How grace hopper contributed to the early computer programming development

Science, Computer Science

Technology is everywhere in modern societies. The computing power of the computers that exist today are far more powerful than what people in the past would have ever thought would be possible. All the computers, iPhones, and other similar devices are controlled by programming, code that instructs a device to do something. In the very early stage of computers, programming was tedious and difficult, and someone had to fix that problem. Grace Hopper, a computer scientist and a Rear Admiral in the U. S. Navy, did just that. Grace Hopper was one of the most influential people in early computer programming because she created a revolutionary concept, helped popularized computers in the business field, and left a legacy.

In the very early stages of computers, programming was done in numerical languages. As a result, usually mathematicians were the ones programming. Hopper's concept would revolutionize programming. Ethlie Ann Vare and Greg Ptacek, authors who wrote about women inventors, writes that " Everything had to be translated into a function of ' 0' and ' 1,' a very arcane and time-consuming way of communicating" (Vare, Ptacek 110-123) Hopper's concept is that to allow programmers to use an English-like language to instruct computers instead of just 0's and 1's. After making a computer compiler, she discovered that a person would have to start from scratch every time they wanted to write a program. In order to fix that, she decided to " write a basic program that gives every computer a basic understanding of its function, like how to take orders." (Vare, Ptacek 110-123) A benefit of Hopper's compiler is that " It let programmers use math symbols and other shortcuts instead of binary coding of ones and zeros" (Deagon A04) This greatly shortened the amount of time it took in order to

program. Her concept would lead to a massive increase in the use of computers in the business field.

Improving her compiler, Hopper helped create a compiler that businesses could use. The improved version was called Flow-matic. However, many businesses starting to create their own version, upsetting her and others in the computer industry. Hooper and a group of people decided to create a unified language for all digital computers. After a couple meetings, “ The programming code they created was called the Common Business-Oriented Language, or COBOL” (“ Hopper, Grace”). COBOL quickly became one of the most widely used languages at the time. It was so successful because it “ was created as a way of making programs easier to read, write, and understand” (“ Hopper, Grace”). As a result, almost everyone could create programs, without having to have the amount of knowledge of a mathematician. This means that “ For the first time, a computer user could tell the machine to ‘ quit’ instead of to ‘ 01100110101100101001100110011 ...’ and on and on” (Vare, Ptacek 110-123). The impact of Flow-matic and COBOL is a mere fraction of the legacy of what Hopper left behind.

Grace Hooper left behind many legacies that still influence people and computers today. For example, she helped popularize “ computer bug.” After finding that a moth inside a computer after it was having problems, her team “ taped the moth in their logbook with the note, ‘ First actual case of bug being found’” (Slingerland 36-37). As a result, the words “ bug” and “ debug” are now popular. Also, she believes that there is no limit to as what computers can do, seen when Hopper says, “ They’ll only be limited if our

imaginations are limited. It’s all up to us. Remember, there were people who said the airplane couldn’t fly” (Vare, Ptacek 110-123) Even today’s computers are continuously improving and being used for different things. The team, including her, that helped create COBOL, helped create something that would grow into something better.

“ COBOL can be seen as a forerunner of BASIC, an even more simplified programming language developed by John Kemeny and Thomas Kurtz five years later” (“ Hopper, Grace”). Today, BASIC is a very popular family of languages, with many branches.

In conclusion, Grace Hopper had a large role in the development of early computer programming because of the concept she created, how she helped increase the use of computers in the business field, and the legacy she left behind. Her concept of using an English-like language made programming much easier and faster, also allowing almost anyone to program. This helped increase the use of computers in businesses. For every medal and award she has won, Hopper has left an everlasting impact on the technological world around us. To many, she was a visionary.