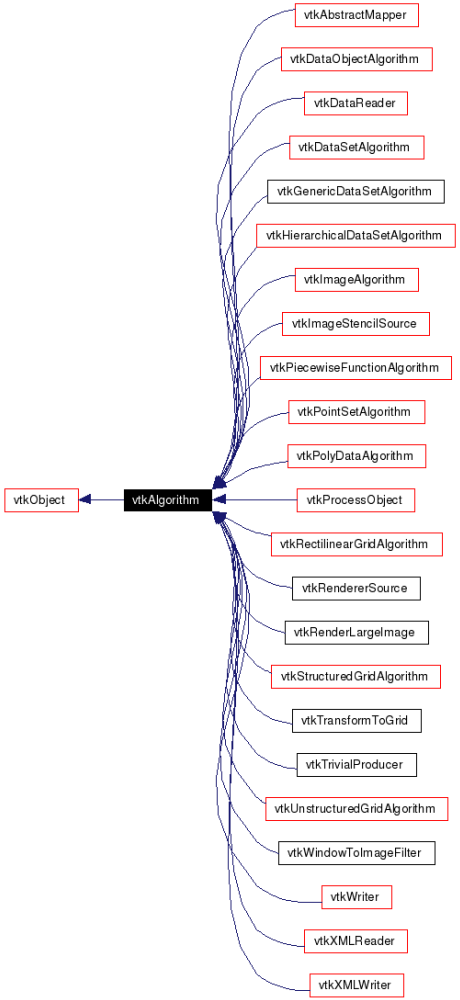
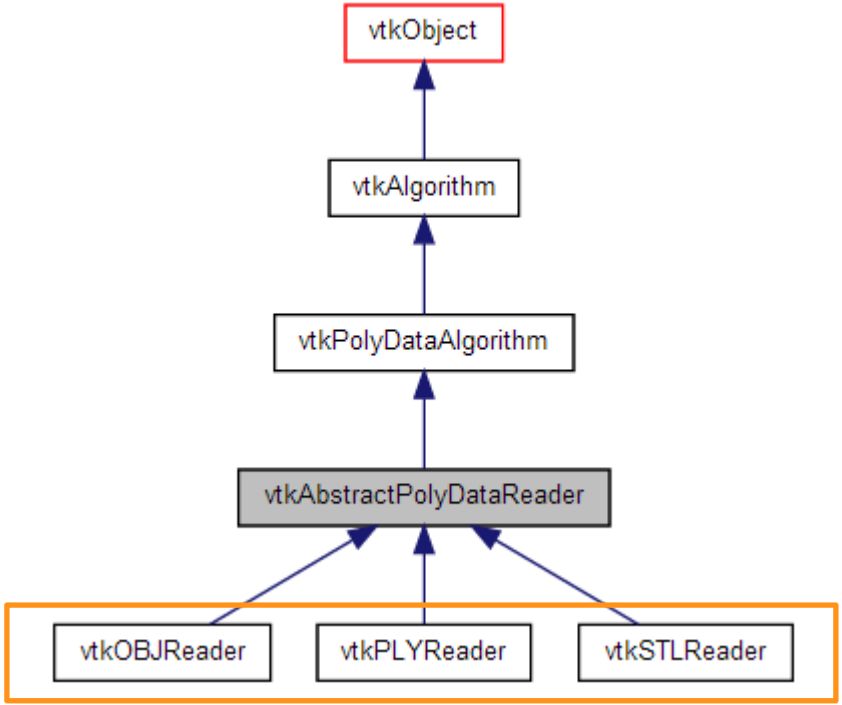
TVTK数据加载

VTK继承关系


vtkAbstractMapper
vtkDataObjectAlgorithm
vtkDataReader
vtkDataSetAlgorithm
vtkGenericDataSetAlgorithm
vtkHierarchicalDataSetAlgorithm
vtkImageAlgorithm
vtkImageStencilSource
vtkPiecewiseFunctionAlgorithm
vtkPointSetAlgorithm
vtkPolyDataAlgorithm
vtkObject
vtkAlgorithm
vtkProcessObject
vtkRectilinearGridAlgorithm
vtkRendererSource
vtkRenderLargeImage
vtkStructuredGridAlgorithm
vtkTransformToGrid
vtkTrivialProducer
vtkUnstructuredGridAlgorithm
vtkWindowToImageFilter
vtkWriter
vtkXMLReader
vtkXMLWriter

TVTK模型读取

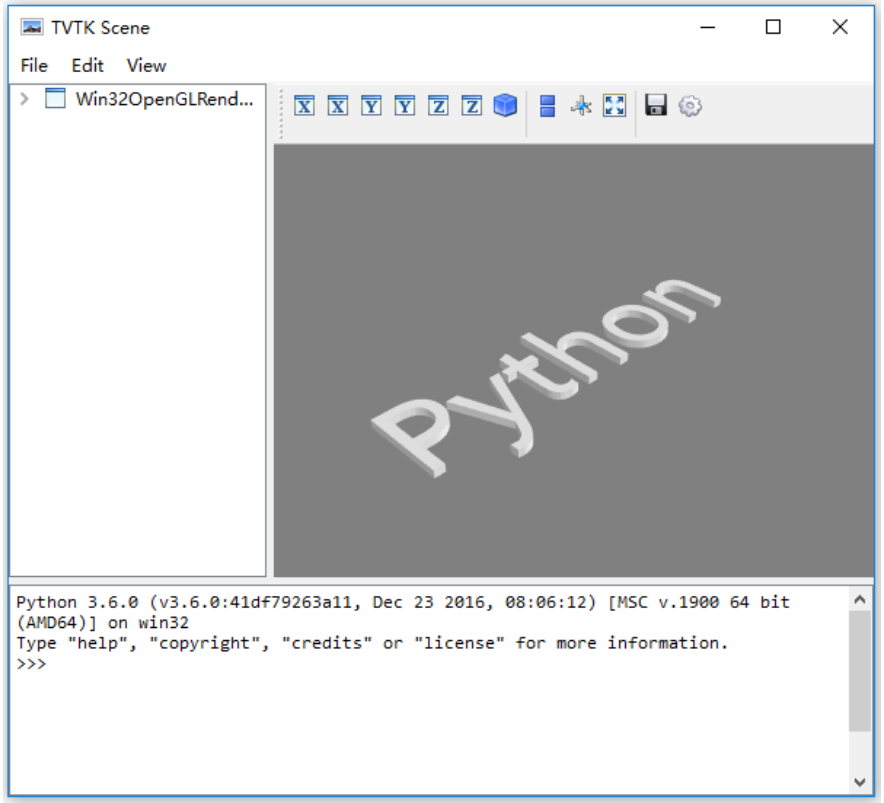

vtkObject
vtkAlgorithm
vtkPolyDataAlgorithm
vtkAbstractPolyDataReader
vtkOBJReader
vtkPLYReader
vtkSTLReader

TVTK模型读取

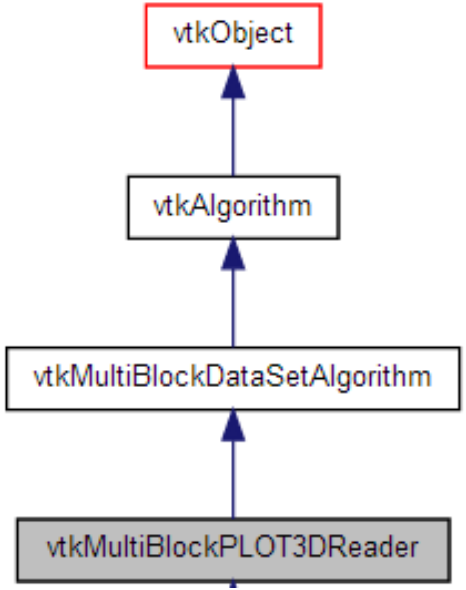
s=tvtk.STLReader(file_name = “stl文件名”)

```
from tvtk.api import tvtk
from tvtkfunc import ivtk_scene,event_loop

s = tvtk.STLReader(file_name = "python.stl")
m = tvtk.PolyDataMapper(input_connection = s.output_port)
a = tvtk.Actor(mapper = m)

win = ivtk_scene(a)
win.scene.isometric_view()
event_loop()
```

TVTK模型读取


TVTK Scene
File
Edit
View
Win32OpenGLRend...
Python
Python 3.6.0 (v3.6.0:41df79263a11, Dec 23 2016, 08:06:12) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>

TVTK MultiBlock数据读取



- Plot3D
  - 网格（XYZ 文件），
  - 空气动力学结果（Q 文件）
  - 通用结果

TVTK MultiBlock数据读取

```
Plot3d = tvtk.MultiBlockPLOT3DReader(
    xyz_file_name="combxyz.bin", #网格文件
    q_file_name="combq.bin", #空气动力学结果文件
    scalar_function_number=100, #设置标量数据数量
    vector_function_number=200 #设置矢量数据数量
)
```

TVTK MultiBlock数据读取

```
from tvtk.api import tvtk

def read_data():
    # 读入数据
    plot3d = tvtk.MultiBlockPLOT3DReader(
        xyz_file_name="combxyz.bin",#网格文件
        q_file_name="combq.bin",#空气动力学结果文件
        scalar_function_number=100, vector_function_number=200
    )
    plot3d.update()
    return plot3d

plot3d = read_data()
grid = plot3d.output.get_block(0)
```

TVTK MultiBlock数据读取

```
>>> print(type(plot3d.output))
<class 'tvtk.tvtk_classes.multi_block_data_set.MultiBlockDataSet'>
>>> print(type(plot3d.output.get_block(0)))
<class 'tvtk.tvtk_classes.structured_grid.StructuredGrid'>
```

```
>>> print(grid.dimensions)
[57 33 25]
>>> print(grid.points.to_array())
[[  2.66700006  -3.77476001  23.83292007]
 [  2.94346499  -3.74825287  23.66555977]
 [  3.21985817  -3.72175312  23.49823952]
 ...,
 [ 15.84669018   5.66214085  35.7493782 ]
 [ 16.17829895   5.66214085  35.7493782 ]
 [ 16.51000023   5.66214085  35.7493782 ]]
>>> print(grid.cell_data.number_of_arrays)
0
>>> print(grid.point_data.number_of_arrays)
4
>>> print(grid.point_data.scalars.name)
Density
>>> print(grid.point_data.vectors.name)
Velocity
>>>
```