

# Introduction to computers essay sample

[Technology](#), [Computer](#)



## Chapter 1

1. What is the most important difference between a computer and a calculator

A calculator can only process numerical data, which means, it can only work with numbers, but a computer can process alphanumerical data, such as numbers, letters, graphics, pictures, video, audio files and much more. A calculator can only be programmed to calculate numbers. A computer can use thousands different programs.

2. How are computers today similar to those from World War II? How are they different?

Similar: Computers today and those from World War II both had to be programmed. They both receive input and process information, produce output and store data.

Different: The computer from WW II were huge, bulky, and very expensive. There were only few computers at that time. ABC ( Atanasoff-Berry Computer) was created in 1939, and it was capable of solving systems of linear equations. Another computer, Mark I was created in 1944. It was 51-foot-long, 8-foot-tall monster, that was very noisy and slow, but computed ballistic tables for the US Navy. Those computers didn't have monitors, mouse, and other input devices that we know now. They didn't have memory, storage devices, and microprocessor. Instead of microprocessors they used vacuum tubes to store and manipulate data. Modern computers are a lot smaller, cheaper, and faster. They can use hundreds and thousands of different programs for lots of different purposes.

3. The way people use the Internet has changed since the early days. How?

In the beginning, the Internet was used only by the US government for connecting computers. Later, in 80s, it was used by researchers academics and government officials for transferring data and exchange electronic mail (email).

When later, in 1990s, the WWW ( World Wide Web) was invented, people were able to transfer not only a plain text, but also pictures, sounds, videos, and other files. Since then, millions of people were able to connect to the Internet through browsers, to communicate, to search for and to share information.

4. What types of computers typically employ timesharing?

Timesharing is used by mainframe computers and terminals. Via timesharing, several computers-terminals can use the same mainframe computer to gather needed information at the same time. This function is widely used by travel agents at the airports, or by many research scientists and engineers, etc.

## Chapter 2

5. Draw a block diagram showing the major components of a computer and their relationships. Briefly describe the function of each component.

6. Why is the international computer industry shifting from ASCII to Unicode for representing text?

ASCII ( American Standard Code) is designed for American English Alphabet. Unicode is used to support multilingual computing, to accommodate Chinese, Greek, Hebrew, Japanese, Arabic, Russian, and other languages.

7. Why is information stored in some kind of binary format in computers?

A computer can only understand information if it has been broken into bits. A bit is a smallest unit of information a computer can process. A bit can have one of two values: 0 or 1, which is called a binary format.

### Chapter 3

8. List five input devices and three output devices that might be attached to a PC. Describe a typical use for each. INPUT:

1. Keyboard – used to send signals to the computer.
2. Pointing devices – are designed to move pointer around the screen and point to specific characters or objects. Include mouse, game controllers, touch screen, touchpad, and more.
3. Multi-touch input devices – used to accomplish complex tasks quickly by using multi-finger, or multi-hand gestures. For example, the iPhone from Apple.
4. Reading Tools – designed to allow computers to read marks rapidly that represent codes. For example, Optical mark readers, magnetic ink character readers, bar code readers, radio frequency identification (RFID) readers, etc.

5. Digitizing devices - used to digitize (convert into a digital form) a printed text, video, or pictures. For example, a scanner, a digital camera, a webcam.

#### OUTPUT:

1. Screen output - serves as a one-way window between the computer user and the machine. Example - a display, or a monitor.

2. Paper output - a printer, used to produce a hard copy on paper of any static information that can be displayed on the computer's screen.

3. Sound output - a sound card, that enables the PC to accept microphone input, play music and other sound through speakers or headphones, and process sound in a variety of ways.

9. Name and describe three special-purpose input devices people commonly use in public places, such as stores, banks, and libraries.

1. A touch screens - used for entering commands and answering questions

2. A bar code reader - used for scanning product information, and a scale for security and accuracy

3. Credit card, or a library membership card reading device.

10. What are the advantages of nonimpact printers, such as laser printers, over impact printers? Are there any disadvantages? Nonimpact printers can print high quality graphic images, while impact printers cannot because they are limited to printing characters only (line printers), or low-resolution graphics (dot matrix printers). Nonimpact printers can quickly print high—

quality text and graphics. There are laser and inkjet nonimpact printers. Disadvantage is that they are more expensive than impact printers, especially laser printers.

#### Chapter 4

11. What is the relationship between higher level languages and machine language?

Every computer processes instructions in a native machine language, which uses numeric codes. Most programmers use programming languages, such as C++, C#, Java, and Visual Basic. NET to write programs. These languages are called high-level languages. They make possible for scientists, engineers, and businesspeople to solve problems using familiar terminology rather than cryptic machine instructions.

12. Most computer software falls into one of three categories: compilers and other translator programs, software applications, and system software.

Describe and give examples of each

Compiler – is a one of the translator programs that compiles a complete translation of the program from a high-level computer language into machine language before the program runs for the first time.

Software applications – different software applications are used by computer users, such as publishing, accounting, graphic, multimedia, educational programs, and many more. The software applications can be bought similar to buying movies on DVD, but with some differences. A computer software generally includes documentation, which explains how to install, uninstall,

and use the software. A software can be updated. A software must be comparable with the operating system on the computer. The software comes with disclaimers. When you are buying a software, you are not actually buying the program, but rather a license to use this program.

System software – an Operating System (OS) is a system of programs that performs a variety of technical operations, from basic communication with peripherals to complex networking and security tasks. The Operating System keeps the hardware running efficiently and makes the process of communication with the hardware easier. Operating system software runs continuously whenever the computer is on.

13. Write an algorithm for doing a load of laundry. Check your algorithm carefully for errors and ambiguities.

14. What is a graphical user interface? How does it differ from a character-based interface? What are the advantages of each? A Graphical User Interface – abbreviated GUI, can display graphics, and is not limited to displaying rows and columns of characters. It can individually control every dot on the screen. The graphical user interface has huge advantage over the character-based interface because it is more user-friendly, and is more attractive visually. In the years since the introduction of the original IBM PC, graphic displays have become the norm.

Memory. RAM ( Random Acces Memory)

Stores programs and data that need to be instantly accessible to the CPU

### CPU, or Processor (Microprocessor)

Is the computer's "brain". Processes information, performs arithmetic calculations, and makes basic decisions by comparing information values.

### Output Device(s)

Send information to the outside world.

- Monitor
- Printer
- Speakers

### Input Devices(s)

Accept input from the outside world.

- Keyboards
- Mouse
- Microphone

### Storage Device(s)

- Hard drive
- CD
- DVD
- Flash Drive

Algorithm for doing a load of laundry:

1. Separate white and color laundry
  1. a. Put white laundry in one basket



1. b. Put color laundry in another basket.
2. Put the color laundry into the washer
3. Put one cup of the laundry detergent into the detergent slot.
4. Set the washer cycle as “ regular”
5. Push the “ start” button on the washer.
6. When done, take the laundry out of the washer and put it in the dryer.
7. Set the dryer cycle as “ regular”
8. Push the “ start” button on the dryer
9. When done, remove the color laundry from the dryer
10. Put the white laundry into the washer
11. Put one cup of a laundry detergent into the detergent slot
12. Put one cup of bleach into the bleach slot
13. Set washer cycle as “ whites”
14. Push “ start” button on the washer
15. When done, take the laundry out from the washer and put into the dryer.
  
16. Set the dryer cycle as “ regular”
17. Push the “ start” button on the dryer
18. When done, take the laundry out from the dryer.