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Foundations of Programming: Python

Assignment 07

**Functions**

# Introduction

In week 7

# Text Files

There are two types of files, text files and binary files. In this example will be looking at text files and performing with open(), write(), and close() actions with one function call.

open() function does what it says which opens a file and returns it as a file object.

open(file,mode)

file = the path and name of the file

mode = string which it defines:

“r” – Read, default value, opens a file for reading, error if the file does not exist

“a” – Append, opens a file for appending, creates the file if it does not exist.

“w’ – Write, opens a file for writing, creates the file is it does not exist.

“x” – Create, creates the specified file, returns an error if the file exist.

write() method writes a specified text to the file.

“a” – text will be inserted at current file stream position.

“w” – the file will be emptied before the text will be inserted.

file.write(byte)

byte – text or byte object that will be inserted.

close() method closes an open file. You should always close your files, due to buffering or changes.

file.close()

# readlines() function

readlines() method returns a list containing each line I the file as list item.

file.readlines(hint)

hint is optional but also allows you to return the max exceeding limits. If none is called, it is usually defaulted as -1, which means all is returned.

# Using a for loop

Another option to read multiple rows of data is to use a “for” loop. An advantage of using a “for” loop is that it automatically closes the file when it reaches the end of the file’s data.

for loop is used for iterating over a sequence. The for loop can execute a set of statements, once for each item in a list, tuple, set, etc.

fruits = ["apple", "banana", "cherry"]  
for x in fruits:  
  print(x)

prints >>>>>>>>>

apple

banana

cherry

# Binary Files

Data can be saved in binary format instead of just plain text. Within python, this technique is called pickling.

bin(a)

“a” – integer to convert.

# declare a variable

num = 100

# print binary number

print(bin(num))

prints>>>>>>>

0b1100100

# Pickling

Python pickle is used for serializing and de-serializing object structures. This is the process of converting any kind of python object into byte streams (0s and 1s) is called pickling.

Using Pickle, you need to import pip into your application, whether you are using PyCharm/ Python or other applications. Pip will be a library which has Pickle.

Pros:

1. Handy to save complicated data.
2. Easy to use and does not require several lines of codes.
3. Provides higher security due to difficult readable status.

Cons:

1. Languages other than python may not be able to reconstruct.
2. Risk of unpickling data.

# Assignment 7

Assignment 7 was given the layout from the Lab7-1 starter script. The script will be focused on enter an employee name and a priority. This then focuses on which employee is considered a higher priority for the team.

See script for code.

# Summary

When working with all the read() functions it really focused on what needed to be stored and what could be read with the read() command. Pickling was a new function that I had never used in my work nor schoolwork so it was nice to use a command that utilized less codes of lines. Getting started I had some trouble trying to figure out what code to write for the assignment, but as I got going, I just followed the script practice of the Lab7-1 notes and just kept it simple.