GUIDO VAN ROSSUM

CS3012 Written task - Biography of a key software engineer

Stephen Moran

Student No: 16319039

Introduction and Background

A software engineer that interests me is Guido Van Rossum, a Dutch engineer who is most famous for the development of the general purpose programming language Python. He was born on the 31st of January 1956 in the Netherlands (Hsu, 2018). Van Rossum began developing Python during the late 1980s and continued to maintain it until the summer of 2018. Python has now become one of the most popular programming languages in the world with a huge range of applications. I was drawn to Guido Van Rossum while researching for this assignment for a number of reasons. Recently I have been using Python for a lot of my college assignments and personal projects and therefore, learning more about the language's origin and creator appealed to me a lot. As I delved deeper and discovered Van Rossum's dedication to the Python language, passion for education and passion for open-source software I became increasingly interested in both his life and career and was keen to learn more.

Early Life, Education and Career

Van Rossum was born the eldest of three children in Haarlem, Netherlands. His father was an architect and his mother was a school teacher. He first learned about computers while majoring in mathematics at the University of Amsterdam (Hsu, 2018). Van Rossum continued his studies at University of Amsterdam where he received his master's degree in computer science in 1982 (Khamlichi, 2015).

After graduating Van Rossum went to work for Centrum Wiskunde & Informatica (CWI). It was during his time at CWI in the 1980s that Van Rossum began working on Python (Khamlichi, 2015). He first moved to the United States in 1994 as a guest researcher at National Institute of Standards and Technology (NIST), then moved to Corporation for National Research Initiatives (CNRI) before working for an internal team called Python Labs, developing Python full time (Hsu, 2018).

Van Rossum became concerned CRNI may restrict licencing on Python, threatening its status as an open-source status. This led to his departure in 2000. Van Rossum then joined beOpen a start-up focused on web portals. After the dot.com crash beOpen failed but fortunately Van Rossum and his PythonLabs team were acquired by Zope.com. Zope.com were users of Python and shared Van Rossum's vision to maintain Python as an open-source project (Hsu, 2018).

Van Rossum left Zope.com in 2003 for Elemental Security before finding his home at Google in 2005, where he was permitted to spend 50% of his time on Python (Rossum, 2018). At Google Van Rossum worked on project such as Mondrian, a code review tool (Kennedy, 2006) and later App engine, which provides scalable cloud backend for web apps (Hsu, 2018).

In 2013 Van Rossum parted ways with Google to work for Dropbox, a platform built on Python, where he remains today. Here he is a full time software engineer, ensuring that Python is being used as efficiently as possible (Constine, 2012).

Creation of Python

In December 1989, Van Rossum was looking for a hobby project to undertake over the Christmas holidays. It was at this time that Van Rossum was at CWI working with a language called ABC. Van Rossum found ABC both powerful and elegant language however, it never became popular on UNIX systems. He attributed the difficulty of adding new "primitive" operations to ABC, it's monolithic nature and limited I/O operations as possible causes for its unpopularity (Rossum, 1996).

Van Rossum decided to create his own improved language and came up with the Python, named after British comedy sketch show Monty Python's Flying Circus. In 1999 Van Rossum defined his goals for Python as a language (Hsu, 2018):

- An easy and intuitive language just as powerful as major competitors
- Open source, so anyone can contribute to its development
- Code that is as understandable as plain English
- Suitability for everyday tasks, allowing for short development times

In an interview in 2003 Van Rossum stated "I don't know how well people know ABC's influence on Python. I try to mention ABC's influence because I'm indebted to everything I learned during that project and to the people who worked on it" (Rossum, 2003). Van Rossum was adamant that Python was to be shared freely and made it available under a modified MIT licence before the term "open-source" was ever coined (Hsu, 2018).

Impact of Work

Despite his work on various projects over his career, Van Rossum's greatest achievement to date is without doubt Python. In 2017, Stack Overflow found that Python was the world's fastest growing programming language and this is for a variety of reasons (Heath, 2018). Trends such as the current boom in machine learning and big data has led to more developers learning the language and accelerated its growth.

Python is a very accessible language mainly due to its simple, elegant syntax and dynamic types. However, Python also appeals to experienced and professional programmers with rapid prototyping and high programmer productivity. It's flexibility give it a wide range of applications including GUI based desktop applications, web frameworks and apps, operating systems, language development and prototyping. Python has enabled many company companies to thrive such as Facebook, Instagram, Spotify, Netflix and Van Rossum's current employer Dropbox. Dropbox CEO Drew Houston has often expressed his admiration of the language and explained how Python has become invaluable by allowing his developers to write code once and deploy it everywhere (Houston, 2012).

It clear to me that Van Rossum's vision for Python is to make programming to be an accessible skill and not solely geared towards professionals. He shown this while working on the PythonLabs team at CRNI when he applied for a grant focusing on Python's use in education under the title "Computer Programming For Everybody." (Hsu, 2018). This theory is also supported by Python's short learning curve and ease of use.

Python's open-source status has been vital to popularity and the growth of its community. Van Rossum has fought hard since the inception of Python to maintain it as an open-source project. Originally, Python's community grew through mailing lists and newsgroups, eventually spawning workshops and conferences. The Python Software Foundation, a non-profit, was created in 2001 to hold and protect the intellectual property rights behind Python, keeping it free for everyone to use (Deibel, 2008). The community effects of Python as an open source project has allowed the language to grow rapidly and is responsible for its extensive support libraries and third party modules that allow it to interact with most platforms and other languages.

Van Rossum is renowned for his dedication to the Python language. This is clear to see from his leadership, strong vision and commitment to Python as an open-source project over the last three decades. Leading members of the Python community jokingly named Van Rossum the Benevolent Dictator for Life during the 1990's, a title that stuck from there on and one that is now used to describe open-source software development leaders who retain the final say in disputes or arguments within the community. Van Rossum served as Python's leading evangelist and spokesperson for spreading the use of Python until this year when he stepped down and said "I'm basically giving myself a permanent vacation from being BDFL". However, van Rossum still remains as an ordinary core dev for the foreseeable future (Fairchild, 2018).

Conclusion

Overall, I believe Guido Van Rossum is a remarkable individual who has made a huge impact on the world of software engineering. Over the course of this assignment I was struck by Van Rossum's unwavering vision for the Python programming language, his passion for open-source software and his interest in education.

It became evident very early as I researched Van Rossum that he has dedicated the vast majority of his working life to Python. I admire Van Rossum for making decisions that put the interests of Python and the community before his own commercial gain. Once again his dedication to the project was shown this year when he stepped down as the BDFL, after he no longer believed he was the best person to lead the community.

To me it appears that Van Rossum is a humble character who wants everyone to be have access to the world of computer science. I share Van Rossum's philosophy and view of open-source software and believe that by lowering the barriers of entry, into a field that many find to be alien, Van Rossum has facilitated great innovation. Catering for all levels of experience while maintain performance is a great achievement and it will be exciting to see what impact he makes next.

References

Constine, J., 2012. Dropbox Hires Away Google's Guido Van Rossum, The Father Of Python. [Online]
Available at: https://techcrunch.com/2012/12/07/dropbox-guido-van-rossum-python/
[Accessed 29 10 2018].

Deibel, S., 2008. Executive Summary: The Python Software Foundation. The Python Papers, 2(4).

Fairchild, C., 2018. Guido van Rossum Stepping Down from Role as Python's Benevolent Dictator For Life.
[Online]
Available at:
https://www.linuxjournal.com/content/guido-van-rossum-stepping-down-role-pythons-benevolent-dictator-life
[Accessed 29 10 2018].

Heath, N., 2018. Fastest-growing programming language? Python's popularity is still climbing. [Online]
Available at:
https://www.techrepublic.com/article/fastest-growing-programming-language-pythons-popularity-is-still-clim
bing/
[Accessed 25 10 2018].

Houston, D., 2012. Welcome Guido!. [Online]
Available at: https://blogs.dropbox.com/tech/2012/12/welcome-guido/
[Accessed 29 10 2018].

Hsu, H., 2018. 2018 Museum Fellow Guido van Rossum, Python Creator & Benevolent Dictator for Life.
[Online]
Available at:
https://web.archive.org/web/20180724114116/http://www.computerhistory.org/atchm/2018-chm-fellow-guido
-van-rossum-python-creator-benevolent-dictator-for-life/
[Accessed 22 10 2018].

Kennedy, N., 2006. Google Mondrian: web-based code review and storage. [Online]
Available at: https://www.niallkennedy.com/blog/2006/11/google-mondrian.html
[Accessed 22 10 2018].

Khamlichi, M., 2015. Guido van Rossum The Python Creator. [Online]
Available at: https://www.unixmen.com/guido-van-rossum-python-creator/
[Accessed 22 10 2018].

Rossum, G. v., 1996. Foreword for "Programming Python" (1st ed.). [Online]
Available at: https://www.python.org/doc/essays/foreword/
[Accessed 25 10 2018].

Rossum, G. v., 2003. The Making of Python [Interview] (13 January 2003).

Rossum, G. v., 2018. Guido van Rossum - Resume. [Online]
Available at: https://gvanrossum.github.io/Resume.html
[Accessed 22 10 2018].