Influential Software Engineer – James Gosling

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"Java is C++ without the guns, clubs and knives"

My name is Michael McKay and I am doing an essay on an influential software engineer of my choice. I have chosen James Gosling, known mainly for founding the worldwide known programming language Java. I chose Gosling because I believe Java is the most known programming language in the world. It may not statistically be the most used, but anytime I tell anyone that I study computer science they very often say something along the lines of "oh java, and stuff like that?" For this reason, I think Java is the most popular language, and I wanted to learn more about the man behind the invention so that's why I have chosen James Gosling. I will also be including a few of Gosling's most famous quotes!

James Gosling was born on May 19th, 1955 (age 63). He was born near Calgary, Alberta in Canada. He didn't leave home for college. He studied in the University of Calgary where he received a Bachelor of Science in computer science. He did however move south to Pennsylvania where he received his M.A and Ph.D in computer science from Carnegie Mellon University. During his time here, he also wrote a version of Emacs called Gosling Emacs or Gosmacs. Gosling initially allowed Gosmacs to be distributed with no formal restrictions, but later he decided to sell it to UniPress. It is now discontinued but this shows his work ethic and promising potential at a young age. After college he joined Sun Microsystems.

Gosling spent 26 years at Sun Microsystems. Sun was an American company founded in 1982 based out of California, that sold computers, components for computers, software and information technology services. Sun was a major contributor to open-source software, this is clear because it bought an open-source database management system called MYSQL for 1 billion dollars in 2008. Two Years later in 2010, Sun was acquired by Oracle Corporation for 7.4 billion US dollars. While Gosling was at Sun Microsystems, he designed the programming language Java.

"It makes my head explode when there are people who think you can do everything in HTML"

Gosling created Java in June 1991, along with Mike Sheridan and Patrick Naughton. Gosling decided to design Java with a C/C++ style syntax, so that system and application programmers would find it familiar. Interestingly, Java was originally designed for interactive television but this didn't work due to the fact that it was too advanced for the digital cable television industry at the time. It was also originally named Oak after an oak tree situated outside Gosling's office. The name was later changed to Green and eventually the designers settled on Java after Java coffee. As of 2016, Java reported 9 million users/developers.

When creating Java, Gosling had five primary goals for the language. First off, he wanted it to be "simple, object-oriented and familiar." Secondly, it needed to be "robust and secure." Next up, it had to be "architecture-neutral and portable." He wanted it to execute with "high performance." And finally, the language had to be "interpreted, threaded and dynamic." He believed if the language supported these five different attributes, it would work efficiently and be as error free as possible.

The first public implementation of Java was Java 1.0, released by Sun in 1996. Java was designed to have as few implementation dependencies as possible. The developers wanted people to be able to "write once, run anywhere" with Java. What this means, is that already compiled Java code can run on all platforms (that support Java) without the need for recompilation. Major web browsers quickly incorporated the ability to run small Java applications (or applets) in web pages, this made Java popular quite quickly. In November 2006, Sun released a lot of its Java virtual machine (JVM) as free and open-source software, under the terms of the GNU General Public Licence. (GNU GPL, guarantees users the ability to run, study, share and modify the software). A few months later in May 2007, Gosling and Sun made all of its JVM's core code available under free software/open-source distribution terms, apart from a small portion of code that Sun did not hold the copyright to.

In late 2009 to early 2010, Oracle purchased Sun Microsystems which included Java. In March 2011, James Gosling made the decision to resign from Oracle. He then joined the mighty Google. His time in Google was short lived as he left six months later, this is what he had to say: "I've surprised myself and made

another career change. I had a great time at Google, met lots of interesting people, but I met some folks outside doing something completely outrageous, and after much anguish decided to leave Google." He left Google following a colleague (Bill Vaas) and joining a startup called Liquid Robotics.

Liquid Robotics is just another one of many projects Gosling has been involved in, he really has done a lot. Liquid Robotics is an American marine robotics corporation that designs, manufactures and sells the Wave Glider. The Wave Glider is a wave and solar powered unmanned surface vehicle. What is basically does is harvest energy from ocean waves for propulsion (in order to move forward), meaning it can spend many months at sea at a time, collecting and transmitting ocean data. In late 2016, Liquid Robotics was bought by Boeing. Following the acquisition, Gosling left Liquid Robotics to work at Amazon Web Services as a distinguished engineer.

"During the integration meetings between Sun and Oracle, where we were being grilled about the patent situation between Sun and Google, we could see the Oracle lawyer's eyes sparkle"

Now in 2018, James Gosling is up to a number of things. He is an advisor at the Scala company Lightbend, he is an independent director at Jelastic, a strategic advisor for Eucalyptus, and is also a board member of DIRTT Enviornmental Solutions.

James Gosling is known for many different contributions concerning the IT world but is also known for his love of proving "the unknown". He has stated that is favourite irrational number is root2. I didn't even know one could have a favourite irrational number… Apparently, Gosling has a framed picture of the first 1000 digits of root2 in his office.

The best thing about Gosling's Java, was that it was built to be a practical tool to get work done, and it does just that. It popularized good ideas form earlier languages by repackaging them in a format that was familiar to the average C coder, making Java much easier to learn than other object-orientated C descendants. Another amazing thing about Java, is that thousands of programming languages have risen since Java, but most have never achieved more than a tiny bit of attention before eventually disappearing to the programming language graveyard. Java hasn't even seen the graveyard. Arguably, the most important contribution of open source to Java is JUnit. Test-driven development has ascended from an experimental practice of a few

programmers to the standard way to develop software. Martin Fowler, another software engineer, said “Never in the field of software development was so much owed by so many to so few lines of code,” these lines of code were of course written in Gosling’s Java. This is the massive effect that not only Java has had on programming languages, but everyone’s lives.

When writing this biography, I gathered most of my information from Wikipedia, InfoWorld and my general knowledge of the Java programming language. I learnt a lot about James Gosling and the very impressive programming language Java. It is safe to say that Gosling has had a massive effect on the world of computer science and is a very inspiring and key software engineer.