Margret Heafield Hamilton, born on August 17th, 1936 is a famous, admirable and inspiring Woman in Technology. She created the term software engineer to describe her work. Hamilton has made an impact the field of technology and helped shape what we call Software Engineering today. Margaret H. Hamilton "is the person who came up with the idea of naming the discipline, "software engineering", as a way of giving it legitimacy.

> *"When I first came up with the term, no one had heard of it before, at least in our world… It was a memorable day when one of the most respected hardware gurus explained to everyone in a meeting that he agreed with me that the process of building software should also be considered an engineering discipline, just like with hardware. Not because of his acceptance of the new 'term' per se, but because we had earned his and the acceptance of the others in the room as being in an engineering field in its own right."*

To date, Hamilton has published over 130 papers, proceedings, and reports about roughly 60 projects and six programs which she has been involved in. In 2016, on November 22, U.S. President Barack Obama awarded her the Presidential Medal of Freedom for her work leading development of on-board flight software for NASA's Apollo Moon missions.

Born and raised in a town called Paoli, Indiana, she graduated from Hancock High School. She left for college at Michigan in 1955. She earned a B.A. in Mathematics with a minor in Philosophy (1958). She took an interim position in MIT in 1960 to develop weather prediction software and did postgraduate work in meteorology. At the time, Hamilton wrote that computer science and software engineering were not yet disciplines; instead, programmers learned on the job with hands-on experience. Hamilton herself was self-taught, developing her skills through experience and worked with teams in a time when no schools taught software engineering, so they had to work out any problems they had on their own.

In 1961 Hamilton began work on the Semi-Automatic Ground Environment (SAGE) Project (Lincoln Lab). She was one of the programmers who wrote software for the first AN/FSQ-7 computer (the XD-1), to search for unfriendly aircrafts; she also wrote software for the Air Force Cambridge Research Laboratories. She continued this

work till 1963. Her efforts on this project that made her a strong candidate for the position at NASA as the lead developer for Apollo flight software.

Margaret Hamilton at 33-years old was one of the few women at MIT's Charles Stark Draper Laboratory, which in the early 1960's, was developing important software for NASA. Hamilton's innovations go beyond the feats of playing an important role in getting humans to the moon. Without her contributions to the space program, there's no telling where it may have been today. It is said that Margaret Hamilton used code to change the world and conquer space.

The Apollo and Skylab programs would mark a new era in space exploration. Hamilton led the team that developed the algorithms for in-flight software used to control the Apollo command module, lunar lander, and eventually, the world's first space station, Skylab.

Her areas of expertise include systems design and software development, enterprise and process modelling, development paradigm, formal systems modelling languages, system-oriented objects for systems modelling and development, automated life-cycle environments, methods for maximizing software reliability and reuse, domain analysis, correctness by built-in language properties, open-architecture techniques for robust systems, full life-cycle automation, quality assurance, seamless integration, error detection and recovery techniques, man-machine interface systems, operating systems, end-to-end testing techniques, and life-cycle management techniques.

From 1976 through 1984, Hamilton was the CEO of a company she co-founded called Higher Order Software (HOS) to further develop ideas about error prevention and fault tolerance emerging from her experience at MIT.

In March 1986, she became the founder and CEO of Hamilton Technologies, Inc. in Cambridge, Massachusetts. The company was developed around the Universal Systems Language (USL) and its associated automated environment, the 001 Tool Suite, based on her paradigm of Development Before the Fact (DBTF) for systems design and software development.