

Getting Started with Python Programming

QGIS Tutorials and Tips



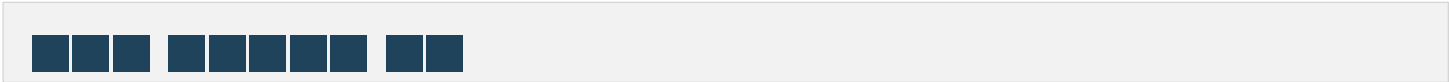
Author





Ujaval Gandhi

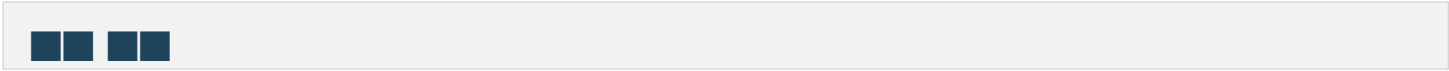
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




Translations by

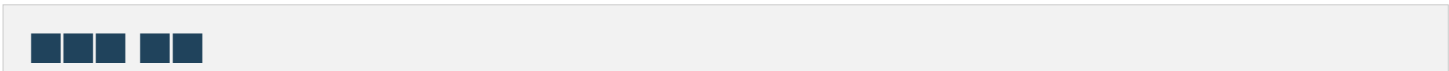
SongHyun Choi





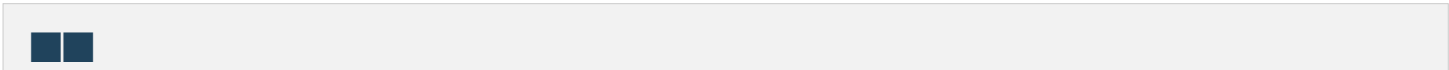








Natural Earth ■ Airports ■■■■■■ ■■■■■■.

```
`Airports shapefile <http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne\_10m\_airports.zip>`_ ■ ■■■■ ■■■■.
```

■■■ ■■: [NATURALEARTH]



- ```
1. QGIS[] [] [] --> [] [] --> [] [] :menuselection:'Layers --> Add Vector
Layer'[] []. [] [] ``ne_10m_airports.zip``[] [] [] :guiabel:'Open'[] [].
``ne_10m_airports.shp``[] [] [] [] :guiabel:'OK'[] [].
```



2. QGIS ■ ``ne\_10m\_airports`` ■■■■ ■■■■■ ■■■■.



3. **Identify** the airports in the map. The map shows 3 airports. The map shows the name and data\_code of the airports.





5. QGIS `iface` object is used to interact with the QGIS interface. `iface` object is used to get the active layer. `iface.activeLayer()` returns the active layer. `iface.layerBySymbol()` returns the layer by symbol. `iface.layerByLayerName()` returns the layer by layer name. `iface.layerByLayerName('layer')` returns the layer by layer name.

```
layer = iface.activeLayer()
```



6. `dir()` returns a list of attributes and methods for the active layer. The `layer` variable is a reference to the active layer.

```
dir(layer)
```



7. ■ ■■■■ ■■■■■■ ■■■■ ■■■■ ■■■■. ■■ ■■■■ ■■ ■■■■ ■■■■■■ ■■■■  
 ``getFeatures()`` ■■■■ ■■■■ ■■■■ ■■■■. ■ ■■ ■ ■■■■ ■■■■ ■■■■ ■■■■. ■■■■  
 ■■■■■■ ■ ■■■■ ■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■. ■■■■ ■■ ■■■■ ■■ ■■ ■■■■  
 ■■■■■■ ■■■■ ■■ ■■■■■■.

```

for f in layer.getFeatures():
 print f

```





8. `for f in layer.getFeatures():`  
 `print f['name'], f['iata_code']`

```
for f in layer.getFeatures():
 print f['name'], f['iata_code']
```



```

geom` ``
x, y
:kbd: `Enter`

```

```

for f in layer.getFeatures():
 geom = f.geometry()
 print geom.asPoint()

```



10. `geom.asPoint().x()`

```

for f in layer.getFeatures():
 geom = f.geometry()
 print geom.asPoint().x()

```



11. The following code snippet is used to extract the coordinates of the airports from the 'ne\_10m\_airports' layer. The code iterates over the features in the layer, extracts the geometry, and prints the x and y coordinates of each point. The output shows a list of coordinates for each airport.

```

for f in layer.getFeatures():
 geom = f.geometry()
 print '%s, %s, %f, %f' % (f['name'], f['iata_code'],
 geom.asPoint().y(), geom.asPoint().x())

```





airports.txt - Notepad

File Edit Format View Help

Sahnewal, LUH, 30.850360, 75.957072  
Solapur, SSE, 17.625415, 75.933060  
Birsamunda, IXR, 23.317725, 85.323597  
Ahwaz, AWZ, 31.343159, 48.747107  
Gwalior, GWL, 26.285488, 78.217219  
Hodeidah Int'l, HOD, 14.755253, 42.971096  
Devi Ahilyabai Holkar Int'l, IDR, 22.727749, 75.809292  
Gandhinagar, ISK, 19.966021, 73.810567  
Chandigarh Int'l, IXC, 30.670725, 76.801726  
Aurangabad, IXU, 19.867297, 75.395843  
Faisalabad Int'l, LYP, 31.362744, 72.987819  
Omsk Tsentralny, OMS, 54.957648, 73.316360  
Novosibirsk Tolmachev, OVB, 55.009585, 82.667152  
Zaporozhye Int'l, OZH, 47.873264, 35.301873  
Simpang Tiga, PKU, 0.464601, 101.446569  
Rota Int'l, ROP, 14.171771, 145.243980  
Surgut, SGC, 61.340167, 73.408496  
Tiruchirappalli, TRZ, 10.760357, 78.708958  
Turbat Int'l, TUK, 25.988795, 63.027933  
Quetta Int'l, UET, 30.249043, 66.948731  
Zahedan Int'l, ZAH, 29.475294, 60.900709  
Abdul Rachman Saleh, MLG, -7.929980, 112.711419  
Barnaul, BAX, 53.363385, 83.550453  
Adampur, NULL, 31.432942, 75.758483  
Bareilly, NULL, 28.421809, 79.452003  
Dhamial, NULL, 33.561415, 73.032050  
Cheongju Int'l, CJJ, 36.722023, 127.495916  
Gwangju, KWJ, 35.140005, 126.810839  
Daegu Int'l, TAE, 35.899928, 128.637538  
Ulsan, USN, 35.592896, 129.355731  
Radin Inten II, TKG, -5.242567, 105.176060  
Allahabad, IXD, 25.443522, 81.731727  
Chelyabinsk, CEK, 55.297792, 61.512259  
Tainan, TNN, 22.950668, 120.209733  
Taichung, RMQ, 24.266656, 120.630704  
Rotterdam The Hague, RTM, 51.949130, 4.433844  
Voronezh-Chertovitskoye, VOZ, 51.812617, 39.225450  
Liverpool John Lennon, LPL, 53.336375, -2.858621  
Vishakapatnam, VTZ, 17.727958, 83.223522  
Sultan Hasanuddin Int'l, UPG, -5.058937, 119.545691  
Vava'u Int'l, VAV, -18.586006, -173.968094  
Newcastle Int'l, NCL, 55.037085, -1.710346  
Goloson Int'l, LCE, 15.745160, -86.851469