

Computer and medical field assignment



**ASSIGN
BUSTER**

From the end of the 19th century the word began to take on its more familiar meaning, a machine that carries out amputations Basically, computer is an electronic device that can be programmed to carry out a set of arithmetic or logical operations automatically. Modern computer can solve more than one kind of problem. Typically, a computer consists of a central processing unit (CPU), and memory. The processing element carries out arithmetic and logic operations, and a sequencing (ALU) and control unit can change the order of operations in response to stored information (CUE).

Peripheral devices allow information to be retrieved from an external source, and the result of operations saved and retrieved. Originally, computer is used to help simple calculation but development in technology rocketed the usage of computers to conduct multiple complicated tasks. In the early age, computer were the size of a large room, computers based on integrated circuits are millions to billions of times more capable than the early machines, and occupy a fraction of the space.

Simple computers are small enough to fit into mobile devices, and mobile computers can be powered by small batteries Nowadays, computers are vital in every field. It helps to ease the tasks by doing complicated calculation. For example in military field, computers are used in specialized military application such as decoding military codes, enemy detection and ballistic calculations. In medical field, computer help to improve the health of people by monitor the health of the patients and analyzed the condition of ones.

HISTORY First account of the computer is proposed by Charles Babbage.

Babbage had a vision of mechanical numbers and tables. In the early 19th century, he invented the first mechanical computer designed to help in navigational calculation. In 1833, he legalized that a much more general design, an Analytical Engine. The Engine incorporated an arithmetic logic unit (digital circuit that performs integer arithmetic and logical operations), making it the first design for a general-purpose computer. The first modern analogue computer was a tide-predicting machine invented by Sir William Thompson.

In 1941, Conrad Use came up with Z, the world's first working electromechanical programmable, fully automatic digital computer. It was quite similar to modern machines in some respects, pioneering numerous advances such as floating point numbers. Replacement of the hard-to-implement decimal system (used in Charles Babbage's earlier design) by the simpler binary system meant that Use's machines were easier to build and potentially more reliable, given the technologies available at that time. 5 years later, the Electronic Numerical Integrator and Computer (MANIAC) was constructed by United States Army Research and Development Command. Installed at the University of Pennsylvania, its 40 separate eight-foot-high racks and 18,000 tubes. It was the first electronic general-purpose computer intended to help calculate ballistic trajectories. The development of integrated circuit causes an explosion in the commercial and personal use of computers and led to the invention of the microprocessor. In ass, personal computer started to emerge. The Keenan-I, designed by John V. Blackener, the first personal computer, advertised for \$750 in Scientific American. More

of PC started to emerge such as Apple I and II, Commodore pet computer and IBM PC Jar.

In the year 1981, Microsoft introduces MS-DOS operating system that ease the users to give command. 21st century is known as the golden age of computer as all is depending on computers. Mobile computers start to emerge. With the continued miniaturization of computing resources, and advancements in portable battery life, portable computers grew in popularity in the sass. The same developments that spurred the growth of laptop computers and other portable computers allowed manufacturers to integrate computing resources into cellular phones.

These smartness run on a device on the market. COMPUTER SOFTWARE
Computer software also known as computer program is the non-tangible component of computers. Computer software contrasts with computer hardware, which is the hysterial component of computers. Computer hardware and software require each other and neither can be realistically used without the other. Computer software includes all computer programs regardless of their architecture; for example, executable files, libraries and scripts are computer software.

Yet, it shares their mutual properties: software consists of clearly defined instructions that upon execution, instructs hardware to perform the tasks for which it is designed. Software is stored in computer memory and cannot be touched, Just as a ID model shown in an illustration cannot be touched. How does Software functioning? Software is usually written in high-level

programming languages that are easier and more efficient for humans to use (closer to natural language) than machine language.

High-level languages are compiled or interpreted into machine language object code. Software may also be written in a low-level assembly language, essentially, a vaguely mnemonic representation of a machine language using a natural language alphabet. Assembly language is converted into object code via an assembler. Categories of Software Software is often divided into two categories. Systems software includes the operating system and all the utilities that enable the computer to function.

Applications software includes programs that do real work for users. For example, word processors, spreadsheets, and database management systems fall under the category of applications software. System Software Application Software Definition Collection of programs designed to operate, control and extend the processing capabilities of the computer itself. System software is generally prepared by computer manufactures. Software that are designed to satisfy a particular need of a particular environment. All software prepared by us in the computer lab.

Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer. There are many different kind of hardware that can be installed inside and connected to the outside of the computer. The hardware can be divided into two which are internal hardware device and external hardware device. The internal hardware parts of computer are often

referred to as component. The examples of internal hardware are graphic cards, sound cards, memory, motherboard and chips.

The external hardware parts of computer are referred as peripherals.

External hardware device include mouse, keyboard, WebMD, printer, speaker and scanner. Together they are fall under the category of computer

hardware. Category of Hardware Hardware can be classified into 4 category :

Input device Output device Processor Storage Input device is the data put

into the computer for processing. Common input device are keyboard, pointing device, scanner and source data automation.) Output Device

Output device is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system which inverts the electronically generated information

into human-readable form. Common input device are monitor, printer,

microfilm, projector, voice output. 3) Processor is well known as central processing unit (CAP]). It is the center of activity in the computer which

interprets and executes program instruction. It also communicate with input,

output and storage device.) Storage Storage devices are hardware devices

that are capable of storing information in a computer. The data storage

devices come in several sizes and shapes and some are non-removable while

other are removable. Some of the storage devices in a imputer include:

floppy diskette, CD-ROOM disc, CD-R disc, hard disk drive and USB flash

drive. How does the Computer Hardware related to the Medical Science?

Computer hardware is very useful in medical science field. The medical

officer such as doctor, pharmacist and dentist use the hardware to observe,

measure, interpret and record all the information, data and photocopy of the medical material.

For example, a radiographer use an X-ray device (input hardware) to generate X-ray image of a patient. The X-ray device is linked with computer and the image is display at computer screen (output hardware). One of the output hardware that is widely seed in medical field is vital sign monitor. It is an output device used by the doctor to display the information about blood pressure, temperature, pulse and pulse geometry of patient. The storage device is used by the doctor to store and save the patient record, electronic medical report, documents and others.

FUNCTION AND APPLICATION IN MEDICAL FIELD Computers play a key role in almost each area of life. They ease storage of huge measures of data, they enable instant action of info and they have an inbuilt intelligence. Owing to these specific potentialities, computers work on levels good to that of a human brain. Computers can hence be utilized in a wide form of fields like engineering, data processing and store, planning and programming, networking, education as well as health and medicine. First of all, computers are the brilliant way sustain patient records.

It is often essential to hold detailed records of the medical history of patients. Doctors oftentimes want the information about a patient's family history, physical ailments, already diagnosed diseases and prescribed medicinal drugs. This info can be in effect stored in a computer database. Computers can bear on track of prescriptions and billing information. They can be practiced to store the information about the medicines determined to

a patient as well as those, which cannot be prescribed to him/her. Computers enable an capable storage of huge amounts of medical data.

Computer software can used for diagnosis of disease. It can be utilized for the examination of internal organs of the physical structure. Advanced computer-based systems are practiced to analyses delicate organs of the body. Some of the complex surgeries can be executed with the aid of computers. The various types of monitoring equipment in hospitals are oftentimes based on imputer programming. Computer networking enables brighter communicating. Computers and Internet have showed to be a good in all the areas of life. In the field of medicine, computers provide for quicker communication between a patient and a doctor.

Doctors can collaborate better over the Internet. Nowadays, it is possible to obtain experts' opinions within seconds by ways of the Internet. Medical professionals sitting on opposite sides of the globe can communicate within minutes by means of the Internet. It is due to computer networking technology that network communication has become smooth. Medical practicing can discuss medical issues in medical forums. They can exchange images and messages in seconds and derive conclusions rapidly. They can seek advice and share knowledge in a favorable way over the Internet.

Medical imaging is a extended field that conducts with the techniques to produce images of the human body for medical purposes. Many of the modern methods of scanning and imaging are largely based on the computer technology. We have been able to execute many of the advance medical imaging techniques, thanks to the growing in computer science. Magnetic

resonance imaging employs computer software. Computed tomography makes function of digital geometry processing techniques to get 3-D images. Sophisticated computers and infrared cameras are in use for obtaining high-resolution images.

Computers are wide used for the generation of 3-D images in medicine. So, that is all the function of computer in medical field. The usage of computer in medical field give a lot of benefit and also ease all the works. We don't need more files and writing all over the night to complete the tasks and to settle down the works if we use computer in this field. 1) Virtual Classes Help medical students in having a class virtually so students can pass notes and assignments easily. 2) Options for the patients Patients can choose a specialist from any part of the world.

They are not limited by geography or extra traveling costs. Another advantage of this technology is that it is more precise and accurate than most human surgeons, so it can increase the likelihood of the patients survival, especially in complicated surgeries like brain surgery. 3) Education Source of information regarding the medical terms such as various kinds of diseases that needs to be known by doctors and medical students. Internet Surgery makes use of fast Internet connections and robotic tools to perform the actual surgery.

The surgeon does not have to be present in the room for this surgery to take place. 4) Increasing accuracy in helping patients There are so many ways in which computers have directly affected the productivity and accuracy of doctors. One small device that was introduced a few years ago was the

handheld computer, or palm pilot. This small, yet very effective device has been a great advancement to doctors. Doctors have been able to use these devices as medical look-ups. By installing a code reference and other medical information, sectors will be able to treat patients a lot more accurately.) Storage of information Patient records are stored on computer databases in the medical field. The medical history of a patient includes physical symptoms, diagnoses, treatments, and even family medical history. Details of the medications prescribed are stored together with details of any that cannot be prescribed, such as an allergy to penicillin. Appointments are scheduled using a computer database. Billing information is also stored. Hospitals and surgeries depend on computers for administrative and financial functions. Helps in Security and Alarm and Diagnosis of patients Hospital monitoring equipment is often based on computer programming. Emergency alarms, bed beeping systems and X-ray machines are all examples of equipment using computer technology. Magnetic resonance imaging (MR.) and scans are good examples of how computer technology has helped the medical field. High-resolution images are achieved with the use of sophisticated computers and infrared cameras. 7) Communications Computer networking facilitates fast communication. Doctors on opposite sides of the world can communicate instantly via the internet.