Dennis Ritchie

Dennis Ritchie is revered by many as the Godfather of programming. As the creator of the C programming language and co-creator of the Unix operating system, it is extremely easy to understand why he would be revered as so. The influence of the C programming language to provide a system level language to replace assembly language in writing operating system languages can be seen throughout many modern programming languages including Java, C++ and Pyhton. The imperative, structured programming as well as the syntax of these languages all have borrowed elements from the C programming language.

Dennis Ritchie was born on September 9th, 1941 in Bronxville, New York to Jean McGeeRitchie and Alistair E. Ritchie, he later moved to Summit, New Jersey where he finished his High School education. His father was a longtime scientist at what is now the prestiguous Bell Lab’s, he also co-authored “The Design of switching Circuits”. Dennis proceeded to go to Harvard University where he graduated with an undergraduate degree in Physics in 1963 and a degree in Applied Mathematics in 1968. Ritchie noted in his biography for Bell Labs that “My undergraduate experience convinced me that I was not smart enough to be a physicist, and that computers were quite neat, my graduate school experience convinced me that I was not smart enough to be an expert in theory of algorithms and aslo that I liked procedural languages better than functional ones.”  
  
Dennis followed his father into working in the Bell Labs in 1967 in their computing sciences research center where he began working on the “Multics” project. Multics (Multiplexed Information and Computing Service) is an influential early time-sharing operating system that heavily influenced all modern operating systems either through Unix or the Windows NT operating system. The time-sharing philosophy of an operating system was an emerging paradigm that is used by all modern operating systems, time-sharing allows multiple users to utilise the hardware of what at the time was very ineffiecient computers that often were left idol waiting for more user input to proceed with the program, time-sharing allowed multiple users utilise the hardware during these times. Multics also was the first operating system to implement a hierarchal file system.  
  
Bell Labs ultimately pulled out of the Multics operating system in 1969 and thus Dennis’s contributions to it ceased. Dennis and his life long colleague Ken Thompson then began to work on what would come to be the Unix operating system in 1970. The Unix operating system was initially born from Thompson wanting to translate a game he had wrote on to a new machine. Dennis began working with Thompson and a team on the Unix system, they were frustrated by the size and complexity of the Multics system and decided that they liked the idea of what the operating system was trying to achieve but not how it was trying to achieve it. They sought to integrate simple programs that they used regularly as researchers as services on an operating system that time shared between many users who communicated with it through a terminal.   
  
Dennis worked on creating a compiler for BCPL during his time on working on the Multics mainframe. His colleague Thompson had adapted BCPL to a new language he called “B” that they were considering writing the operating system in at the time. The team were migrating from using a PDP-7 mini computer to a PDP-11 minicomputer at the time and ran into issues with the “B” language and the different compatibilities of the two machines, including byte addressibility. This led Dennis to add new data structures and syntax to the language creating the new language “C”, the successor of “B”.   
  
They began rewriting the Unix system using their new language and according to Ritchies close colleague Thompson “the language grew up with one of the rewritings of the system and, as such, it became perfect for writing systems.” The significance and importance of the C language is very rooted in this idea that it was created for operating system design as well as having in the past to rewrite operating systems for new devices, C and the Unix system was created with the aim of having the least amount of modifications needed so that it would work with new machines. Ritchie’s contributions to Research Unix at the time was namely the language and the system’s porting to different machines and platforms. Ritchie was famous for his modesty stating that many of the improvements they made to the language and the operating system just seemed like “a good thing to do” and defended that anyone in his position would have done the same. Ritchie and