Teams
Q&A for work
Learn More

How to pass arguments to main function within Python module?

Ask Question

Find your dream job
on a career site built just for developers
stackoverflow Jobs
Get started

asked 2 years, 1 month ago
viewed 17,500 times
active 2 years, 1 month ago

8

I have recently started learning more about Python Packages and Modules. I'm currently busy updating my existing modules so that that can be run as script or imported as a module into my other code. I'm not sure how to construct my input arguments within my module and pass them to the main() function within my module.

I've have written my my **main()** function and called it under **if __name__ == '__main__'** passing the input arguments. The inputs are currently hard coded to show what I'm trying to achieve. Any help in how to correctly construct my input arguments that the user will pass, which will then be passed onto the main function will be appreciated.

As mentioned I'm trying to be able to use the following as a script when used directly or imported as a module into my other code and run from there. If I import it as a module would I call the **main()** function when importing it? Is the following structure correct in how I have written the following? Any advice is appreciated.

```
'''
Created on March 12, 2017

Create a new ArcHydro Schema

File Geodatabase and Rasters

Folder

@author: PeterW
'''
# import site-packages and modules
import re
from pathlib import Path
import arcpy

# set environment settings
arcpy.env.overwriteOutput = True


def archydro_rasters_folder(workspace):
    """Create rasters folder directory
    if it doesn't already exist"""
    if layers_folder.exists():
        arcpy.AddMessage("Rasters folder: {0} exists".format(layers_name))
    else:
        layers_folder.mkdir(parents=True)
        arcpy.AddMessage("Rasters folder {0} created".format(layers_name))


def archydro_fgdb_schema(workspace, schema, dem):
    """Create file geodatabase using XML
    schema and set coordinate system based
```

Updated: 17/03/13

The following is my updated Python module based on Jonathan's suggestions:

```
    fgdb = "{0}.gdb".format(modei_name)
    if arcpy.Exists(str(Path(workspace, fgdb))):
        arcpy.AddMessage("{0} file geodatabase exists".format(fgdb))
    else:
        new_fgdb = arcpy.CreateFileGDB_management(str(workspace), fgdb)
        import_type = "SCHEMA_ONLY"
        config_keyword = "DEFAULTS"
        arcpy.AddMessage("New {0} file geodatabase created".format(fgdb))
        arcpy.ImportXMLWorkspaceDocument_management(new_fgdb, schema,
                                                    import_type,
                                                    config_keyword)

        arcpy.AddMessage("ArcHydro schema imported")
        projection = arcpy.Describe(dem).spatialReference
        projection_name = projection.PCSName
        feature_dataset = Path(workspace, fgdb, "Layers")
        arcpy.DefineProjection_management(str(feature_dataset),
                                          projection)
        arcpy.AddMessage("Changed projection to {0}".format(projection_name))


def model_schema(workspace, schema, dem):
    """Create model schema: rasters folder
    and file geodatabase"""
    rasters_directory(workspace)
    fgdb_schema(schema, dem, workspace)


if __name__ == '__main__':
    parser = argparse.ArgumentParser(description='Create a ArcHydro schema')
    parser.add_argument('--workspace', metavar='path', required=True,
                        help='the path to workspace')
    parser.add_argument('--schema', metavar='path', required=True,
                        help='path to schema')
    parser.add_argument('--dem', metavar='path', required=True,
                        help='path to dem')
    args = parser.parse_args()
    model_schema(workspace=args.workspace, schema=args.schema, dem=args.dem)
```

python module arguments packages

share edit

edited Mar 13 '17 at 19:19

asked Mar 12 '17 at 12:39
Peter Wilson
172 ●1 ●4 ●15

add a comment

1 Answer

active oldest votes

9

This looks correct for me, and yes if you're looking to use this as a module you would import main. Though, it would probably be better to name it in a more descriptive way.

To clarify how `__main__` and the function `main()` works. When you execute a module it will have a name which is stored in `__name__`. If you execute the module stand alone as a script it will have the name `__main__`. If you execute it as part of a module ie import it into another module it will have the name of the module.

The function `main()` can be named anything you would like, and that wouldn't affect your program. It's commonly named `main` in small scripts but it's not a particularly good name if it's part of a larger body of code.

In terms letting a user to input arguments when running as a script I would look into either using `argparse` or `click`

An example of how argparse would work.

```
if __name__ == '__main__':
    import argparse

    parser = argparse.ArgumentParser(description='Create a ArcHydro schema')
    parser.add_argument('--workspace', metavar='path', required=True,
                        help='the path to workspace')
    parser.add_argument('--schema', metavar='path', required=True,
                        help='path to schema')
    parser.add_argument('--dem', metavar='path', required=True,
                        help='path to dem')
    args = parser.parse_args()
    main(workspace=args.workspace, schema=args.schema, dem=args.dem)
```

share edit

edited Mar 12 '17 at 15:49

answered Mar 12 '17 at 13:01
Jonathan
5,424 ●6 ●32 ●58

Hi Jonathan, thanks for the following. So my main() function doesn't have to be called main? – Peter Wilson Mar 12 '17 at 13:05

nope, you can call it whatever you like. I updated the answer to include some more detail :) – Jonathan Mar 12 '17 at 13:11

Hi Jonathan, would you be able to give me an example how to pass the arguments using argparse to my main() funciton. The reason for asking is that I call two functions within my main() func that use the argument workspace. – Peter Wilson Mar 12 '17 at 14:11

I've updated the answer to include how to use argparse. – Jonathan Mar 12 '17 at 15:49

Hi Jonathan, I can't thank you enough, you have been a great help. The following is going to nelp me a lot with my code going forward. – Peter Wilson Mar 12 '17 at 18:57

show 2 more comments

Your Answer

Links Images Styling/Headers Lists Blockquotes Code HTML advanced help »

Post Your Answer

Not the answer you're looking for? Browse other questions tagged python module arguments packages or ask your own question.

Featured on Meta
Unicorn Meta Zoo #1: Why another podcast?
Announcing the arrival of Valued Associate #679: Cesar Manara
Data science time! April 2019 and salary with experience
Should we burninate the [code-smell] tag?
Hot Meta Posts
4 Updating a question with new findings whilst keeping it tidy and clear
3 Name change not reflecting in data site

By using our site, you acknowledge that you have read and understand our Cookie Policy, Privacy Policy, and our Terms of Service.

Want a python job?
Data Analytics Course Mentor
Thinkful Inc. No office location
$10K - $30K REMOTE
python sql
Bitcoin Python Developer
Xapo No office location
REMOTE
python mysql

Related
1404 Calling a function of a module by using its name (a string)
1029 How can I pass arguments to a batch file?
1576 How do I parse command line arguments in Bash?
3519 How can I safely create a nested directory in Python?
2321 How to get the current time in Python
2418 How can I make a time delay in Python?
2540 How to make a chain of function decorators?
2295 How do I pass a variable by reference?
1994 How do I concatenate two lists in Python?
2112 How do I pass command line arguments to a Node.js program?

Hot Network Questions
Why do games have consumables?
How does a program know if stdout is connected to a terminal or a pipe?
Do I have an "anti-research" personality?
Was there a shared-world project before "Thieves World"?
Size of electromagnet needed to replicate Earth's magnetic field
"The cow" OR "a cow" OR "cows" in this context
How to pronounce 'C++' in Spanish
Why does flipping a pencil across a table make it move like this?
Is the claim "Employers won't employ people with no 'social media presence'" realistic?
What does the "ep" capability means?
How come there are so many candidates for the 2020 Democratic party presidential nomination?
Mjolnir's timeline from Thor's perspective
Contradiction proof for inequality of P and NP?
What does "vanity" mean in "the creature was made subject to vanity", Romans 8:20?
Can SQL Server create collisions in system generated constraint names?
What is Niska's accent?
How did Captain America manage to do this?
In order to check if a field is required or not, is the result of isNullable method sufficient?
French for 'It must be my imagination'?
Checks user level and limit the data before saving it to mongoDB
What happened to Captain America in Endgame?
What is the most expensive material in the world that could be used to create Pun-Pun's lute?
Phrase for the opposite of "foolproof"
What software provides a code editing environment on iPad?
question feed

site design / logo © 2019 Stack Exchange Inc; user contributions licensed under cc by-sa 3.0 with attribution required.
rev 2019.4.26.33469