The first apple product released was the apple 1 which came out in April 11, 1976. It was different from normal PC’s because they had different operating systems.
   3. We have faster processors now and the graphics are better than before.

Module A.2: Level 2

1. The first CPU chip was the Intel 4004 which was released on March 1971, it was created by Federico Faggin who worked at Intel Corporation. It includes the 4001 ROM, 4002 RAM, and 4003 Shift Register. With these components, small computers with varying amounts of memory and I/O facilities can be built. It was made up of [silicon gate technology](https://en.wikipedia.org/wiki/Self-aligned_gate#The_Development_of_the_Silicon_Gate_Technology_at_Fairchild_Semiconductor) for integrated circuits.
   1. An integrated circuit is an electronic circuit formed on a small piece of semiconducting material, performing the same function as a larger circuit made from discrete components. The monolithic (formed from a single crystal) integrated circuit placed the previously separated [transistors](https://www.thoughtco.com/the-history-of-the-transistor-1992547), resistors, capacitors and all the connecting wiring onto a single crystal (or 'chip') made of [semiconductor](https://www.thoughtco.com/what-is-a-semiconductor-1991409) material.
   2. The speed of data processing have increased since the Intel 4004 and 8086.
2. RAM is a type of computer memory that can be accessed randomly, Magnetic-core memory was the predominant form of [random-access](https://en.wikipedia.org/wiki/Random_access) [computer memory](https://en.wikipedia.org/wiki/Computer_memory) for 20 years between about 1955 and 1975. Such memory is often just called core memory, or, informally, core. Core uses tiny magnetic rings, through which wires are threaded to write and read information. Each core represents one [bit](https://en.wikipedia.org/wiki/Bit) of information.
   1. Moore's law refers to the observation that the number of [transistors](https://en.wikipedia.org/wiki/Transistor) in a dense [integrated circuit](https://en.wikipedia.org/wiki/Integrated_circuit) doubles approximately every two years.
   2. Internal and external storage devices have very different physical and operational characteristics.
   3. RAM evolved from an older technology, called magnetic core or ferrite core memory which was invented in the early 50s.
3. Video Graphics Array is a standard type of connection for video devices such as [monitors](https://www.lifewire.com/what-is-a-monitor-2618155) and projectors. Generally, VGA refers to the types of cables, ports, and connectors used to connect monitors to [video cards](https://www.lifewire.com/what-is-a-video-card-2618161). It was introduced in 1987.
   1. The CGA (Color Graphics Adapter) was invented in 1981.
   2. [3D computer graphics software](https://en.wikipedia.org/wiki/3D_computer_graphics_software) began appearing for [home computers](https://en.wikipedia.org/wiki/Home_computer) in the late 1970s. The earliest known example is [*3D Art Graphics*](https://en.wikipedia.org/w/index.php?title=3D_Art_Graphics&action=edit&redlink=1), a set of 3D computer graphics effects, written by Kazumasa Mitazawa and released in June 1978 for the [Apple II](https://en.wikipedia.org/wiki/Apple_II).
   3. Intel’s iSBX 275 Video Graphics Controller Multimode Board was one of the first graphic cards which appeared in 1983, it was able to display eight colours at a resolution of 256 x 256.

Module A.2 Level 3

1. An Operating system is the software that supports a computer's basic functions.
   1. A software program is commonly defined as a set of instructions, or a set of modules or procedures, that allow for a certain type of computer operation. A software program is used in an operating system.
   2. A device driver or hardware driver is a group of files that enable one or more hardware devices to communicate with the computer's operating system.
   3. A network service is an application running at the network application layer and above, that provides data storage, manipulation, presentation, communication or other capability.
2. DOS (Disk Operating System) was the first widely-installed operating system for IBM-compatible personal computers. DOS is a non-graphical line-oriented command-driven computer operating system. It relates to windows because old window computer ran DOS as a command prompt.
   1. Windows 1.0 was released on November 20, 1985, as the first version of the Microsoft Windows line. It runs as a graphical, 16-bit multi-tasking shell on top of an existing MS-DOS installation. It provides an environment which can run graphical programs designed for Windows.
   2. Windows went from its first version to Windows 95 which was released in August 1995. It introduced many of the concepts that we associate with Windows to this day, including the Start button and the taskbar. A huge success, it quickly became the single most popular desktop operating system.
3. Unix is a family of multitasking, multi user computer operating systems. The history of Unix dates back to the mid-1960s when the Massachusetts Institute of Technology, AT&T Bell Labs, and General Electric were jointly developing an experimental time sharing operating system called Multics for the GE-645 mainframe.
   1. An open-source operating system modelled on UNIX.
   2. UNIX is related to apple OS because Apple’s operating system is based on UNIX.