

# Biography of Linus Torvalds

## Ciaran Ruane

### 15323303

#### Personal Life and Programming Experience

Linus Torvalds is one of the most famous names in software engineering, having created several very widely used pieces of software. He was born in 1969 in Finland, and began programming first at the young age of 11, writing in BASIC and then machine code without use of an assembly language. He found it hard to find software for his "Sinclair QL" in Finland, he instead wrote his own assembler and editor. It was clear from this that he had a keen interest in computers and how they worked.

Torvalds graduated with a master's degree in computer science from the University of Helsinki in 1996. He had first been exposed to UNIX in 1990, and in 1991 received a MINIX copy which allowed him to begin work on Linux. Early prototype versions of Linux were released later that year, with the first full version (1.0) being released on 14<sup>th</sup> March, 1994.

#### Linux

Linux is Torvalds' most well known creation, having the largest number of units of software in actual use of any general purpose operating systems. Linux is also commonly used as an operating system for servers, as it is lightweight and fast operating system. Other operating systems, such as Chrome OS, are also based on the Linux kernel, further showing how prominent it is in the world of computers. Linux is currently the primary operating system on approximately 2.3% of desktop computers. Since Linux now has thousands of contributors, approximately 2% of the current Linux kernel was written by Torvalds.

Richard Stallman started the GNU Project in 1983, which was a "complete Unix-compatible software system", comprised entirely of free software. He had a goal of making a computer operating system that someone could use without any paid software, entirely free. Torvalds stated that if the GNU Project had been available at the time, he would not have begun work on Linux. Stallman and Torvalds seemed to have similar ideologies, as Torvalds believes "open source is the only right way to do software". He was criticized for his use of the software "BitKeeper" (which was not open source) for version control in linux, so he then wrote his own free replacement software. This was how Git was created, and is now one of the most widely used version control applications in the world.

## Git

Torvalds created Git as a replacement for BitKeeper, but intentionally avoided conventional approaches, which makes Git significantly different to other version control systems. One of the design choices he made was to make branches very lightweight, as he had been used to working on Linux already, he assumed that changes would be merged more often than they are written because each piece of code would be passed around to be reviewed.

## Achievements

Torvalds, along with Shinya Yamanaka, won the 2012 Millennium Technology Prize by the Technology Academy Finland "in recognition of his creation of a new open source operating system for computers leading to the widely used Linux kernel". He also received the 2014 IEEE Computer Society Computer Pioneer Award, and in 1999, he was named as one of the world's top 100 innovators under age 35 by the MIT Technology Review TR100.