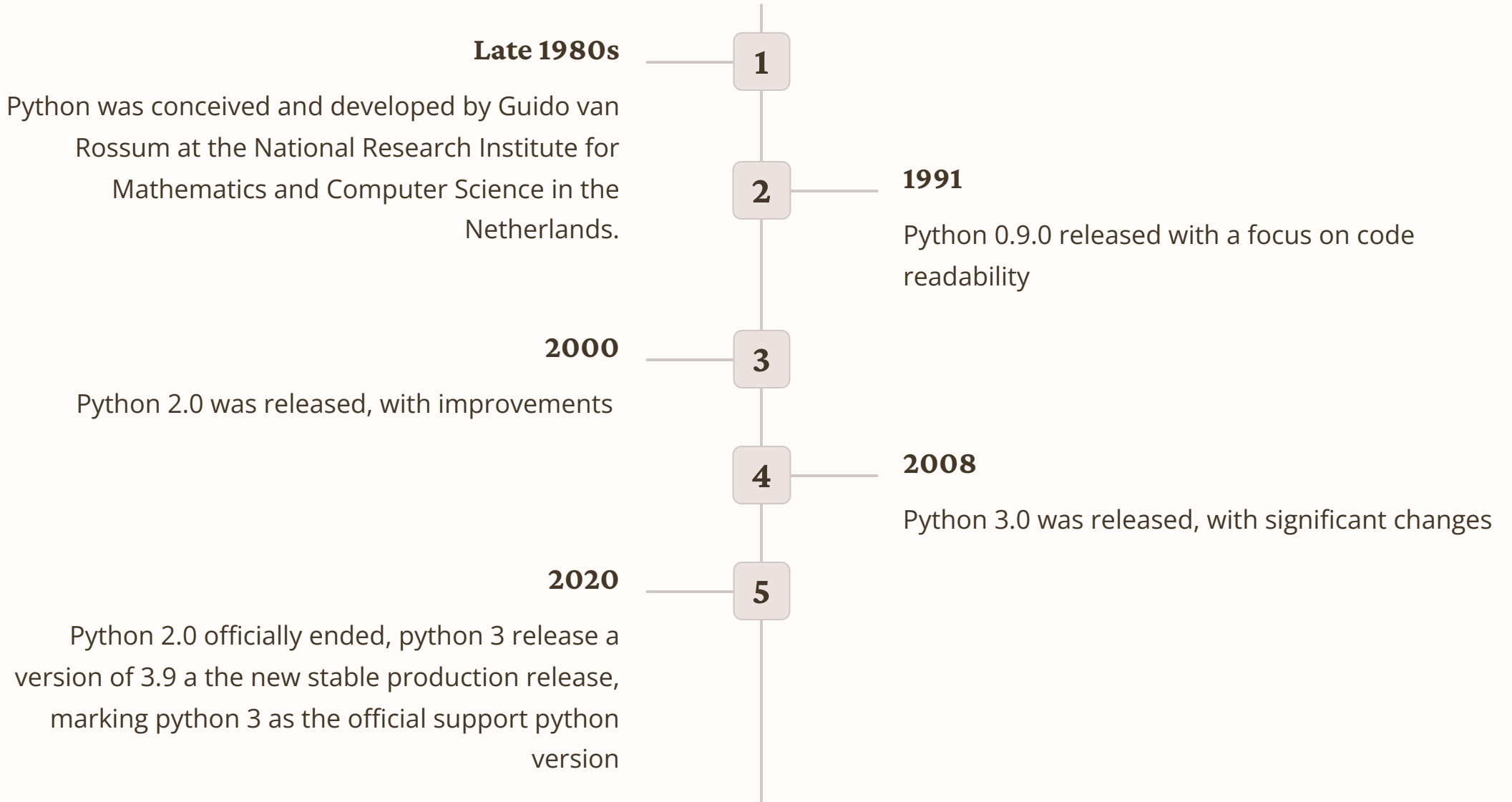


# Introduction to Python

Python is a popular, high-level programming language known for its simplicity, versatility, and powerful capabilities. Developed in the late 1980s, Python has evolved over the decades to become one of the most widely used languages in the world, with a strong and supportive community of developers.

# Python's History



# Unique Features of Python

## 1) Simple

- easy to read write and learn.
- clean and readable code using indentation and few symbols.
- eg:- `print("hello world")`

## 2) General-Purpose:

used for wide range of applications: Data Science, Web Development, Machine Learning, Deep Learning, Artificial Intelligence, Data Analytics

## 3) High-Level Language:

- language understood by human
- less code to express complex logic focus on code logic

## 4) Interpreted:

- Code executed line-by-line no compilation needed

## 5) Dynamically Typed:

- no need to declare variable types, determined automatically
- eg:- `x=5` (x is dynamically typed)

## Case Sensitive:

- upper case and lower case letters have distinct meaning
- eg:- `name` and `Name` (both treated as different)

# Key Concepts in Python

## Identifiers:

**name assign** to represent variables, functions, classes etc.

eg:- user\_age = 20

(here user\_age is identifier)

## Keywords:

**reserved words** in python that have special meaning and can't be used as identifiers.

eg:- int, float, str, if, else, for, while, def, class, etc.

## Indentation:

Python uses indentation to define code blocks, rather than relying on curly braces or other delimiters.

eg:-

if x>0:

print("x is positive")

## Comments:

Python allows developers to write comments to explain their code and improve readability. Start with **#**

- Single line comment

eg:- #this is comment

- multiple line comment

eg:- """ this

is

comment """

## Variables:

It is a named location in memory used to store and access data or values in a python program.

eg:- x=5 or number1 = 2

- never start with integer.
- always start from underscore or any character.
- never be a keyword.
- never hold any spaces
- any special character can't be used