Python Introduction

101

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Outline

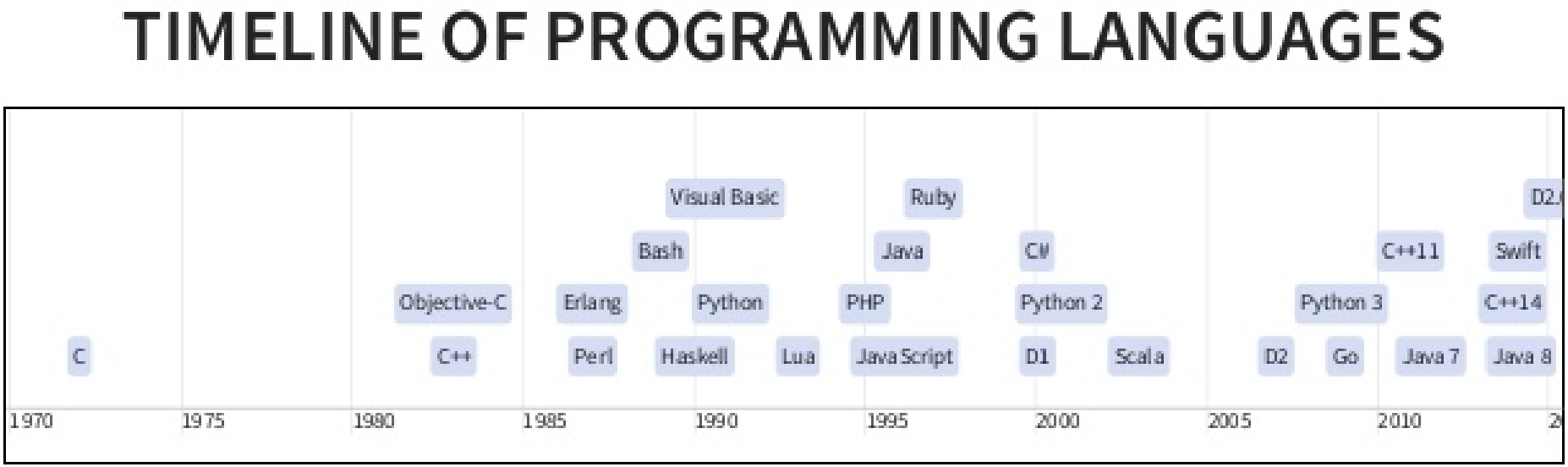
Ideology

- "Computers are useless. They can only give you answers."
- "A problem well stated is a problem half solved."
- "Perfection is achieved not when there is nothing more to add, but rather when there is nothing more to take away."

Computer Programming

- Problem-solving
- Automation
- Communication

Programming Languages



https://www.tiobe.com/tiobe-index/

General Purpose

- AI, ML
- Datamining
- Numerics, Statistics
- Web-development

Usage

- Instagram
- Spotify
- BitTorrent
- Overwatch

Attributes

- High-level
- Interpreted
- General Purpose
- Platform Independent
- Dynamically Typed

Zen of Python

- PEP 20
- import this
- Beautiful is better than ugly.
- Readability counts.

Hello World

https://jupyter.org/try

"Hello, World"

- C

```c
#include <stdio.h>

int main(int argc, char ** argv)
{
   printf("Hello, World!\n");
}
```

- Java

```java
public class Hello
{
   public static void main(String argv[])
   {
      System.out.println("Hello, World!");
   }
}
```

Base Types

- int
- float
- str
- bool

Basic Mathematics

- +, -, *, /
- Precedence
- %, **
- round, abs, pow

Logical Operators

- ==, <, >, <=, >=
- and, or
- not
- is

String Operators

- +
- *
- in
- slice
- Indexing from 0

Decision Statement

- if
- if-else
- elif
- Indentation
- Flat is better than nested.
- Sparse is better than dense.

Loops

- while
- Stopping Condition
- for
- range

Installation

- https://realpython.com/installing-python/
- https://jupyter.org/install
- Optional: spyder, pycharm

Beginner tutorials

- https://docs.python.org/3/tutorial/
- https://thepythonguru.com/
- https://www.w3schools.com/python/
- https://github.com/jupyter/jupyter/wiki/A-gallery-of-interesting-Jupyter-Notebooks
- https://nbviewer.jupyter.org/github/brianckeegan/Bechdel/blob/master/Bechdel_test.ipynb

Coming soon...

- Lists, Dictionaries
- Functions
- Dataframes
- Visualization
- Problems from Data Science

Exam

Grade	Points
5	90 - 100*
4	75 - 90
3	60 - 75
2	50 - 60

Extra 4x10 points for homeworks.