

Python

Efficiency (A)

Python is really efficient tool (programming language). You can use it, when creating a fast prototype in order to test You business logic in very early development phase as well as production ready core applications. There are some major widely used platforms that use Python. For example, Dropbox, Reddit and even some parts of Instagram and Google. (1, 3, 4)

Simplicity (A)

Compared to the C, for example, Python is relatively simple. Therefore, it can be used by people, who are not very familiar with programming. Finally, mathematicians can test their algorithms without much struggle. Some universities (including TalcTech) are taking advantage of this aspect and introduce first steps in programming in Python in order to make programming more clearer. (1)

Orthogonality (C)

It is really easy to mess things up in Python - there are a lot of roughly said “global” context. For example, many libraries take advantage of the built on “logging” functionality. That said, it is a real struggle to synchronize the logic level. Also as a dynamically typed language, mixing the data type operations is hardly inevitable. (1, 4)

Syntax and semantics (A)

Python has really good syntax. It is so plain and simple and therefore is easily teachable even to the children in primary schools. The main reason behind it that it was designed so in the very beginning of creating a language. (4)

Reliability (A)

Python runs in its own environment, which means that all the resources are given out as

they should. Developers do not have to struggle with low level program like buffer overflow derived from memory allocation problems. (1, 3)

Program verification (D)

It is really hard to say if Your code does not contain any errors. One can have faulty code running for several months without realising it. This happens, when faulty part does not get interpreted (is hidden in some rarely used if statement). There are some tools to overcome this, but sometimes these tools are just not good enough. (1)

Data and procedural (B)

One can define almost anything in Python. It has very useful data structures such as dictionaries and stacks. But it comes with a price. As the programmers do not have to specify data types, it is really hard to say, which kind of arguments functions/methods may have. (1)

Portability (B)

As Python is interpreted in its own so called “special environment”, it is really easy to transport Your code from one machine to another. The only strong requirement is that this other machine (computer) has to have Python environment installed. Grade “B” is given because of the difference between Python 2.x and 3.x, which is not backwards compatible. (1)

Total score: B

References:

- 1) <https://www.python.org/>
- 2) <https://dzone.com/articles/four-reasons-why-python-is-a-good-programming-lang>
- 3) <https://hackernoon.com/how-is-python-different-from-other-programming-languages-63311390f8dd>
- 4) https://www.python-course.eu/python3_history_and_philosophy.php

