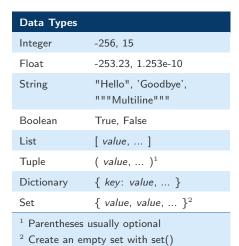
Powering Up Your FME workspaces with Python



Statements

If Statement

if expression:

statements elif expression:

statements

else:

statements

While Loop

while expression:

statements

For Loop

for var in collection:

statements

Counting For Loop

for i in range(start, end [, step]):
 statements

(start is included; end is not)

Arithmetic Operators

x + y	add	x - y	subtract
x * y	multiply	x / y	divide
x % y	modulus	× ** y	x^{y}

Assignment shortcuts: \times op= y Example: \times += 1 increments \times

Comparison Operators

x <y< th=""><th>Less</th><th>x<=y</th><th>Less or eq</th></y<>	Less	x<=y	Less or eq
x>y	Greater	x>=y	Greater or eq
x==y	Equal	x!=y	Not equal

Boolean Operators

 $\mathsf{not}\;\mathsf{x}\qquad \quad \mathsf{x}\;\mathsf{and}\;\mathsf{y}\qquad \quad \mathsf{x}\;\mathsf{or}\;\mathsf{y}$

Exception Handling

try:

statements

except [exception type [as var]]:

statements

finally:

statements

Conversion Functions

int(expr)	Converts expr to integer
float(expr)	Converts expr to float
str(expr)	Converts expr to string
chr(num)	ASCII char num

String / List / Tuple Operations

len(s)	length of s
s[i]	ith item in s (0-based)
s[start:end]	slice of <i>s</i> from <i>start</i> (included) to <i>end</i> (excluded)
x in s	True if x is contained in s
x not in s	True if x is not contained in s
s + t	the concatenation of \boldsymbol{s} with \boldsymbol{t}
s * n	n copies of s concatenated
sorted(s)	a sorted copy of s
s.index(item)	position in s of item

More String Operations

s.lower()	lowercase copy of s
s.replace(old, new)	copy of s with old replaced with new
s.split(delim)	list of substrings delimited by <i>delim</i>
s.strip()	copy of <i>s</i> with whitespace trimmed
s.upper()	uppercase copy of s

See also http://docs.python.org/library/st dtypes.html#string-methods



Mutating	List	Operations	
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del <i>lst[i]</i>	Deletes ith item from Ist
$\mathit{lst}.append(e)$	Appends e to Ist
lst.insert(i, e)	Inserts <i>e</i> before <i>i</i> th item in <i>lst</i>
/st.sort()	Sorts Ist

See also http://docs.python.org/library/st dtypes.html#typesseq-mutable

Dictionary Operations

len(d)	Number of items in d
del d[key]	Removes key from d
key in d	True if d contains key
d.keys()	Returns a list of keys in d

See also http://docs.python.org/library/st dtypes.html#mapping-types-dict

Function Definitions

def name(arg1, arg2, ...):
 statements
 return expr

String Formatting

"Hello, {0} {1}".format("abe", "jones")

Hello, abe jones

"Hello, $\{fn\}$ $\{In\}$ ".format(fn="abe", In="jones")

Hello, abe jones

"You owe me \${0:,.2f}".format(253422.3)

You owe me \$253,422.30

`{:%Y-%m-%d

H:%M:%S'.format(datetime.now())

2012-05-16 15:04:33

See also http://docs.python.org/library/str ing.html#format-specification-mini-langua ge

Useful Functions

exit(code) Terminate program with exit code

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by sschaub

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https://fmeuc.com

Other References

https://www.cheatography.com/davechild/cheat-sheets/python/

More Python Cheatsheet Goodness

https://community.safe.com/

FME Community

https://community.safe.com/s/article/python-and-fme-basics

Tutorial: Python and FME Basics

https://docs.safe.com/fme/html/fmepython/index.html

Official FME Python API Documentation

Code Snippets

Loop Over Sequence

for index, value in enumerate(seq):

print("{}: {}".format(index, value))

Loop Over Dictionary

for key in sorted(dict):
 print(dict[key])

Read a File

with open("filename", "r") as f:

for line in f:

Strip newline

 $\mathsf{line} = \mathsf{line}.\mathsf{rstrip}(" \backslash n")$

print(line)

FME Execution Order

- 1. Python Scripted Parameter (in order)
- 2. FME Python Startup script
- 3. Workspace with PythonCaller and PythonCreator
- 4. FME Python Shutdown script

FMELogfile()	
logMessageString(message, severity)	Write a Message to the log, severity is optional
FME_INFORM	The default log level
FME_WARN	Warning messages
FME_ERROR	Error messages
FME FATAL	Fatal error messages

FMEFeature()	
getAttribute(attributename)	Query attribute value
setAttribute(attributeName, attributeValue)	Set an attribute value
getGeometry()	Query geometry
removeAttribute()	Remove attribute
getAllAttributes()	Get a list with all attributes

FME Python Startup Script	
fme.logFileName	The name of the log file used for this translation.
fme.macroValues	A Python dictionary, indexed by macro name, which holds the value of each macro known within the workspace or mapping file at the end of parsing.

FME Python Shutdown Script		
Note: To import the 'fme' statement import fme.	Python module, execute the	
fme.failureMessage	The failure message if the translation failed, blank if the translation succeeded.	
fme.featuresRead	A Python dictionary, indexed by feature type, which holds the number of features read for that feature type.	
fme.featuresWritten	A Python dictionary, indexed by feature type, which holds the number of features written for that feature type.	
fme.logFileName	The name of the log file used for this translation.	
fme.status	False if the translation failed and True if it was successful	
fme.totalFeaturesRead	The total number of features read	
fme.totalFeaturesWritten	The total number of features written	

FME Web Services API

Note: Use with 'import fmewebservices'

${\sf FMENamedConnectionMan} \\ {\sf ager()} \\$	Get the instance of the manager object.
FMENamedConnectionMan ager.getNamedConnection('name')	Obtain a named connection which does not block access on the DB to that given named connection. Will return None if the connection name doesn't exist.
FMEBasicConnection.getUs ername()	Retrieves the user name associated with this connection.
FMEBasicConnection.getPa ssword()	Retrieves the user password associated with this connection.
FMEBasicConnection.getTy pe()	Retrieves the type of the named connection.

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