Essay Sample

What were early electronic computing devices designed to do?

The "computer grew out of a human need to quantify" (Beekman and Quinn, 2008, p. 5). Early electronic computing devices were designed to quantify complicated calculations. We will take a brief look at history and discover the purposes of these devices. We will examine the development of the hardware and the key terms in technology.

In the early nineteenth century engineers relied on mathematical tables that human "computers" labored many hours to produce (Beekman and Quinn, 2008). These tables were full of mistakes. Mathematicians were looking for devices that could calculate these tables with no errors. According to Beekman and Quinn (2008) it was laziness that motivated Konrad Zuse to complete the Z1. The Z1 was the first programmable, general-purpose digital computer (Beekman and Quinn, 2008). He asked the Nazi military for more funding to build a faster electronic computer to help crack enemy codes during World War II but was turned down (Beekman and Quinn, 2008). Meanwhile in 1943 a team lead by mathematician Alan Turning completed Colossus. Colossus allowed the British military intelligence to "eavesdrop on even the most secret German messages throughout the remainder of the war" (Beekman and Quinn, 2008, p. 6). This proved to leaders the value computers would give them in war.

Computer hardware evolved very quickly and new technology replaced the old (Beekman and Quinn, 2008). For example, the transistor was invented in 1948 as a substitute for the vacuum tube (Beekman and Quinn, 2008). The Space Race also encouraged further enhancements in computer technology. The space program needed smaller and more powerful computers than the transistor-based machines (Beekman and Quinn, 2008). "So researchers developed the integrated circuit: a small silicon chip containing hundreds of transistors and other electronics" (Beekman and Quinn, 2008, p. 7). These integrated circuits replaced the transistors because of reliability, size, speed, efficiency and cost (Beekman and Quinn, 2008). For these very reason "in 1971 Intel engineers developed the first microprocessor – a single silicon chip containing all of a computer's computational components" (Beekman and Quinn, 2008, p. 7). Soon the marketplace was flooded with inexpensive microprocessors in watches and pocket calculators (Beekman and Quinn, 2008). The personal computer revolution began in the late 1970's with Apple, Commodore, Tandy and other companies producing low cost, typewriter-sized, microprocessor-based computers (Beekman and Quinn, 2008). I remember my first experience with these computers in school and how a begged my parents to get me one. Now, 30 years later, I am not sure I could live without one. The PC has certainly changed America's and the world's culture forever.

Our need to quantify has influenced our history. These early electronic computing devices designed to handle mathematical calculations has helped us reach our goals. From breaking enemy codes to computing ballistic tables these early computing devices paved the way for the modern computer.

References
Beekman, G. and Quinn, M. (2008). *Tomorrow's technology and you.* Upper Saddle River, NJ: Pearson Custom Publishing.

Essay Break down

Writing format:

The essay followed the CIS rubric: An introduction, supportive paragraphs and a concluding paragraph.

- The introduction restated the question and explains the main points the essay will cover.

- The body gives details and examples to explain the main concepts and *key terms fully.

   *Key terms are the blue words in the CIS105 textbook. They should be clearly defined in each essay. Be sure to include all the key terms in a section.

   "So researchers developed the **integrated circuit:** a small silicon chip containing hundreds of transistors and other electronics" (Beekman and Quinn, 2008, p. 7).

- The concluding paragraph is a summary of the main points of the essay. It again answers the question in the conclusion.

APA format:

A direct quote from the textbook requires quotations. APA format requires a page number for a direct quote.

   The "computer grew out of a human need to quantify" (Beekman and Quinn, 2008, p. 5). Early electronic computing devices were designed to quantify complicated calculations. We will take a brief look at history and discover the purposes of these devices.

This is an example of using the authors in the sentence. Be sure to include the publication date.

   According to Beekman and Quinn (2008) it was laziness that motivated Konrad Zuse to complete the Z1.

When no author or date is mention in a sentence you should include a parenthetical/ in text citation. This should be added after each sentence that you paraphrase from the textbook.

   He asked the Nazi military for more funding to build a faster electronic computer to help crack enemy codes during World War II but was turned down (Beekman and Quinn, 2008).

The reference for the textbook should be at the end of each essay.

Beekman, G. and Quinn, M. (2008). *Tomorrow's technology and you.* Upper Saddle River, NJ: Pearson Custom Publishing.