

Kurs programowania w QGIS za pomocą Pythona

Dzień 5

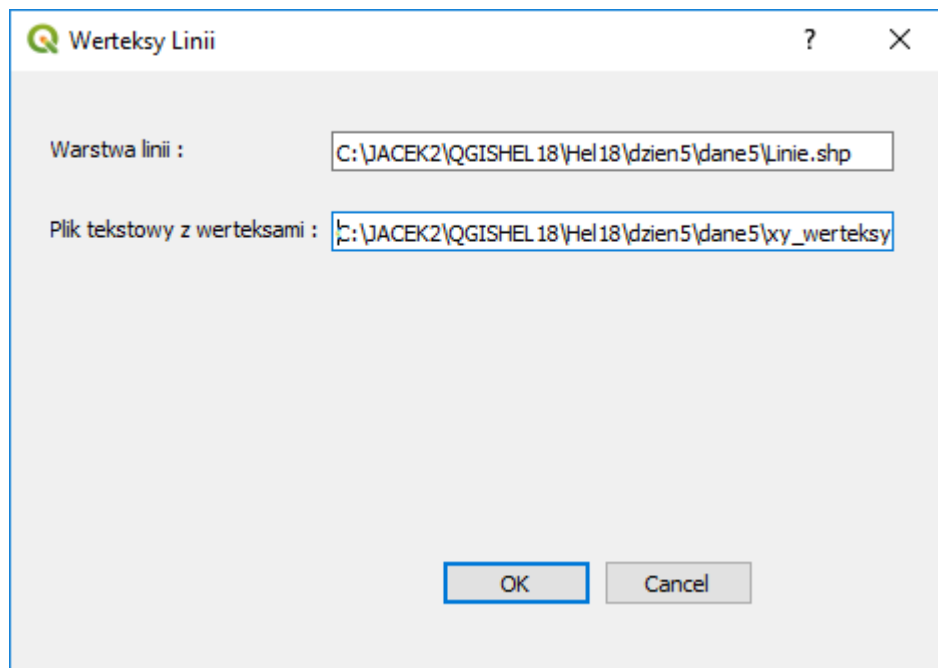
Tworzenie wtyczek (plugins)

Hel wrzesień 2019



```
import processing
processing.runalg('sag
None,"ifelse(gt(a,150),
"D:\\PROJ14\\FYQGIS\\pr
rlayer= QgsRasterLayer
"NMT5")
QgsMapLayerRegistry.i
```

Wtyczka:



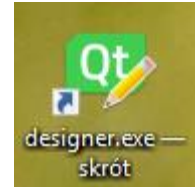
Wprowadzamy warstwę linii otrzymujemy plik tekstowy warteksów

numer_linii, numer_warteksu, x,y

linie_warteksy.py xy_warteksy.txt			
1	0,0,	439709.85,	706167.63
2	0,1,	439572.82,	706163.21
3	0,2,	439491.05,	706154.37
4	0,3,	439438.01,	706132.27
5	0,4,	439400.44,	706074.81
6	0,5,	439369.5,	706021.77
7	0,6,	439329.72,	705981.99
8	0,7,	439307.62,	705940.0
9	0,8,	439278.89,	705926.74
10	0,9,	439221.43,	705895.8
11	0,10,	439163.97,	705878.12
12	0,11,	439110.92,	705844.97
13	0,12,	439071.14,	705833.92
14	0,13,	439007.05,	705814.03
15	0,14,	438883.29,	705787.51
16	0,15,	438812.57,	705685.84
17	1,0,	439654.6,	706435.05
18	1,1,	439594.92,	706410.74
19	1,2,	439590.5,	706328.97
20	1,3,	439541.88,	706315.71
21	1,4,	439506.52,	706267.09
22	1,5,	439504.31,	706225.09
23	1,6,	439491.05,	706154.37
24	2,0,	438752.9,	706236.15
25	2,1,	438805.94,	706127.85
26	2,2,	438878.87,	706081.44
27	2,3,	438951.8,	706043.87
28	2,4,	438993.79,	706032.82

Do wykonania wtyczki potrzebujemy:

1. **Qt** Creator (a właściwie jego element **Qt Designer**)
software development framework



C:\OSGeo4W64\apps\Qt5\bin\designer.exe

2. Program **pb_tool** i konfiguracja środowiska za pomocą  **pyqgis.bat**

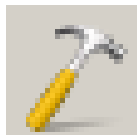
3. **Notepad++**
(inny edytor)



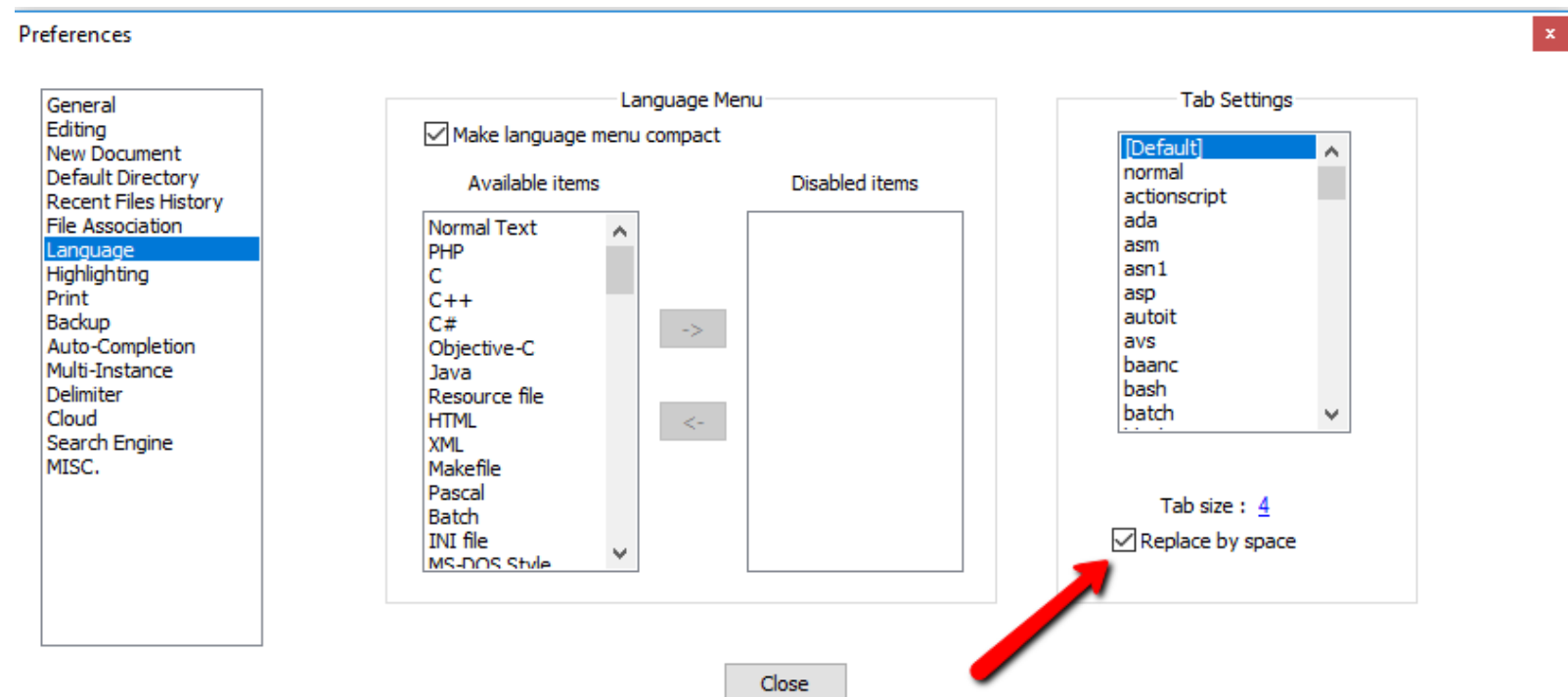
Settings

4. Wtyczki

Builder plugin



Reloader plugin



KROK 1

Uruchomić
program w
Python
Consoli i
przeprowad-
zić
testowanie,
określić
parametry

```
1 from osgeo import ogr
2
3
4 driver=ogr.GetDriverByName('ESRI shapefile')
5
6 # parametry
7 ff=r"C:\JACEK2\QGISHEL18\Hel18\dzien5\Linie.shp"
8
9 p_text=r"C:\JACEK2\QGISHEL18\Hel18\dzien5\xy_werteksy.txt"
10
11
12 dataSource=driver.Open(ff,0) # czytanie i pisanie
13
14 vlayer=dataSource.GetLayer()
15 #print vlayer.GetGeomType()
16 numFeature=vlayer.GetFeatureCount()
17 #print numFeature
18 file=open(p_text,"w")
19 for i in range(0, numFeature):
20     feature=vlayer.GetFeature(i)
21
22     geometry=feature.GetGeometryRef()
23     nwtx=geometry.GetPointCount()
24
25     for j in range(0,nwtx):
26         x=geometry.GetX(j)
27         y=geometry.GetY(j)
28
29         ss= str(i)+','+str(j)+','+str(round(x,2))+','+str(round(y,2))+'\n'
30         file.write(ss)
31 file.close()
32 feature.Destroy()
```

KROK 2



Uruchomić wtyczkę QGIS Plugin Builder

QGIS Plugin Builder - 3.0.3

QGIS Plugin Builder

Class name: WerteksyLinii

Plugin name: e.g. Photo Linker

Description: e.g. This plugin links points to photos

Module name: e.g. photo_linker

Version number: 0.1

Minimum QGIS version: 3.0

Author/Company: e.g. Acme widgets Inc.

Email address: e.g. jack@qgis.org

Help <Previous Next > Cancel

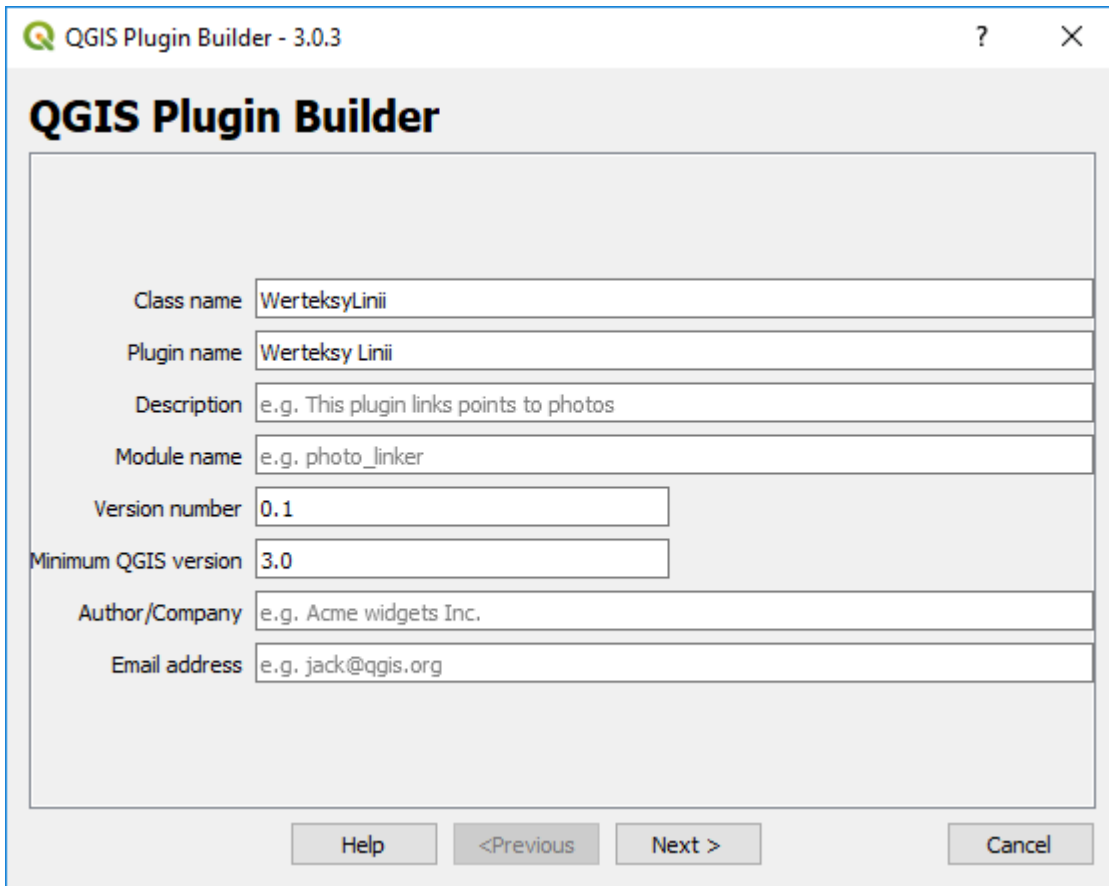
← Nazwa Python Class zawierająca cały układ wtyczki

>> nazwa katalogu **(ciągła pisownia)**

Np. WerteksyLinii

KROK 2

Uruchomić wtyczkę QGIS Plugin Builder



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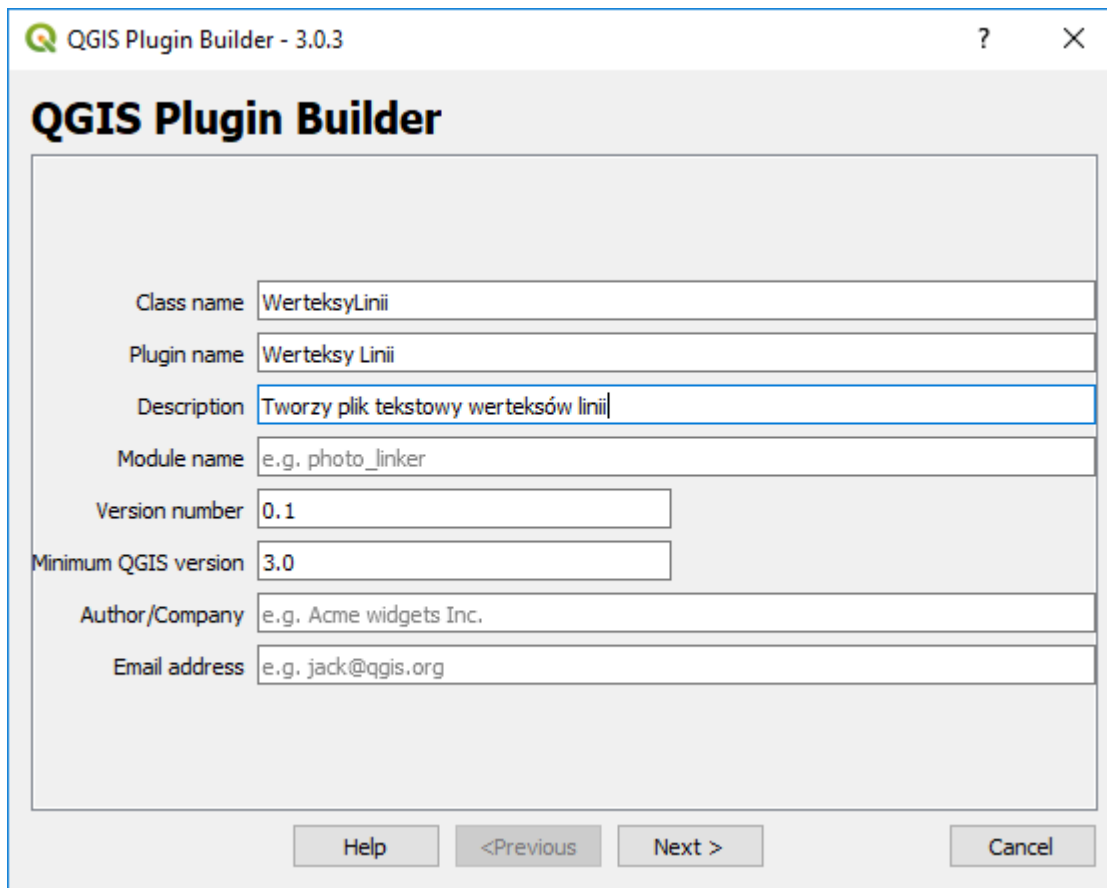
Help <Previous Next > Cancel



Nazwa w Plugin manager
>> dowolna
Np. Werteksy linii

KROK 2

Uruchomić wtyczkę QGIS Plugin Builder



QGIS Plugin Builder - 3.0.3

QGIS Plugin Builder

Class name: WerteksyLinii

Plugin name: Werteksy Linii

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Module name: e.g. photo_linker

Version number: 0.1

Minimum QGIS version: 3.0

Author/Company: e.g. Acme widgets Inc.

Email address: e.g. jack@qqis.org

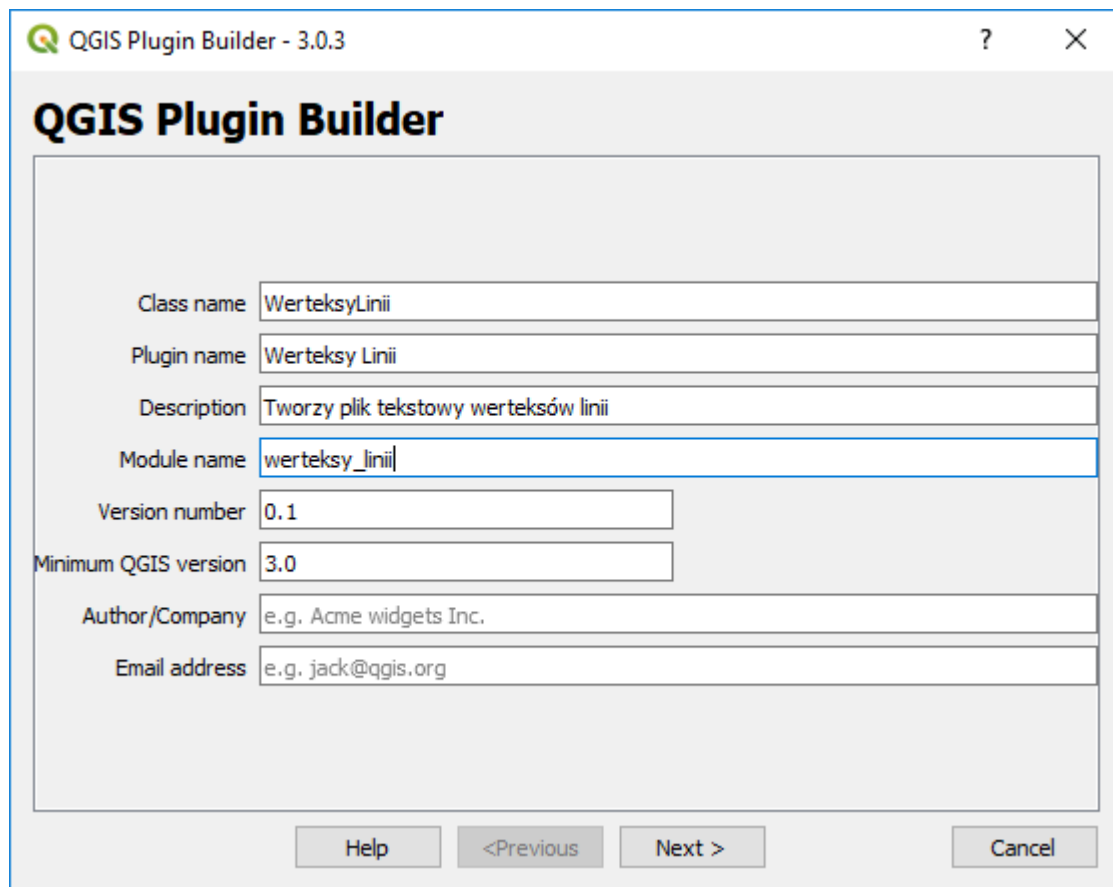
Buttons: Help, <Previous, Next >, Cancel

Krótki opis wtyczki 2-3 słowa

Np.. Tworzy plik tekstowy werteksów linii

KROK 2

Uruchomić wtyczkę QGIS Plugin Builder



QGIS Plugin Builder - 3.0.3

QGIS Plugin Builder

Class name	WerteksyLinii
Plugin name	Werteksy Linii
Description	Tworzy plik tekstowy werteksów linii
Module name	werteksy_linii
Version number	0.1
Minimum QGIS version	3.0
Author/Company	e.g. Acme widgets Inc.
Email address	e.g. jack@qqgis.org

Help <Previous Next > Cancel

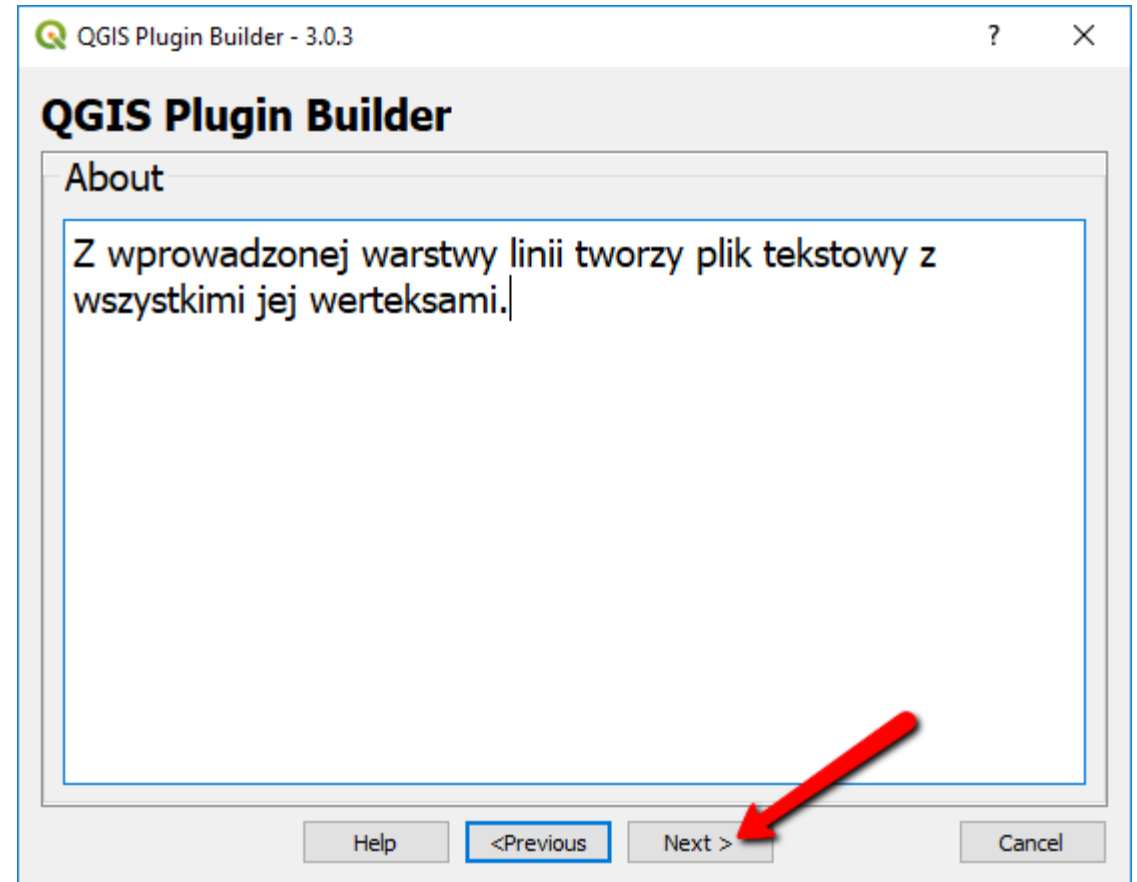
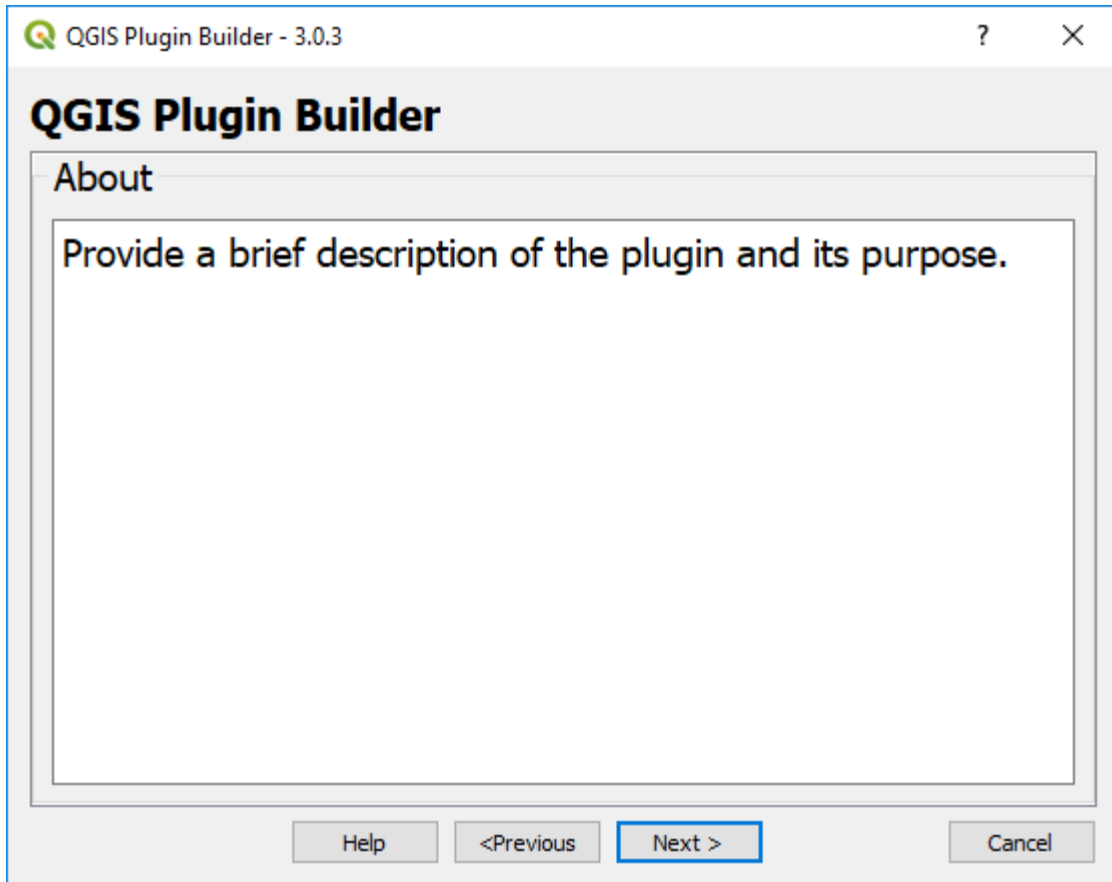
Nazwa głównego pliku Pythona

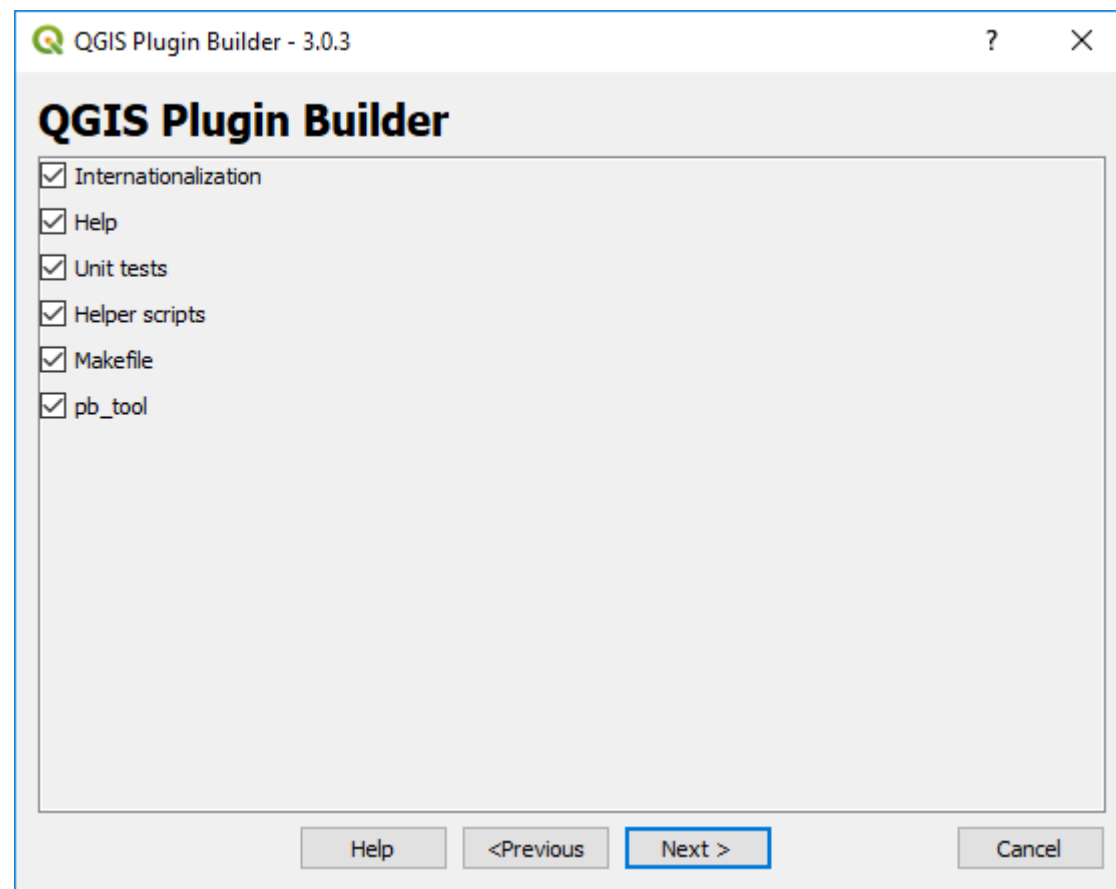
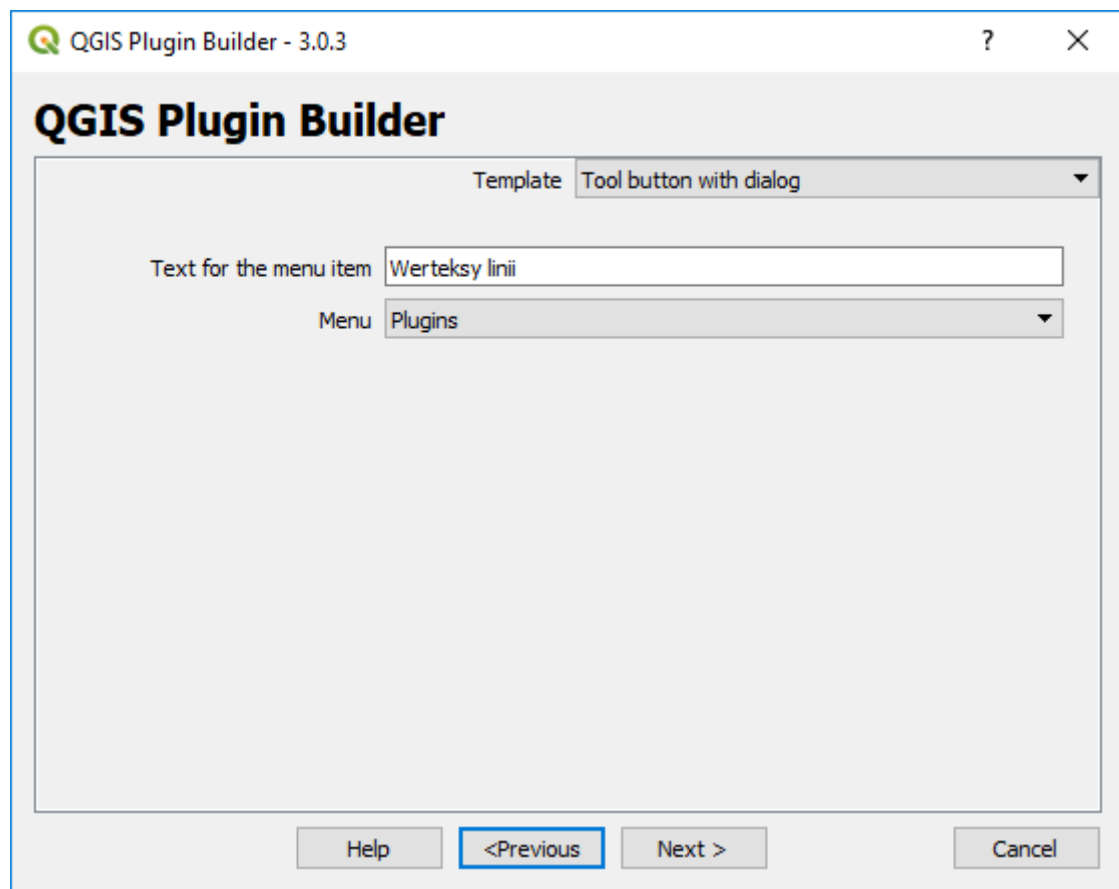
Np.. werteksy_linii

werteksy_linii.py

KROK 2

Uruchomić wtyczkę QGIS Plugin Builder





KROK 2

Uruchomić wtyczkę QGIS Plugin Builder



QGIS Plugin Builder - 3.0.3

QGIS Plugin Builder

Publication (mandatory Items)

Bug tracker ""

Repository ""

Publication (recommended Items)

Home page ""

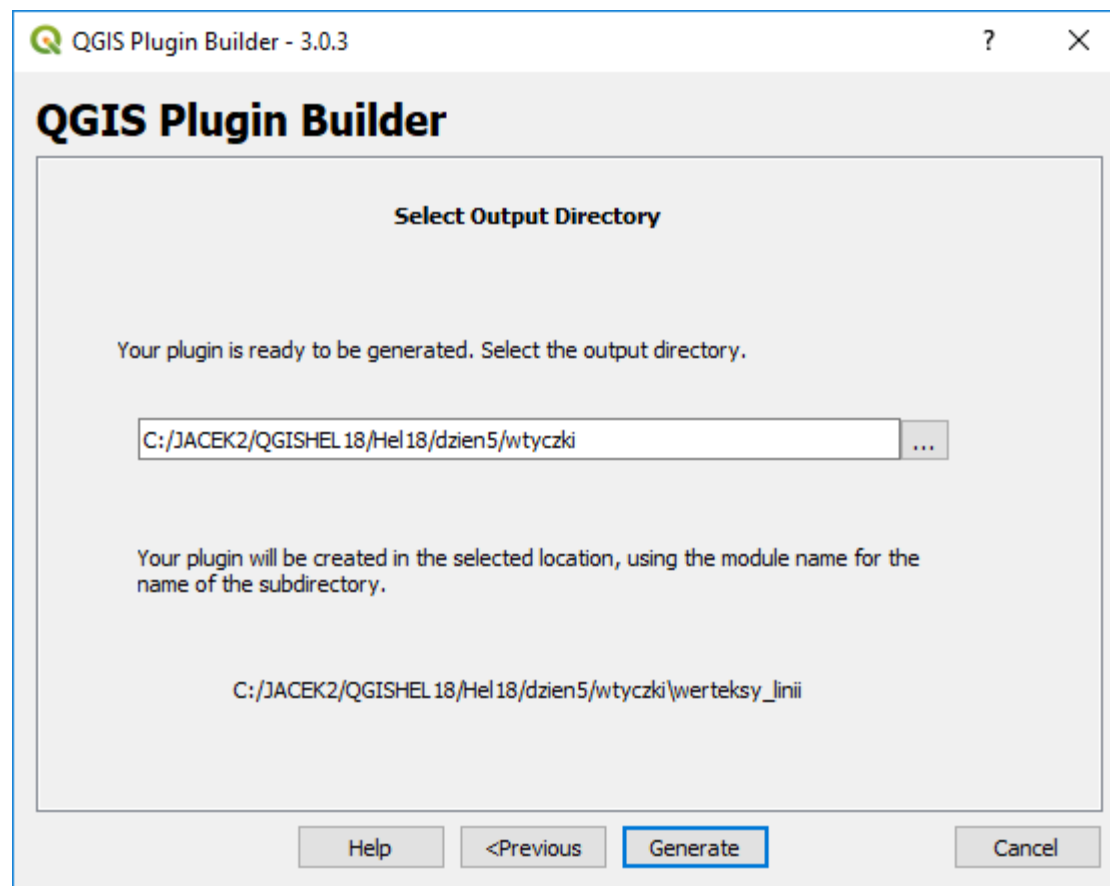
Tags python ...

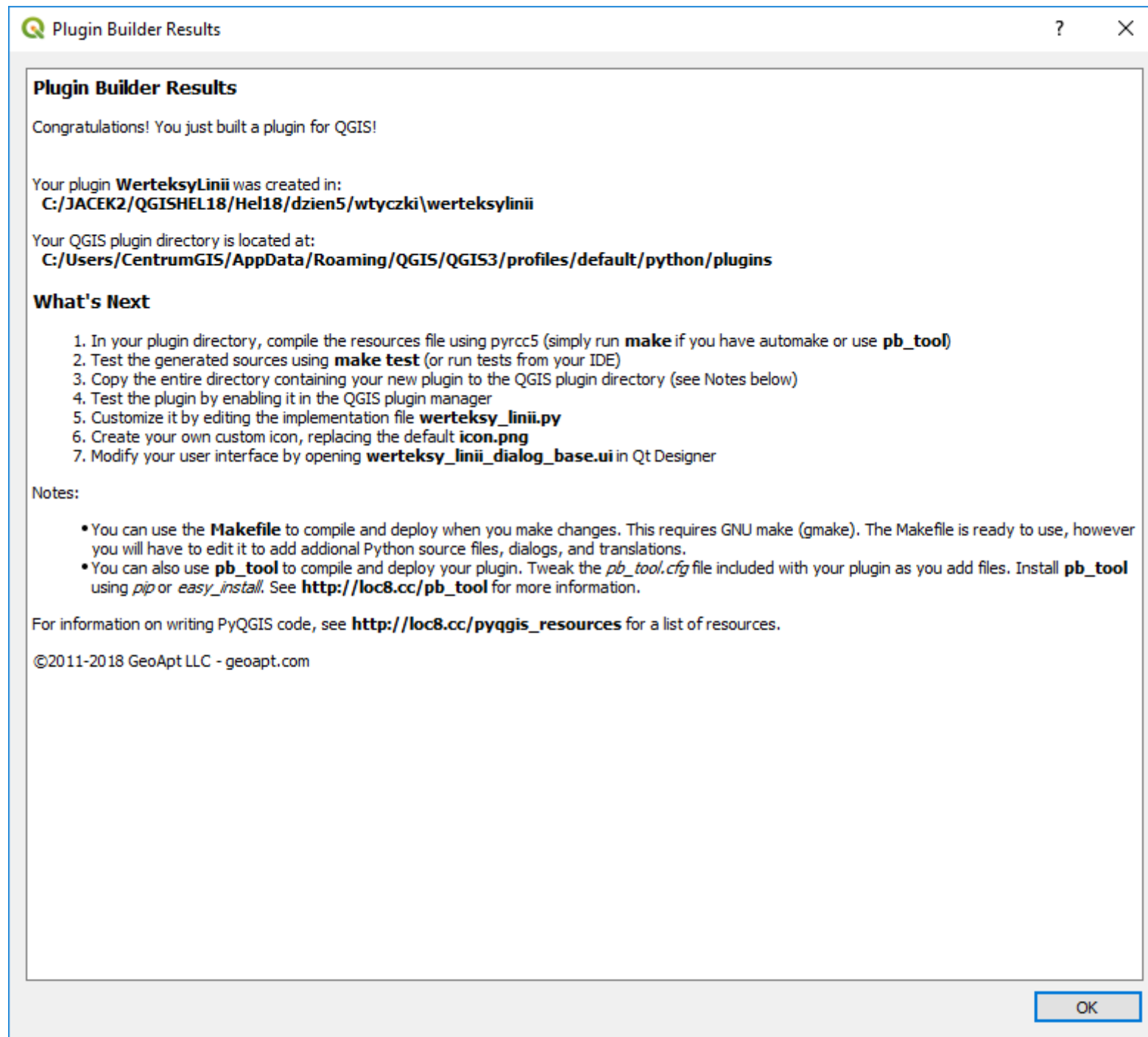
☒ Flag the plugin as experimental

Help <Previous Next > Cancel


















KROK 2

Uruchomić wtyczkę QGIS Plugin Builder



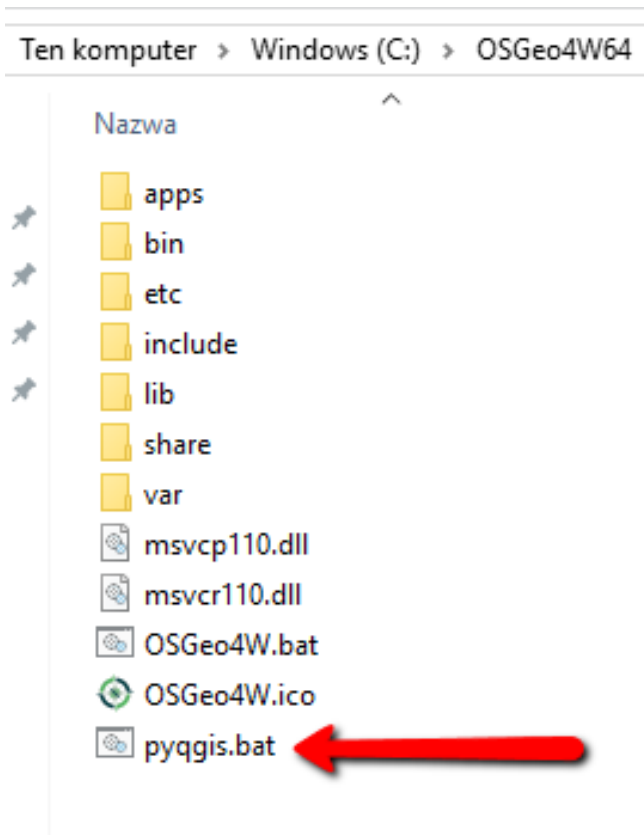


Windows (C:) > JACEK2 > QGISHEL18 > Hel18 > dzien5 > wtyczki > werteksylinii

	help	05.09.2018 10:03	Folder plików	
	i18n	26.02.2018 17:47	Folder plików	
	scripts	26.02.2018 17:47	Folder plików	
	test	05.09.2018 10:03	Folder plików	
	__init__.py	05.09.2018 10:03	Python File	2 KB
	icon.png	26.02.2018 17:47	Plik PNG	2 KB
	Makefile	05.09.2018 10:03	Plik	8 KB
	metadata.txt	05.09.2018 10:03	Dokument tekstowy	1 KB
	pb_tool.cfg	05.09.2018 10:03	Plik CFG	3 KB
	plugin_upload.py	26.02.2018 17:47	Python File	4 KB
	pylintrc	26.02.2018 17:47	Plik	9 KB
	README.html	05.09.2018 10:03	Chrome HTML Do...	2 KB
	README.txt	05.09.2018 10:03	Dokument tekstowy	1 KB
	resources.qrc	05.09.2018 10:03	Plik QRC	1 KB
	werteksy_linii.py	05.09.2018 10:03	Python File	7 KB
	werteksy_linii_dialog.py	05.09.2018 10:03	Python File	2 KB
	werteksy_linii_dialog_base.ui	05.09.2018 10:03	Plik UI	2 KB



KROK 3



```
C:\WINDOWS\system32\cmd.exe
System nie może odnaleźć określonej ścieżki.
Microsoft Windows [Version 10.0.17134.228]
(c) 2018 Microsoft Corporation. Wszelkie prawa zastrzeżone.

C:\OSGeo4W64>
```

Idziemy do katalogu w którym mamy wtyczkę

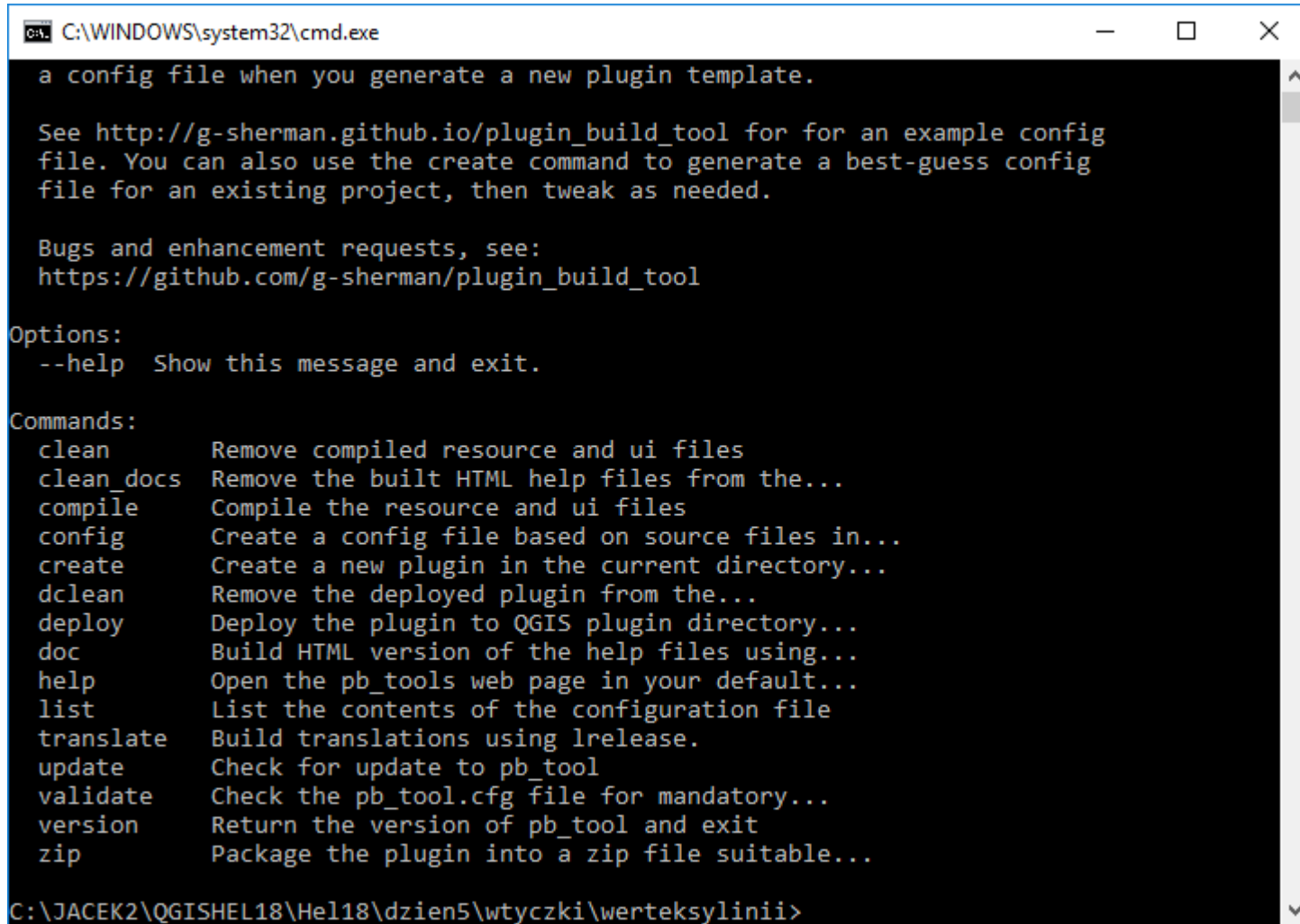
```
C:\WINDOWS\system32\cmd.exe
System nie może odnaleźć określonej ścieżki.
Microsoft Windows [Version 10.0.17134.228]
(c) 2018 Microsoft Corporation. Wszelkie prawa zastrzeżone.

C:\OSGeo4W64>cd C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii
C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii>

C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii>pb_tool
```


KROK 3

Uruchamiamy pb_tool i otrzymujemy komendy



```
C:\WINDOWS\system32\cmd.exe

a config file when you generate a new plugin template.

See http://g-sherman.github.io/plugin\_build\_tool for for an example config
file. You can also use the create command to generate a best-guess config
file for an existing project, then tweak as needed.

Bugs and enhancement requests, see:
https://github.com/g-sherman/plugin\_build\_tool

Options:
  --help  Show this message and exit.

Commands:
  clean      Remove compiled resource and ui files
  clean_docs Remove the built HTML help files from the...
  compile    Compile the resource and ui files
  config     Create a config file based on source files in...
  create     Create a new plugin in the current directory...
  dclean     Remove the deployed plugin from the...
  deploy     Deploy the plugin to QGIS plugin directory...
  doc        Build HTML version of the help files using...
  help       Open the pb_tools web page in your default...
  list       List the contents of the configuration file
  translate  Build translations using lrelease.
  update     Check for update to pb_tool
  validate   Check the pb_tool.cfg file for mandatory...
  version    Return the version of pb_tool and exit
  zip        Package the plugin into a zip file suitable...

C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii>
```

KROK 3

```
>pb_tool deploy
```

```
C:\WINDOWS\system32\cmd.exe - pb_tool deploy

Commands:
clean      Remove compiled resource and ui files
clean_docs Remove the built HTML help files from the...
compile    Compile the resource and ui files
config     Create a config file based on source files in...
create     Create a new plugin in the current directory...
dclean     Remove the deployed plugin from the...
deploy     Deploy the plugin to QGIS plugin directory...
doc        Build HTML version of the help files using...
help       Open the pb_tools web page in your default...
list       List the contents of the configuration file
translate  Build translations using lrelease.
update     Check for update to pb_tool
validate   Check the pb_tool.cfg file for mandatory...
version    Return the version of pb_tool and exit
zip        Package the plugin into a zip file suitable...

C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii>pb_tool deploy
QCoreApplication::applicationDirPath: Please instantiate the QApplication object first
QCoreApplication::applicationDirPath: Please instantiate the QApplication object first
Deploying to C:/Users/CentrumGIS/AppData/Roaming/QGIS/QGIS3/profiles/default/python/plugins\werteksy_linii
Deploying will:
    * Remove your currently deployed version
    * Compile the ui and resource files
    * Build the help docs
    * Copy everything to your C:/Users/CentrumGIS/AppData/Roaming/QGIS/QGIS3/profiles/default/python/pl
ugins\werteksy_linii directory
Proceed? [y/N]:
```

sprawdzamy

Your QGIS plugin directory is located at:
C:/Users/CentrumGIS/AppData/Roaming/QGIS/QGIS3/profiles/default/python/plugins

KROK 3

```
C:\WINDOWS\system32\cmd.exe

building [html]: targets for 1 source files that are out of date
updating environment: 1 added, 0 changed, 0 removed
reading sources... [100%] index
looking for now-outdated files... none found
pickling environment... done
checking consistency... done
preparing documents... done
writing output... [100%] index
generating indices... genindex
writing additional pages... search
copying static files... done
copying extra files... done
dumping search index in English (code: en) ... done
dumping object inventory... done
build succeeded, 1 warnings.

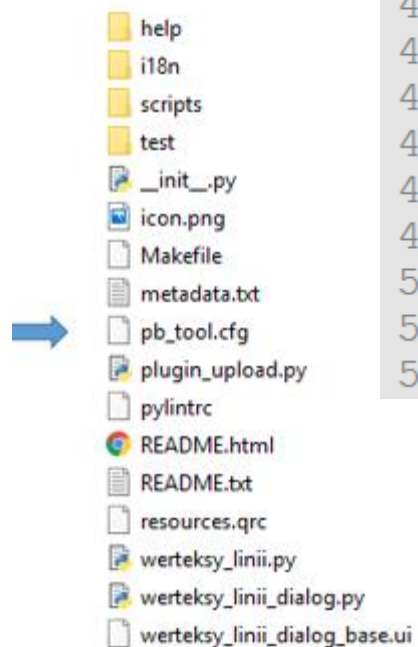
The HTML pages are in build\html.

Build finished. The HTML pages are in build/html.
Copying __init__.py
Copying werteksy_linii.py
Copying werteksy_linii_dialog.py
Copying werteksy_linii_dialog_base.ui
Copying resources.py
Copying metadata.txt
Copying icon.png
Copying help/build/html to C:/Users/CentrumGIS/AppData/Roaming/QGIS/QGIS3/profiles/default/python/plugins/werteksy_linii/help
C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii>
```

IF ERROR

IF ERROR

Otwieramy w Notpad++ `pb_tool.cfg`



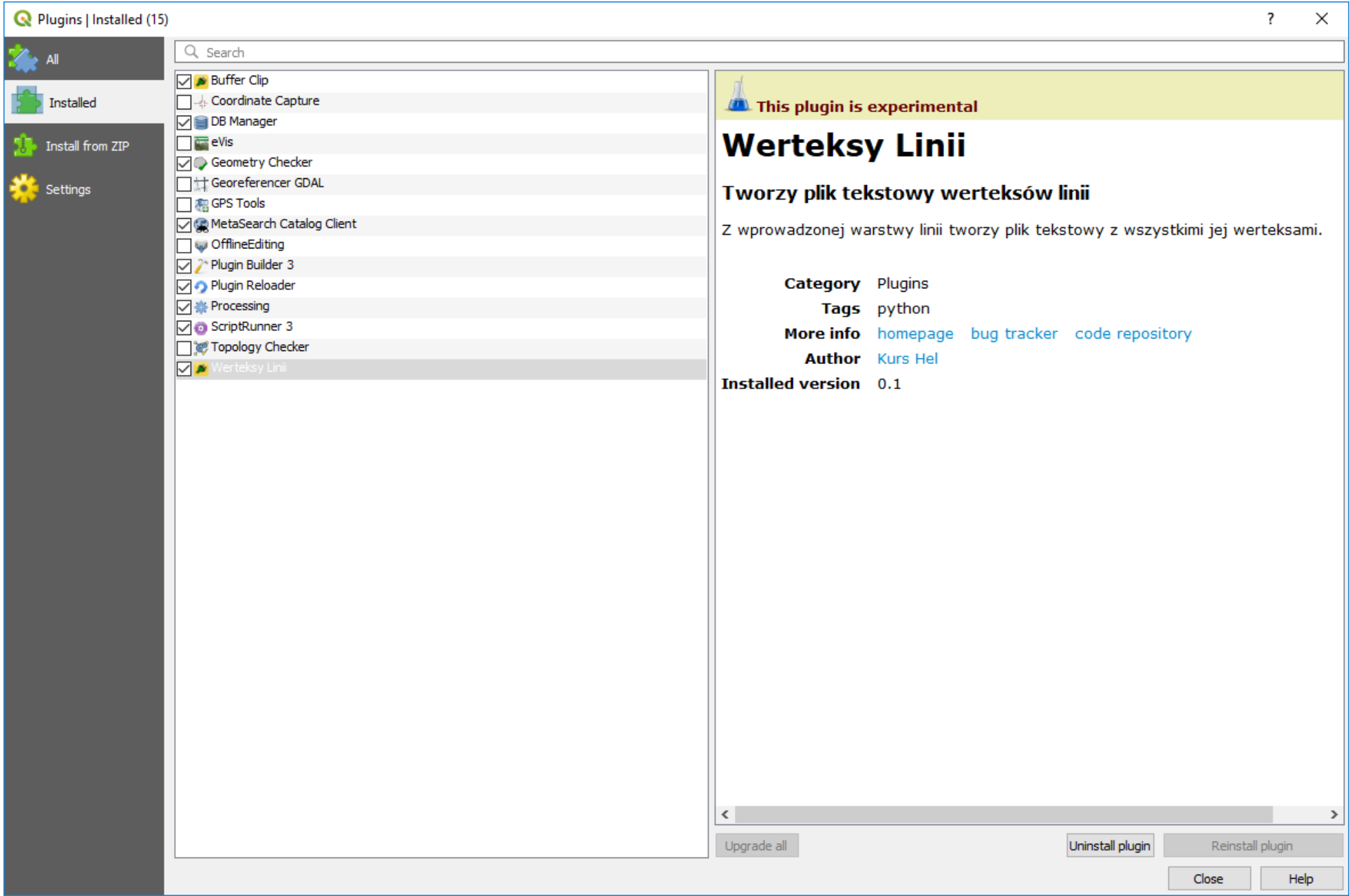
```
42 name: werteksy_linii
43
44 # Full path to where you want your plugin directory copied. If empty,
45 # the QGIS default path will be used. Don't include the plugin name in
46 # the path.
47 plugin_path:
48
49 [files]
50 # Python file that should be deployed with the plugin
51 python_files: __init__.py werteksy_linii.py werteksy_linii_dialog.py
52
```

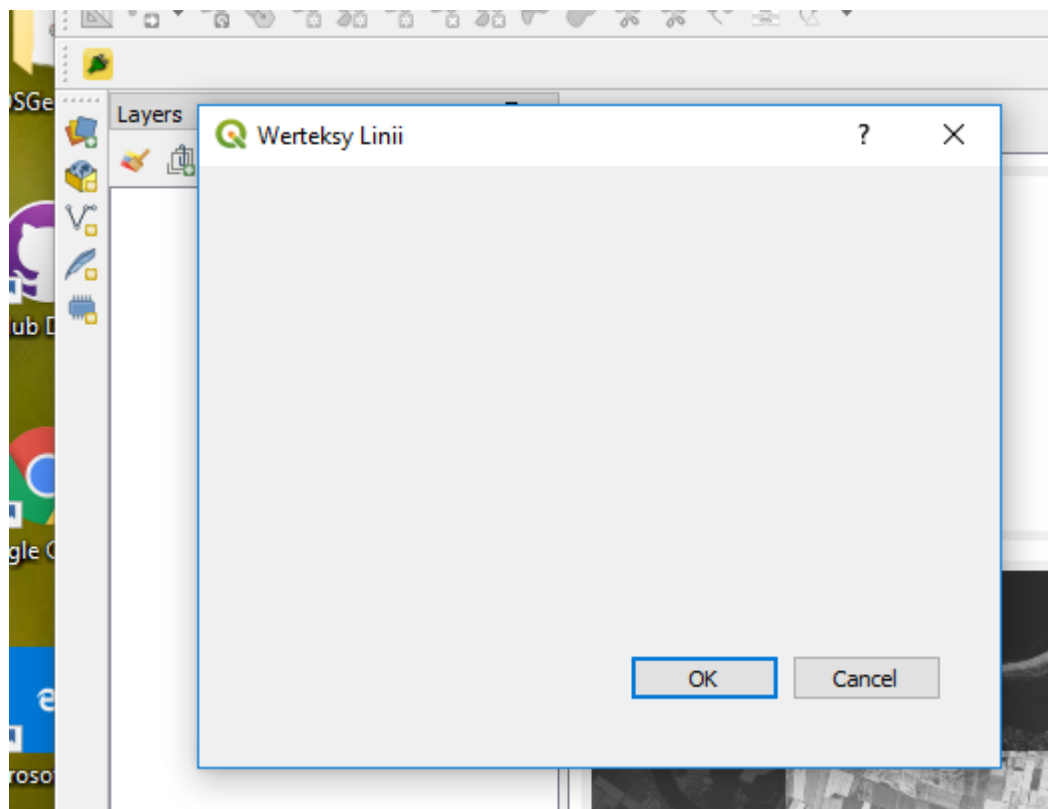
Your QGIS plugin directory is located at:

C:/Users/CentrumGIS/AppData/Roaming/QGIS/QGIS3/profiles/default/python/plugins

KROK 4

Zamykamy i
otwieramy
QGISA,
uaktywniamy
wtyczkę



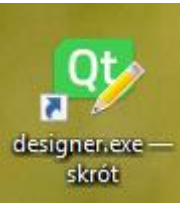


Wtyczka się uruchamia



base template

KROK 5 - QT
Designer
(projektowanie
GUI)



Qt Designer

Plik Edycja Formularz Widok Ustawienia Okno Pomoc

Panel widgetów

Filtr

LAYOUTS

Vertical Layout

Horizontal Layout

Grid Layout

Form Layout

SPACERS

Horizontal Spacer

Vertical Spacer

BUTTONS

Push Button

Tool Button

Radio Button

Check Box

Command Link Button

Dialog Button Box

Item Views (Model-Based)

List View

Tree View

Table View

Column View

Item Widgets (Item-Based)

List Widget

Tree Widget

Table Widget

Containers

Group Box

Scroll Area

Tool Box

Tab Widget

Stacked Widget

Frame

Qt

Nowy formularz - Qt Designer

templates\forms

Dialog with Buttons Bottom

Dialog with Buttons Right

Dialog without Buttons

Main Window

Widget

Widżety

OK

Anuluj

Projekt dla urządzeń specjalizowanych

Urządzenie: Żadne

Rozmiar ekranu: Domyślny rozmiar

to okno przy uruchamianiu

Utwórz

Otwórz...

Ostatnie

Zamknij

Otwórz formularz

« dzien5 » wtyczki » werteksylinii

Przeszukaj: werteksylinii

Organizuj Nowy folder

dzien4

GDS_Hel18

OneDrive

Ten komputer

Dokumenty

Muzyka

Obiekty 3D

Obrazy

Pobrane

Nazwa

Data modyfikacji

Typ

help

i18n

scripts

test

werteksy_linii_dialog_base.ui

Nazwa pliku: werteksy_linii_dialog_base.ui

Pliki Designer UI (*.ui)

Otwórz

Anuluj

Nazwy obiektów (nadajemy):

The screenshot shows the Qt Designer interface. On the left is the 'Input Widgets' palette. In the center is a canvas titled 'Qt Werteksy Linii - werteksy_linii_dialog_base.ui*' showing a dialog box with two text input fields labeled 'Warstwa linii:' and 'Plik tekstowy z werteksami:'. At the bottom of the dialog are 'OK' and 'Anuluj' buttons. On the right are two panels: 'Hierarchia obiektów' (Object Hierarchy) and 'Edytor właściwości' (Properties Editor).

Hierarchia obiektów

Obiekt	Klasa
WerteksyLiniiDialogBase	QDialog
button_box	QDialogButtonBox
label_tekst	QLabel
label_warstwy	QLabel
nazwa_tekstu	QLineEdit
nazwa_warstwy	QLineEdit

Edytor właściwości

Filtr: +

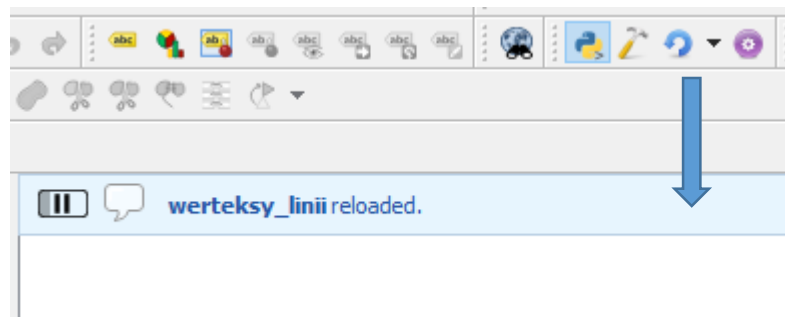
nazwa_tekstu : QLineEdit

Właściwość	Wartość
QObject	
objectName	nazwa_tekstu
QWidget	
enabled	<input checked="" type="checkbox"/>
geometry	[(160, 70), 281 x 20]
sizePolicy	[Expanding, Fixed, 0, 0]
minimumSize	0 x 0
maximumSize	16777215 x 16777215

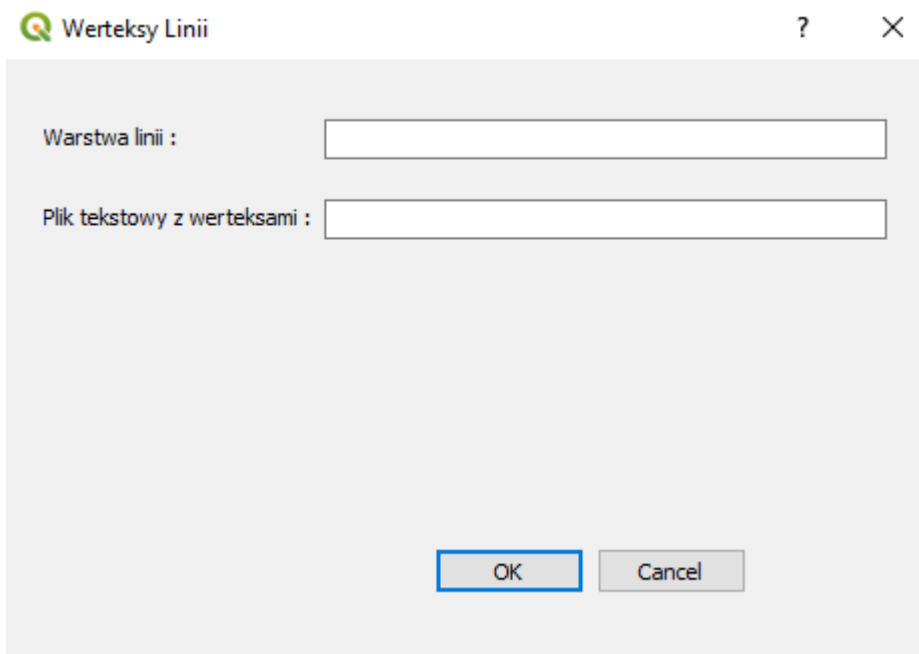
Red arrows indicate the selection of 'Line Edit' from the widget palette and the assignment of the 'nazwa_tekstu' object name in the Properties Editor.

Po każdym użyciu Qt Designera (oraz zmianie kodu) i zapisaniu rezultatów należy:

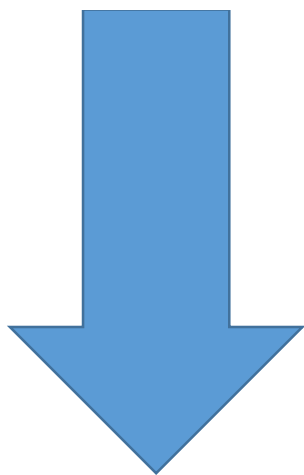
```
C:\JACEK2\QGISHEL18\Hel18\dzien5\wtyczki\werteksylinii>pb_tool deploy
```



Używamy Reload Plugin po konfiguracji



```
def run(self):  
    """Run method that performs all the real work"""  
    # show the dialog  
    self.dlg.show()  
    # Run the dialog event loop  
    result = self.dlg.exec_()  
    # See if OK was pressed  
    if result:  
        # Do something useful here - delete the line containing pass and  
        # substitute with your code.  
        pass
```



KROK 6 -

Uzupełnianie kodu

nazwa_plugin.py

```
32 import os.path
33 from osgeo import ogr
```

```
if result:
    # Do something useful here - delete the line containing pass and
    # substitute with your code.

    driver=ogr.GetDriverByName('ESRI shapefile')

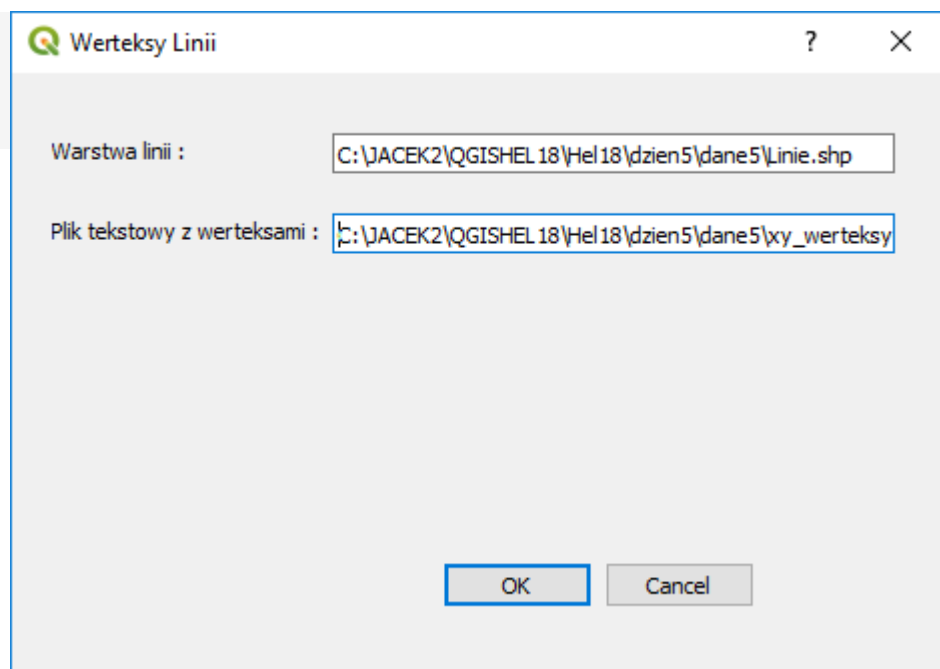
    # parametry
    #ff=r"C:\JACEK2\QGISHEL18\Hel18\dzien5\dane5\Linie.shp"

    #p_text=r"C:\JACEK2\QGISHEL18\Hel18\dzien5\dane5\xy_werteksy.txt"
    ff=self.dlg.nazwa_warstwy.text()
    p_text=self.dlg.nazwa_tekstu.text()

    dataSource=driver.Open(ff,0) # czytanie i pisanie
```

label_tekst	QLabel
label_warstwy	QLabel
nazwa_tekstu	QLineEdit
nazwa_warstwy	QLineEdit

KROK 7 - **pb_tool Deploy** i **Reload plugin**



```
0,0,439709.85,706167.63
0,1,439572.82,706163.21
0,2,439491.05,706154.37
0,3,439438.01,706132.27
0,4,439400.44,706074.81
0,5,439369.5,706021.77
0,6,439329.72,705981.99
0,7,439307.62,705940.0
0,8,439278.89,705926.74
0,9,439221.43,705895.8
0,10,439163.97,705878.12
0,11,439110.92,705844.97
0,12,439071.14,705833.92
0,13,439007.05,705814.03
0,14,438883.29,705787.51
0,15,438812.57,705685.84
1,0,439654.6,706435.05
1,1,439594.92,706410.74
1,2,439590.5,706328.97
1,3,439541.88,706315.71
1,4,439506.52,706267.09
1,5,439504.31,706225.09
1,6,439491.05,706154.37
2,0,438752.9,706236.15
2,1,438805.94,706127.85
2,2,438870.07,706001.44
```

KROK DODATKOWY ZMIANA IKONKI

24 x 24 piksele

Nowa ikonka do katalogu



Modyfikacja **resources.qrc**

```
<RCC>
...<qresource prefix="/plugins/LiniaWarteksy">
...<file>icon.png</file>
...</qresource>
</RCC>
```



```
<RCC>
...<qresource prefix="/plugins/LiniaWarteksy">
...<file>xy.png</file>
...</qresource>
</RCC>
```

Modyfikacja **metadata.txt**

```
homepage=""
category=Plugins
icon=icon.png
# experimental flag
experimental=True
```



```
homepage=""
category=Plugins
icon=xy.png
# experimental flag
```

Modyfikacja **nazwa_plugin.py (werteksy_linii.py)**

```
def initGui(self):
..."""Create the menu entries and toolbar icons in...
...icon_path = './plugins/LiniaWarteksy/icon.png'
...self.add_action(
...icon_path,
...text=self.tr(u''),
...callback=self.run,
...parent=self.iface.mainWindow())
```



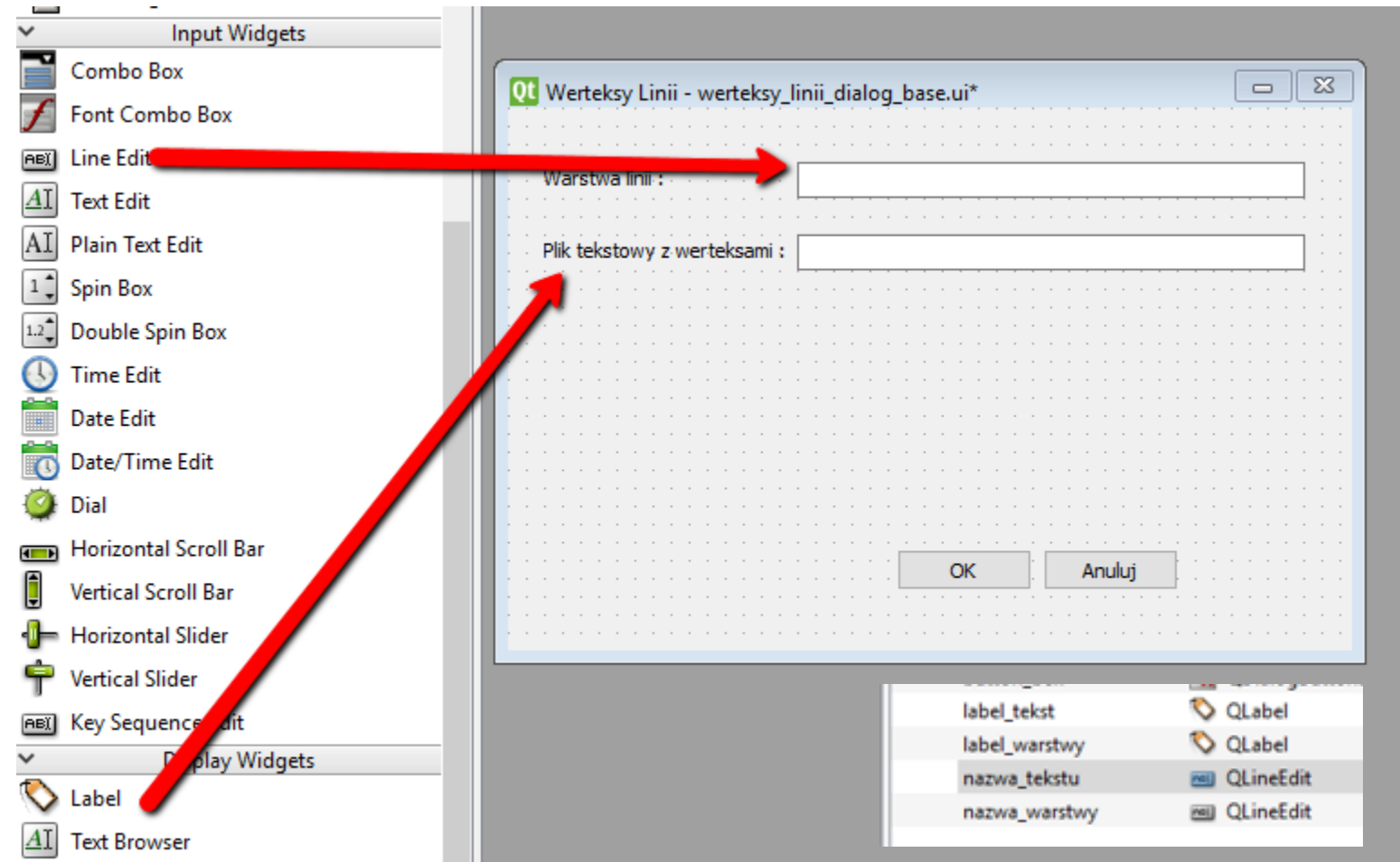
```
def initGui(self):
..."""Create the menu entries and toolbar icons inside...
...icon_path = './plugins/LiniaWarteksy/xy.png'
...self.add_action(
...icon_path,
...text=self.tr(u'Werteksy linii'),
...callback=self.run,
...parent=self.iface.mainWindow())
```

**pb_tool
deploy i
Reload**

PROJEKTOWANIE GUI

GUI 1

Wprowadzanie stringu

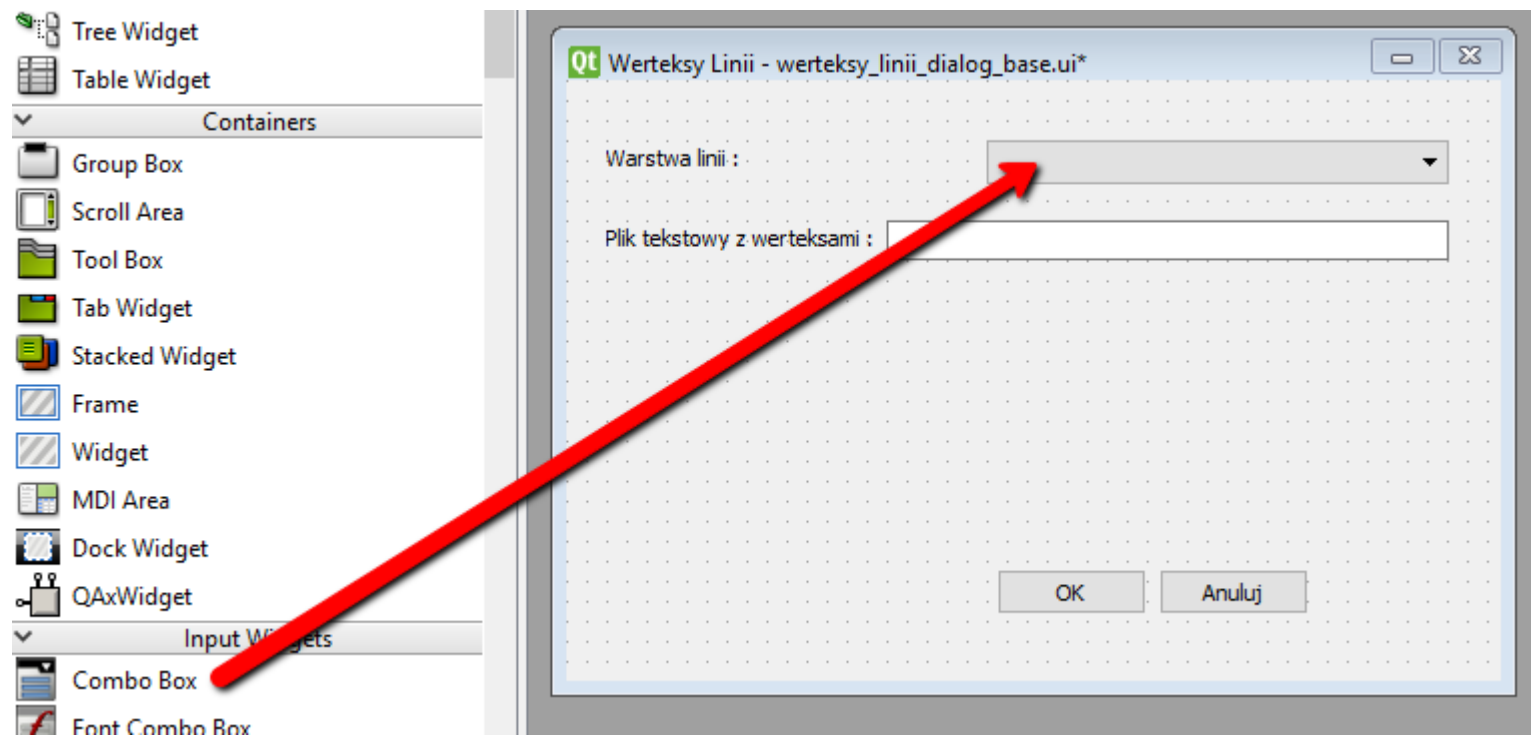


```
# parametry
#ff=r"C:\JACEK2\QGISHEL18\Hel18\dzien5\dane5\Linie.shp"

#p_text=r"C:\JACEK2\QGISHEL18\Hel18\dzien5\dane5\xy_werteksy.txt"
ff=self.dlg.nazwa_warstwy.text()
p_text=self.dlg.nazwa_tekstu.text()
```


GUI 2

Wybór warstwy z dostępnych



comboBox	QComboBox
label_tekst	QLabel
label_warstwy	QLabel
nazwa_tekstu	QLineEdit







```
from PyQt5.QtCore import QSettings, QTranslator, qVersion, QCoreApplication
from PyQt5.QtGui import QIcon
from PyQt5.QtWidgets import QAction
from qgis.core import *
```

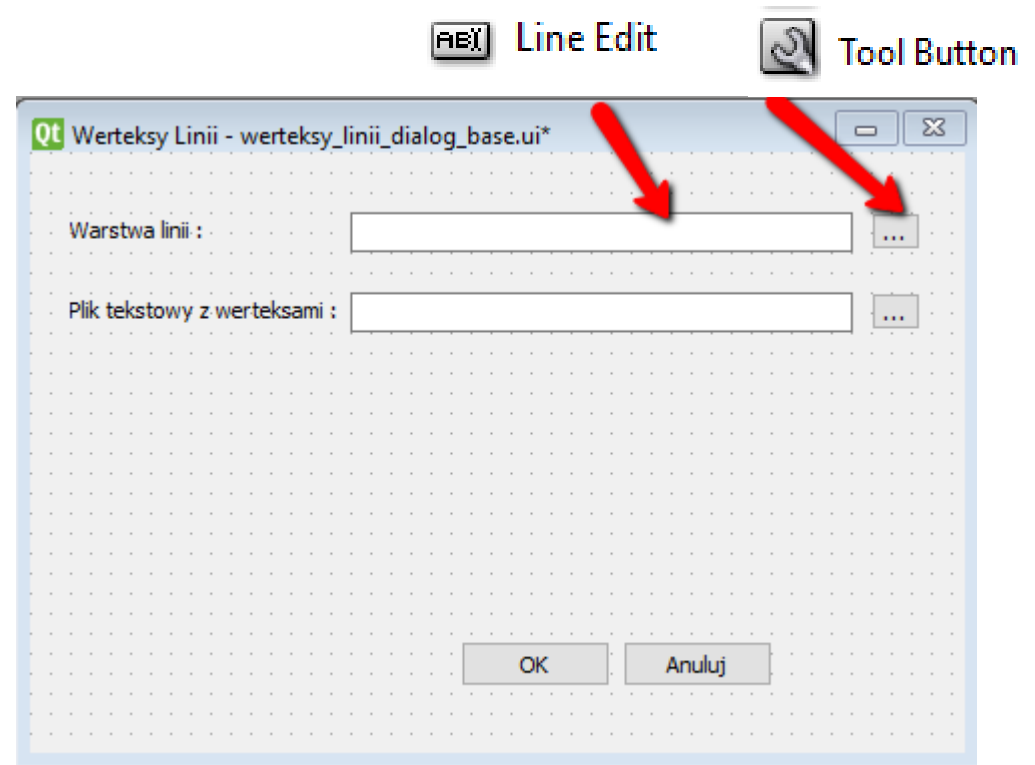
```
def run(self):
    """Run method that performs all the real work"""
    # wypelnienie Combo Box
    layers=QgsProject.instance().mapLayers().values()
    layer_listV=[]
    layer_listVn=[]
    self.dlg.comboBox.clear()
    for layer in layers:
        if layer.type()==0: # vector
            layer_listV.append(layer.source())
            layer_listVn.append(layer.name())
    self.dlg.comboBox.addItem(layer_listVn)
    # show the dialog
    self.dlg.show()
    # Run the dialog event loop
    result = self.dlg.exec_()
    # See if OK was pressed

    if result:
        # Do something useful here - delete the line containing pass and
        # substitute with your code.
        # ComboBox
        selLayerIndexV=self.dlg.comboBox.currentIndex()
        ff=layer_listV[selLayerIndexV]
```

GUI 3

Input and Output dialog – okno czytania i zapisywania warstwy otwierane za pomocą Tool Button

label_tekst	 QLabel
label_warstwy	 QLabel
nazwa_tekstu	 QLineEdit
nazwa_warstwy	 QLineEdit
toolButton_in	 QToolButton
toolButton_out	 QToolButton



```
24 from PyQt5.QtCore import QSettings, QTranslator, qVersion, QCoreApplication
25 from PyQt5.QtGui import QIcon
26 from PyQt5.QtWidgets import QAction, QFileDialog
27 from qgis.core import *
28 # Initialize Qt resources from file resources.py
29 from .resources import *
30 # Import the code for the dialog
31 from .werteksy_linii_dialog import WerteksyLiniiDialog
32 import os.path
33 from osgeo import ogr
34
35 ppath= ''
```

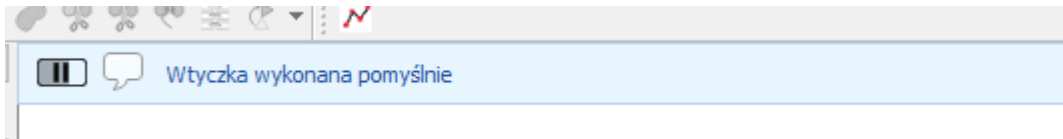
```
76 self.dlg.nazwa_warstwy.clear()
77 self.dlg.toolButton_in.clicked.connect(self.select_open_file)
78 self.dlg.nazwa_tekstu.clear()
79 self.dlg.toolButton_out.clicked.connect(self.select_output_file)
80 # noinspection PyMethodMayBeStatic
81 def tr(self, message):
82     """Get the translation for a string using Qt translation API.
83
```

```
189
190 def select_open_file(self):
191     global ppath
192     filename=QFileDialog.getOpenFileName(self.dlg,"Wczytaj warstwe linii",ppath,'*.shp')
193     filename=str(filename[0])
194     if filename!='':
195         ppath=os.path.dirname(filename)
196     self.dlg.nazwa_warstwy.setText(filename)
197
198 def select_output_file(self):
199     global ppath
200     filename2=QFileDialog.getSaveFileName(self.dlg,"Wynikowy plik tekstowy",ppath,'*.txt')
201     filename2=str(filename2[0])
202     if filename2!='':
203         ppath=os.path.dirname(filename2)
204     self.dlg.nazwa_tekstu.setText(filename2)
205
206 def run(self):
207     """Run method that performs all the real work"""
```

```
215 if result:
216     # Do something useful here - delete the line containing pass and
217     # substitute with your code.
218
219     driver=ogr.GetDriverByName('ESRI shapefile')
220     # parametry
221
222     ff=self.dlg.nazwa_warstwy.text()
223     p_text=self.dlg.nazwa_tekstu.text()
224
225     dataSource=driver.Open(ff,0) # czytanie i pisanie
```

GUI 4

Messages
+
Pozostanie
wtyczki



```
24 from PyQt5.QtCore import QSettings, QTranslator, qVersion, QCoreApplication
25 from PyQt5.QtGui import QIcon
26 from PyQt5.QtWidgets import QAction, QFileDialog
27 from qgis.core import *
28 from qgis.utils import iface
29 # Initialize Qt resources from file resources.py
30 from .resources import *
31 # Import the code for the dialog
32 from .werteksy_linii_dialog import WerteksyLiniiDialog
33 import os.path
34 from osgeo import ogr
35 from qgis.gui import QgsMessageBar
```

```
250 feature.Destroy()
251 iface.messageBar().pushMessage("Wtyczka wykonana pomyślnie")
252 result=self.dlg.exec_()
253
```

GUI 5

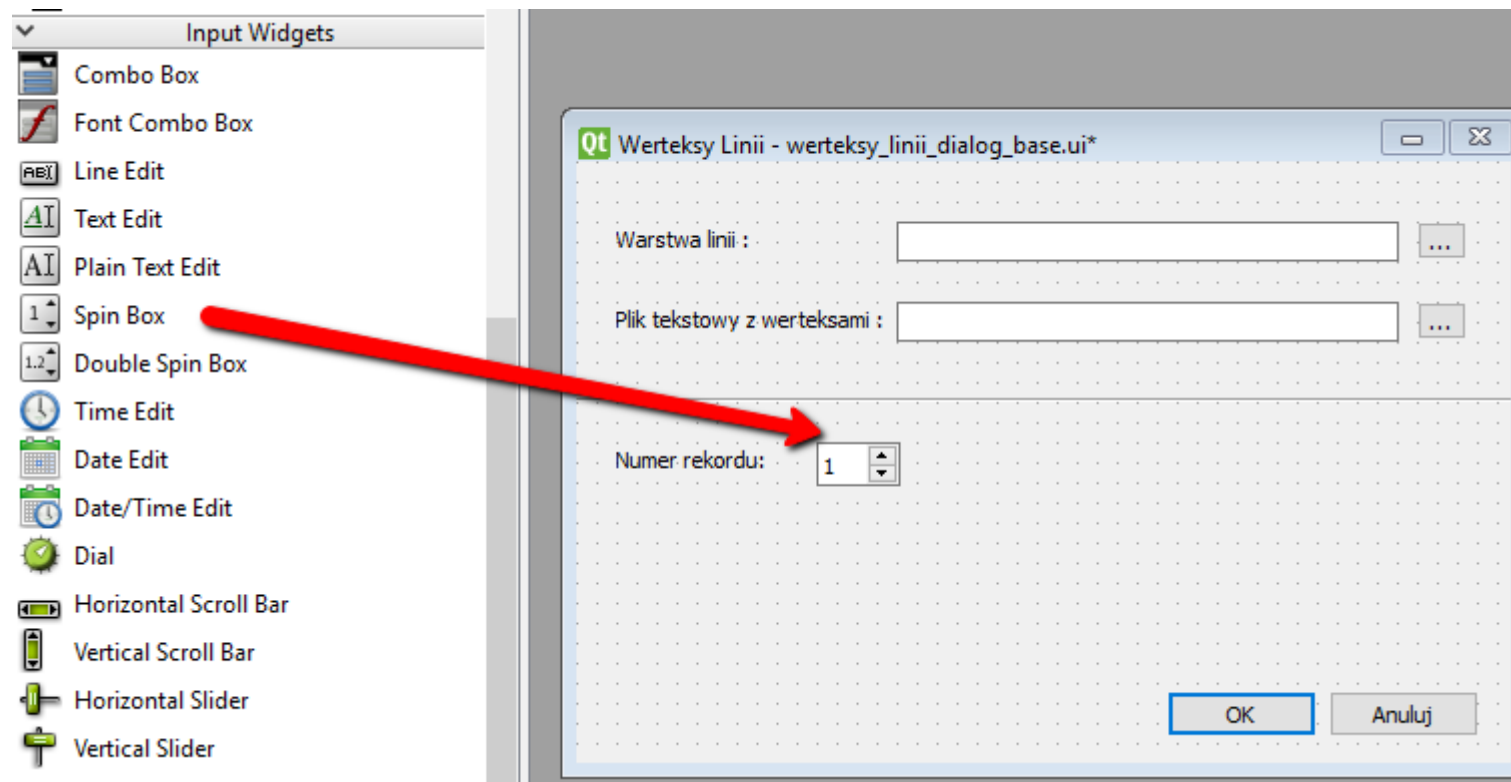
Wprowadzanie liczb
całkowitych i rzeczywistych



Spin Box



Double Spin Box



Double Spin Box działa podobnie
ale pozwala wybrać liczbę
rzeczywistą

button_box		QDialogButtonBox
label_rek		QLabel
label_tekst		QLabel
label_warstwy		QLabel
line		Line
nazwa_tekstu		QLineEdit
nazwa_warstwy		QLineEdit
spinBox		QSpinBox
toolButton_in		QToolButton
toolButton_out		QToolButton


```

ff=self.dlg.nazwa_warstwy.text()
p_text=self.dlg.nazwa_tekstu.text()
nr_rek=self.dlg.spinBox.value()

dataSource=driver.Open(ff,0) # czytanie i pisanie

vlayer=dataSource.GetLayer()
#print vlayer.GetGeomType()
numFeature=vlayer.GetFeatureCount()
#print numFeature
file=open(p_text,"w")
for i in range(0, numFeature):
    feature=vlayer.GetFeature(i)

    geometry=feature.GetGeometryRef()
    nwtx=geometry.GetPointCount()

    for j in range(0,nwtx):
        x=geometry.GetX(j)
        y=geometry.GetY(j)

        ss= str(i)+','+str(j)+','+str(round(x,2))+','+str(round(y,2))+'\n'
        file.write(ss)
ss='Wybrano rekord : '+str(nr_rek)+'\n'
file.write(ss)
file.close()
feature.Destroy()
iface.messageBar().pushMessage("Wtyczka wykonana pomyślnie")
result=self.dlg.exec_()

```

```

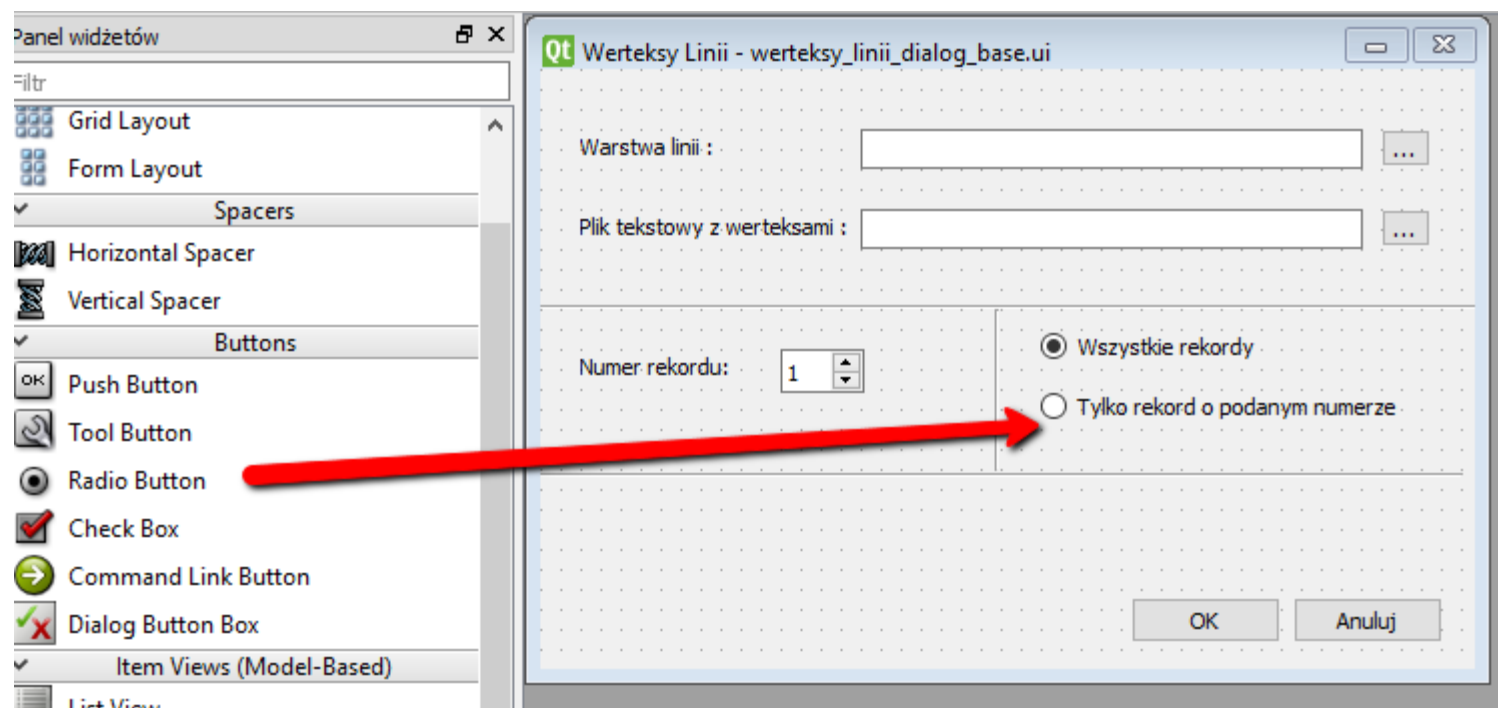
3,3,439402.32,705613.34
3,4,439475.58,705659.32
3,5,439489.51,705689.59
Wybrano rekord : 2

```

GUI 6

Wprowadzanie opcji za pomocą Radio Button

WerteksyLiniiDialogBase	QDialog
button_box	QDialogButtonBox
label_rek	QLabel
label_tekst	QLabel
label_warstwy	QLabel
line	Line
line_2	Line
line_3	Line
nazwa_tekstu	QLineEdit
nazwa_warstwy	QLineEdit
radioButton_1	QRadioButton
radioButton_2	QRadioButton
spinBox	QSpinBox
toolButton_in	QToolButton
toolButton_out	QToolButton



```
Plik Edycja Format Widok Pomoc
1,0,439654.6,706435.05
1,1,439594.92,706410.74
1,2,439590.5,706328.97
1,3,439541.88,706315.71
1,4,439506.52,706267.09
1,5,439504.31,706225.09
1,6,439491.05,706154.37
Wybrano rekord : 2
```

```
227 ff=self.dlg.nazwa_warstwy.text()
228 p_text=self.dlg.nazwa_tekstu.text()
229 nr_rek=self.dlg.spinBox.value()
230
231 B1=self.dlg.radioButton_1.isChecked()
232 B2=self.dlg.radioButton_2.isChecked()
233 dataSource=driver.Open(ff,0) # czytanie i pisanie
234
```

```
239 file=open(p_text,"w")
240 if B1==1:
241     for i in range(0, numFeature):
242         feature=vlayer.GetFeature(i)
243
244         geometry=feature.GetGeometryRef()
245         nwtX=geometry.GetPointCount()
246
247         for j in range(0,nwtX):
248             x=geometry.GetX(j)
249             y=geometry.GetY(j)
250
251             ss= str(i)+','+str(j)+','+str(round(x,2))+','+str(round(y,2))+'\n'
252             file.write(ss)
253 if B2==1:
254     i=nr_rek-1
255     feature=vlayer.GetFeature(i)
256
257     geometry=feature.GetGeometryRef()
258     nwtX=geometry.GetPointCount()
259
260     for j in range(0,nwtX):
261         x=geometry.GetX(j)
262         y=geometry.GetY(j)
263
264         ss= str(i)+','+str(j)+','+str(round(x,2))+','+str(round(y,2))+'\n'
265         file.write(ss)
266 ss='Wybrano rekord : '+str(nr_rek)+'\n'
```

GUI 7

Wprowadzenie tekstu w GUI

button_box	QDialogButtonBox
label_rek	QLabel
label_tekst	QLabel
label_warstwy	QLabel
line	Line
line_2	Line
line_3	Line
nazwa_tekstu	QLineEdit
nazwa_warstwy	QLineEdit
plainTextEdit	QPlainTextEdit
radioButton_1	QRadioButton
radioButton_2	QRadioButton
spinBox	QSpinBox
toolButton_in	QToolButton
toolButton_out	QToolButton

Edytor właściwości

Filtr

plainTextEdit : QPlainTextEdit

Właściwość	Wartość
verticalScrollBarPolicy	ScrollBarAsNeeded
horizontalScrollBarPo...	ScrollBarAsNeeded
sizeAdjustPolicy	AdjustIgnored
QPlainTextEdit	
tabChangesFocus	<input type="checkbox"/>
> documentTitle	
undoRedoEnabled	<input checked="" type="checkbox"/>
lineWrapMode	WidgetWidth
readOnly	<input checked="" type="checkbox"/>

Item Views (Model-Based)

- List View
- Tree View
- Table View
- Column View

Item Widgets (Item-Based)

- List Widget
- Tree Widget
- Table Widget

Containers

- Group Box
- Scroll Area
- Tool Box
- Tab Widget
- Stacked Widget
- Frame
- Widget
- MDI Area
- Dock Widget
- QAxWidget

Input Widgets

- Combo Box
- Font Combo Box
- Line Edit
- Text Edit
- Plain Text Edit

Qt Werteksy Linii - werteksy_linii_dialog_base.ui*

Warstwa linii :

Plik tekstowy z werteksami :

Numer rekordu:

☒ Wszystkie rekordy

☐ Tylko rekord o podanym numerze

OK Anuluj

```
215         # See if OK was pressed
216         self.dlg.plainTextEdit.clear()
217         errr=0
218         if result:
```

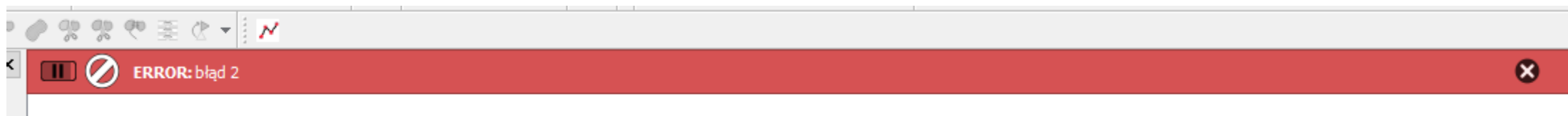
```
ss= str(i)+','+str( j)+','+str( round(x,2))+','+str(round(y,2))+'\n'
self.dlg.plainTextEdit.appendPlainText(ss)
file.write(ss)
```

Po zakończeniu testowania wprowadzamy konstrukcję :

try:

except:

i dodajemy messageBar o błędzie programu (ewentualnie z numerem błędu)



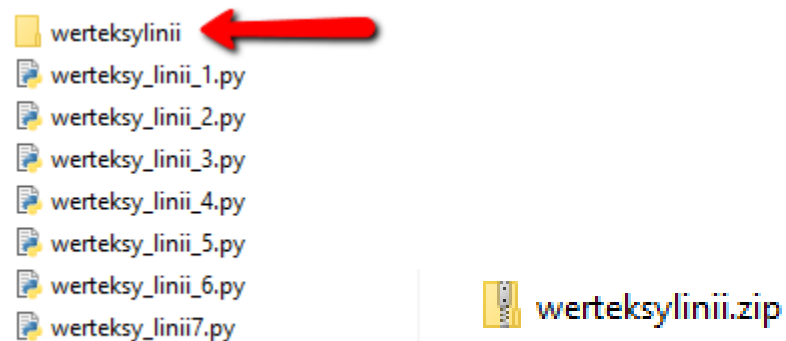
```

215 # See if OK was pressed
216 self.dlg.plainTextEdit.clear()
217 errr=0
218 if result:
219     # Do something useful here - delete the line containing pass and
220     # substitute with your code.
221     try:
222
223         driver=ogr.GetDriverByName('ESRI shapefile')
224
225         # parametry
226
227         ff=self.dlg.nazwa_warstwy.text()
228         p_text=self.dlg.nazwa_tekstu.text()
229         nr_rek=self.dlg.spinBox.value()
230         if ff=="":
231             errr=1
232         if p_text=="":
233             errr=2
234
235         B1=self.dlg.radioButton_1.isChecked()
236
237         feature.Destroy()
238         iface.messageBar().pushMessage("Wtyczka wykonana pomyślnie")
239         result=self.dlg.exec_()
240     except:
241         errrb="błąd "+str(errr)
242         iface.messageBar().pushMessage("ERROR",errrb,level=Qgis.Critical)

```

Rozprowadzanie programu:

1. ZIP katalogu z wtyczką



2. Załadowanie wtyczki

