



Python

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History Of Python

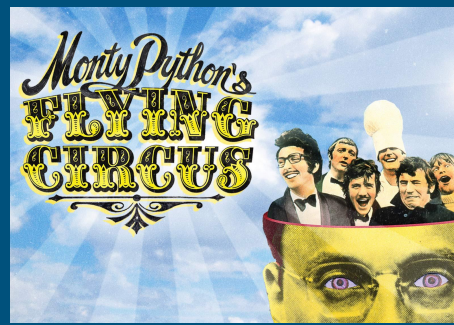
What is Python?

Python is a **high level, general purpose, open source** coding language. Invented by Guido van Rossum in 1991, Python is one of the only languages that do not require a compiler, instead using an **interpreter** to translate Python syntax into binary. As of now, Python has 3 different versions, Python, Python 2.0, and Python 3.0.



The Beginnings

Guido van Rossum started working on Python in 1989. He made it so that you could understand and read code more easily, as well as make what you want quickly. He has helped the development of Python throughout the years, though stepped down in 2018.



van Rossum originally started the project of creating it to occupy himself over the holidays in December. The inspiration for the name came from Monty Python's Flying Circus. He watched the show on BBC, and thought the name 'Python' sounded cool. The language was released in 1991.

Different Versions and Key Differences

Python 2.0 came out in October of 2000.

Python 2's print function didn't require parenthesis around the section you wanted to print.

Another difference is the math. In Python 2, if you printed $3/2$, you would get 1. You would need to specify a float.

Python 3.0 came out in December 2008.

Python 3's print function requires parenthesis around the words/variables you want printed.

In Python 3, if you print $3/2$, you would get 1.5.

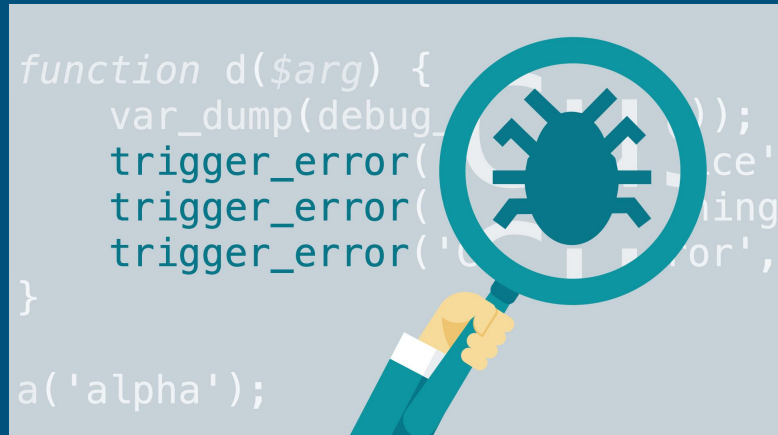
2 vs 3

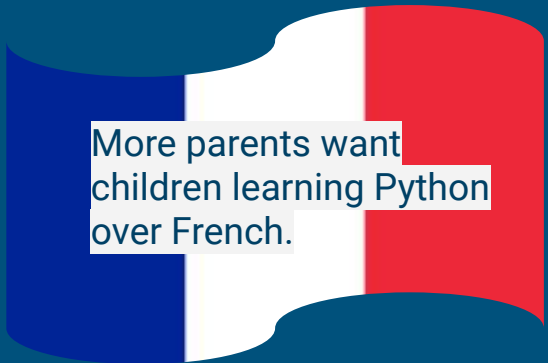
Both version 2 and 3 have fanbases, constantly debating which one is better.

Gamechangers

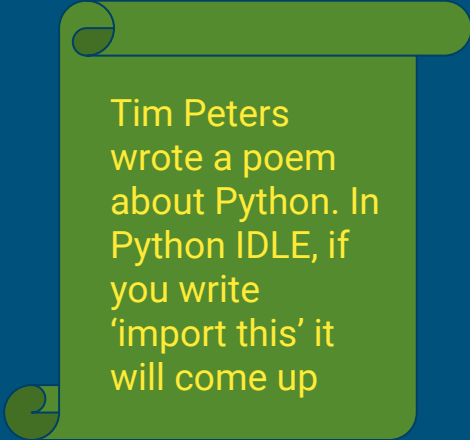
In Python 3.7, a new function called `breakpoint()` was implemented. This made it easier to debug. It would temporarily stop the code so you can inspect the code/program where it is currently. This replaced `import pdb; pdb.set_trace()`, which would do the same, but was harder to understand.

Another part of this function means you can type 'c' and press enter, and it would continue on from the `pdb` debugging.

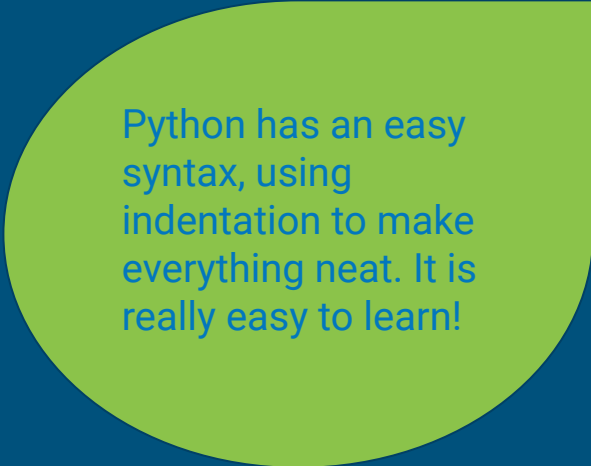




More parents want children learning Python over French.

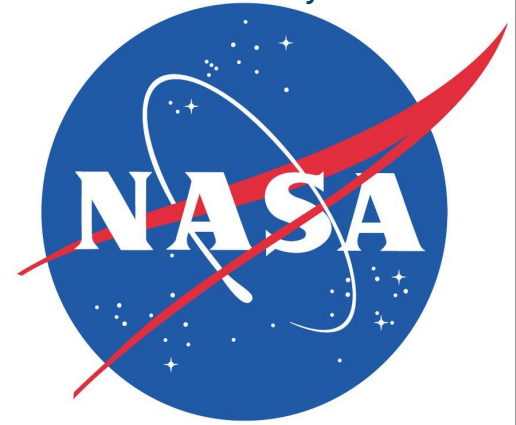


Tim Peters wrote a poem about Python. In Python IDLE, if you write 'import this' it will come up



Python has an easy syntax, using indentation to make everything neat. It is really easy to learn!

NASA has used Python



Fun Facts!

General Uses/Implementations

In Aerospace/Astronomy



Hacking

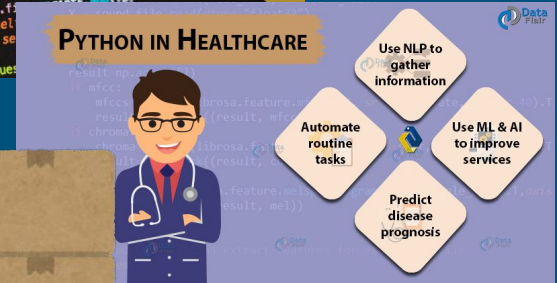


In the Tech World



Python for Data Analysis

- Often used for risk assessment and algorithmic trading models in finance
- Using machine learning algorithms, Python can diagnose and treat diseases and optimize hospital operations
- In agriculture, Python is used to make yield predictions and manage crops/insects with IoT



AI in Python



Why choose Python? For AI, it has the least code out of other languages. Python has a library specifically for AI/Machine Learning, which makes it easier to code. AI is able to predict weather based on conditions that have occurred before.



Python is also used widely, and the community resources and support make it easy. AI is used for facial recognition, healthcare, and much more. It is a very useful resource, and simple in Python.



Pros and Cons of Python

Pros:

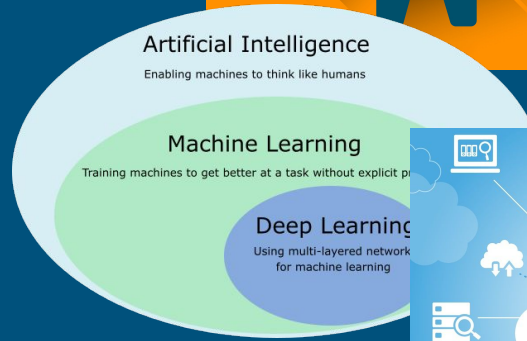
- Large active community, VERY easy to learn(compared to other coding languages), multiple libraries for different functions, integration with other languages such as C and Java, productive

Cons:

- Slow compared to other languages, error messages take longer to load, not favorable when designing mobile apps, large memory consumption

More Applications

- Web development
- Game development
- CAD
- Other embedded applications



Python Examples

- [Guess the Number](#)
- [Rock Paper Scissors](#)
- [Caesar Cipher Encoder](#)
- [Caesar Cipher Decoder](#)
- [Choose Your Own Adventure](#)

```
You have been chosen to recover a special artifact! It is supposedly located in a...penguin? Save it
out of the goodness of your heart!
You are many, many miles away, so you will have to overcome many difficulties to save it!
Are you going to save the artifact? (y/n) y
Excellent! Just follow the yellow sidewalk!
Are you sure you want to continue? (y/n) y
You meet a duck hurling large giraffes at everyone. The duck charges at you with a giraffe in each h
and. What do you do?
Choose an option: (offer lemonade/kick the duck away/sit on it) offer lemonade
The duck is taken aback and instantly retreats...but not before taking the lemonade you just offered
him.
You continue on your way and spot a flaming chicken. What do you do?
Choose an option: (eat the chicken/throw the chicken at someone's house and frame it for committing
arson/douse it with water) throw the chicken at someone's house and frame it for committing arson
You dig out some of the lettuce in your travelling pack and find out that it has become sentient and
is now trying to eat you. What do you do?
Choose an option: (chop it into little pieces and eat it/train it to decapitate other people/scream
in terror and watch it destroy everything you love) scream in terror and watch it destroy everything
you love
After a long month of travelling, you finally reach the penguin! What do you do?
Choose an option: (accidentally drop the sentient lettuce on the penguin/pick the penguin up, but yo
u discover it is actually glass and break it out of anger/save it like you're supposed to do) save it
like you're supposed to do
Pinch yourself and wake up. It's all a dream.
Thank you for playing!
```

```
*****
```

```
Choose a number!
```

```
*****
```

```
Guess the number between 1 and 1000. 500
```

```
Too high!
```

```
Guess the number between 1 and 1000. 250
```

```
Too low!
```

```
Guess the number between 1 and 1000. 375
```

```
Too high!
```

```
Guess the number between 1 and 1000. 310
```

```
Too low!
```

```
Guess the number between 1 and 1000. 340
```

```
Too low!
```

```
Guess the number between 1 and 1000. 355
```

```
Too high!
```

```
Guess the number between 1 and 1000. 3447
```

```
Too high!
```

```
Guess the number between 1 and 1000. 347
```

```
Too high!
```

```
Guess the number between 1 and 1000. 343
```

```
Too low!
```

```
Guess the number between 1 and 1000. 345
```

```
Too high!
```

```
The number was 344!
```

```
trinket ▶ Run
```

```
Powered by trinket
```

```
rock(r), paper(p), or scissors(s)? r
```

```
r vs s
```

```
Player wins!
```

```
*****
```

```
| Caesar Cipher Encoder |
```

```
*****
```

```
What would you like to encode? hi how are you today?
```

```
What would you like to shift by? 4
```

```
Your encoded message is: lm lsa evi csy xshec?
```


Sources – History of Python

[Python's creator thinks it has a diversity problem – Quartz](#)

[History of Python](#)

[Python Documentation by Version](#)

[The key differences between Python 2.7.x and Python 3.x with examples](#)

[Cool New Features in Python 3.7 – Real Python](#)

[16 Facts about Python Programming that every Geek should know](#)

Sources – General Uses/Implementations

[Top 10 Python Applications in the Real World | Uses of Python](#)

[Advantages and Disadvantages of Python](#)

[Role of Python in Artificial Intelligence \(AI\) | Python Machine Learning](#)

[Data Analysis with Python](#)

[Artificial Intelligence With Python](#)

[Role of Python in Artificial Intelligence \(AI\) | Python Machine Learning](#)

[Astronomy with Python](#)

[Hackers and Python](#)