

Python: Geospatial's Powerful Open Source Language



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Why Python?



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Why Python?



Confused?
Another lang?

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Reason #1: Python is Open Source

- Freely available
- Active community (“release early, release often”)



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Open Source Definition

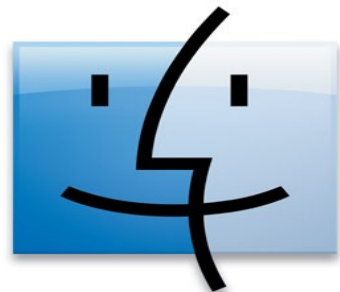


1. Freely distributed
2. Source code must be included
3. License must allow modifications
4. Integrity of the author's source code
5. No discrimination against persons
6. No discrimination against fields of endeavor
7. License covers entire product
8. License must not be specific to a product
9. License must not restrict other software
10. License must be technology neutral

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LibreOffice
The Document Foundation



Mac

Core operating system, Darwin, is Open Source and is the base of all Mac OS X and iPhone systems

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Reason #2: The GeoPython Ecosystem

GeoPandas, pycsw, rasterio, PyWPS, conda, numpy,
Jupyter notebook, pyproj, Fiona, Shapely, ...



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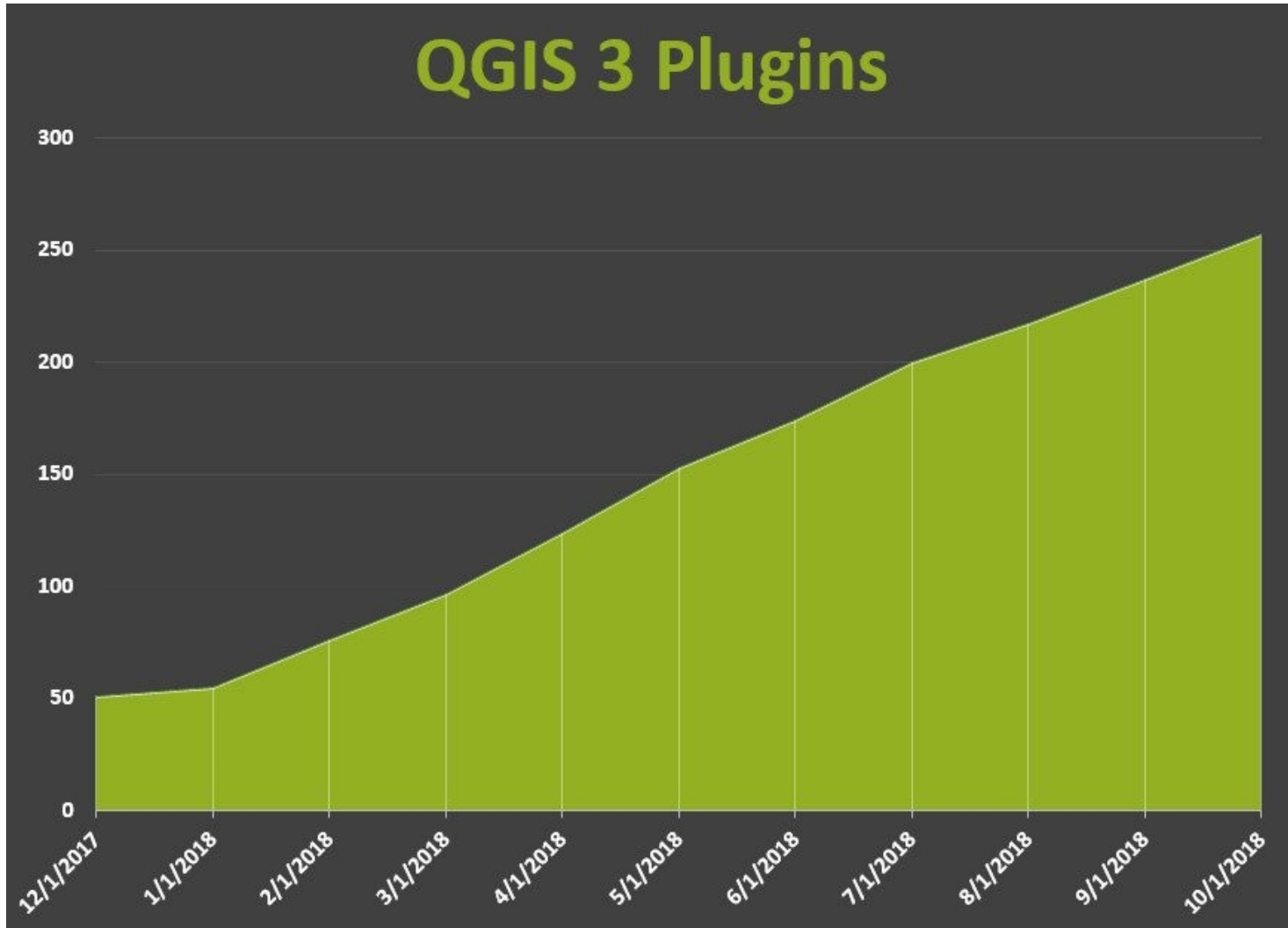
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Reason #3: The Industry go-to

- Included in ArcGIS Desktop & ArcGIS Pro (ArcPy, Python API)
- QGIS plugins are Python-based



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***currently 1065 in repository**

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Reason #4: It's the Future

- OGC Hackathon last month (June) to work on the new “OGC API” standard (which will merge WMS/WFS/..)
- New project “pygeoapi” to manage that



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Reason #5: It's an Object-Oriented Lang

- Manage data through objects
- Easy to assign properties to objects



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



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Python Example

```
# create class  
  
class Person:  
    def __init__(self, name, age):  
        self.name = name  
        self.age = age  
  
# p is the object  
  
if __name__ == "__main__":  
    p = Person("jeff", NA)  
    print(p.name)
```

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Reason #6: Python Has Great Help

General Coding Help		Mark this forum read Subscribe to this forum			
Thread / Author	Replies	Views	Rating	Last Post [asc]	
 Loading .csv data using Pandas zaki424160	1	29	☆☆☆☆☆	9 minutes ago Last Post: perfringo	
 Missing required dependencies when using pyinstaller (Pages: 1 2) Ghonim	15	1,592	☆☆☆☆☆	1 hour ago Last Post: shubhthkr	
 which is more Pythonic? Skaperen	1	35	☆☆☆☆☆	1 hour ago Last Post: DeaD_EyE	
 How do I copy files faster with python? steckreinhardt619	3	118	☆☆☆☆☆	1 hour ago Last Post: DeaD_EyE	
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 intermediate book recommendation please? jameson984	1	30	☆☆☆☆☆	6 hours ago Last Post: metulburr	
 I need help! How to package python code with other component into an exe file?? Wendy	3	69	☆☆☆☆☆	6 hours ago Last Post: Wendy	
 split by character class Skaperen	3	147	☆☆☆☆☆	7 hours ago Last Post: Skaperen	
 converting data sizes like: 4k, 32k, 4m, 16m, 1g, etc Skaperen	0	30	☆☆☆☆☆	7 hours ago Last Post: Skaperen	
 custom sqrt bluefroa	4	121	☆☆☆☆☆	Yesterday, 08:49 PM Last Post: ichabod801	

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Reason #7: Python Scripting is Easy!

```
# real-world example  
  
from osgeo import ogr  
  
point = ogr.Geometry(ogr.wkbPoint)  
  
point.AddPoint(1198054.34, 648493.09)  
  
print point.ExportToWkt()
```

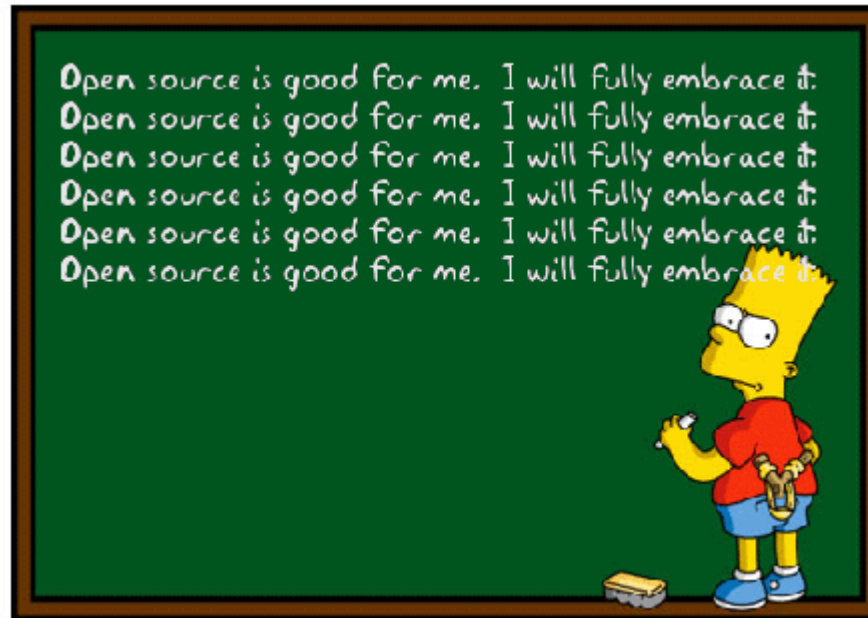
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Python: Future Topics

- Python environments
- PyPi
 - Pip install <package>
- Creating your first QGIS plugin
- Leveraging ArcPy for your data

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Thank you



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