# Exception Handling & Pickling

Date: 11.21.19

Description: File & Assignment documents for Module07

Dev: Kstevens

ITFDN100 A

Assignment07

## Assignment07:

(Overview)

Research and document your knowledge about the use and benefits of the

Pickle module and exception handling in Python. The full assignment and further notes following

this week’s discussions can be viewed or downloaded here: [Assignment07.pdf](https://canvas.uw.edu/courses/1342958/files/59791641?module\_item\_id=9973247 "Assignment07.pdf"), (external link),[\_Mod7PythonProgrammingNotes.pdf](https://canvas.uw.edu/courses/1342958/files/59801217?module\_item\_id=9973246 "\_Mod7PythonProgrammingNotes.pdf"), (external link).

## Intro

The primary focus of week seven of Introduction to Python Programing, consisted of demonstrations on how to work with and configure error handling in Python which included the topics of try/except blocks, exception errors, built-in and custom error exceptions and exception classes, and Python’s Pickling Module. The secondary focus of this week was on learning how to use [basic writing and formatting syntax](https://help.github.com/en/github/writing-on-github/basic-writing-and-formatting-syntax "basic writing and formatting syntax"), (external link) using Jekyll. used to build and present personal and professional scripting projects with GitHub Webpages.

This weeks assignment consists of researching and documenting knowledge on the following bullet point topics and programming methods and presenting our research on GitHub Webpages using Jekyll’s writing and formatting syntax discussed in Mod07 YouTube tutorial found at [Module07 Course Video Links](https://www.youtube.com/watch?v=4IkIdXJBC6o&feature=youtu.be "PythonMod7Project"), (external link), starting at 1:30:00.

The following topics will be briefly discussed in this document containing the sources and conclusions of my research pertaining to Assignment07’s research exercise detailed in [Assigment07.pdf](https://canvas.uw.edu/courses/1342958/modules/items/9973247 "Assigment07.pdf"), (external link).

- Exception handling in Python

- Pickling in Python

# Part 1: Exception Handling

(Assignment Overview)

#### Search the web for examples of how to use Python’s exception handing features. Make note of the URL for any pages you feel are good at explaining the subject, and why you feel that way.

## Exception handling in Python

Exception handling protocols are written/implemented by a script’s author(s) with the intention of making troubleshooting easier for users or other developers. This type of script editing helps to replace long, incomprehensible trace back error messages (for those who are not developers) with more specific and/or conducive instruction to follow if an error occurs while running a script/program.

These traceback errors can appear with basic user interaction, reading /writing data files and edits or manipulation to the code that prevent the program from running correctly. If traceback messages are not addressed and met with some form of error anticipation/moderation by the script author(s), it will cut back on intended efficiency and productivity for other developers as well as deter others from using, utilizing or running the program all together. To help guide or provide a user or fellow developer with a good experience using your program/script, many programmers will start by refining their code using “if/elif” Error Handling processes.

Error handling is also useful for developers because it provides useful insight to anticipate sections of our code that might throw an error or an exception for other future users down the road.

With this information developers can try to configure error blocks and handle them in the way that we want instead of allowing Python (and/or other programming languages) to auto generate and present a string of obscure and/or vague error messages to the end user.

## Exception Features Research

I located many sources of reference based off notes and key phrases mentioned in [\_Mod7PythonProgrammingNotes.pdf](https://canvas.uw.edu/courses/1342958/files/59801217?module\_item\_id=9973246 "\_Mod7PythonProgrammingNotes.pdf"), (external link)

, listing 11-15, ( full list of the compiled resourced can be found here [Other Error Handling Sources](https://docs.google.com/spreadsheets/d/e/2PACX-1vRnad3aZB7\_j9aKOajRgzOf3bGkSlcJ\_NSVobVJnApOc\_f7yzTMFPAHcjIhD6IxhiaIhZpEK6UEiXn1WBTG3sg/pub?output=xlsx "Other Error Handling Sources"), (external link). The source I found most useful (other than the [Module07 Course Video Links](https://www.youtube.com/watch?v=4IkIdXJBC6o&feature=youtu.be "PythonMod7Project"), (external link) came from YouTube Tutorial, [Python Tutorial: Using Try/Except Blocks for Error Handling](https://www.youtube.com/watch?v=NIWwJbo-9\_8 "Python Tutorial: Using Try/Except Blocks for Error Handling"), (external link) and the [GitHub](https://github.com/CoreyMSchafer/code\_snippets/tree/master/Exceptions "GitHub"), (external link) posted in the authors information. I appreciated how closely related the examples were to the material discussed in the Mod07 tutorial, as many of the outside resources I come across tend to be either more advanced/specialized modifications or workarounds with limited description.

# Part 2: Pickle Module

(Assignment Overview)

Search the web for examples of how to use Python’s Pickling features. Make note of the URL for any pages you feel are good at explaining the subject, and why you feel that way.

## What is Pickle?

The Official Python Pickle Module Description as follows:

“The pickle module implements binary protocols for serializing and de-serializing a Python object structure. “Pickling” is the process whereby a Python object hierarchy is converted into a byte stream, and “unpickling” is the inverse operation, whereby a byte stream (from a binary file or bytes-like object) is converted back into an object hierarchy. Pickling (and unpickling) is alternatively known as “serialization, marshalling, or flattening”; however, to avoid confusion, the terms used here are “pickling” and “unpickling”. [1]

## Functions of Pickle in Python

[Python Pickle Module for saving objects (serialization)](https://www.youtube.com/watch?v=2Tw39kZIbhs) (external link)

This Python programming tutorial above covers how to pickle objects in Python.

##Pickle Simplified - Python object serialization[2]

“ The pickle module is used for implementing binary protocols for serializing and de-serializing a Python object structure.

- Pickling: It is a process where a Python object hierarchy is converted into a byte stream.

- Unpickling: It is the inverse of Pickling process where a byte stream is converted into an object hierarchy.

#### Module Interface :

- dumps() – This function is called to serialize an object hierarchy.

- loads() – This function is called to de-serialize a data stream.

For more control over serialization and de-serialization, Pickler or an Unpickler objects are created respectively. “

## Built-in Pickle Exceptions

(Examples)

```

Insert Emaple

C:\Users\ECOIDEALIST\Desktop\pickling\PICKLE\IN DOC EXAMPLES\8.3.4-2 - input\_Python program to illustrate .txt

````

Warning

The pickle module **is not secure**. Only unpickle data you trust.

It is possible to construct malicious pickle data which will **execute arbitrary code during unpickling**. Never unpickle data that could have come from an untrusted source, or that could have been tampered with.

Consider signing data with [:mod:`hmac`](https://github.com/python/cpython/blob/master/Doc/library/pickle.rst#id12) if you need to ensure that it has not been tampered with.

Safer serialization formats such as [:mod:`json`](https://github.com/python/cpython/blob/master/Doc/library/pickle.rst#id14) may be more appropriate if you are processing untrusted data. See [:ref:`comparison-with-json`](https://github.com/python/cpython/blob/master/Doc/library/pickle.rst#id16).

## Sources

##### Py Pickle Resource List (Compiled)

https://docs.google.com/spreadsheets/d/e/2PACX-1vTFel2-8hzvknNPtJF\_e\_WGJuCEDRUhxEj-0LKL5En0fUX8QQTvouHaENlUEVZDDAnRQ427D\_W6cxDJUEIVZFU/pubhtml

##### Py Exception Handling Resource List (compiled)

<https://docs.google.com/spreadsheets/d/e/2PACX-1vRnad3aZB7_j9aKOajRgzOf3bGkSlcJ_NSVobVJnApOc_f7yzTMFPAHcjIhD6IxhiaIhZpEK6UEiXn1WBTG3sg/pub?output=xlsx>

### #### [1] 11.1. pickle — Python object serialization — Python 2.7.17 documentation

#### "11.1. Pickle — Python Object Serialization — Python 2.7.17 Documentation". Docs.Python.Org, 2019, https://docs.python.org/2/library/pickle.html. Accessed 22 Nov 2019.

##### [2] pickle — Python object serialization - GeeksforGeeks

pickle — Python object serialization - GeeksforGeeks. (2017). Retrieved 22 November 2019, from <https://www.geeksforgeeks.org/pickle-python-object-serialization/>

## Tutorials

#### Pickle:

# YouTube | Python3 Advanced Tutorial 11 - Serialization with Pickle

#### "Youtube". Youtube.Com, 2019, https://www.youtube.com/watch?v=BbRY9gsKA7Q. Accessed 22 Nov 2019.

#### Execption Handlers