ASSIGNMENT REPORT 1: PROCESS AND THREAD IMPLEMENTATION

CENG2034, OPERATING SYSTEMS

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https://github.com/ahmetceng/ceng_2034_2020_midterm

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1 Introduction

In this assignment I practice some basics about operating systems.I coded a python program to print required parameters and check url's.My goal is to learn and practice as much as I could,while coding required script.

2 Assignments

My objective was to write a script that; checks url's and prints PID,loadavg,cpu core count.Also program should close itself if loadavg value is near to the cpu core count.I stared by researching what I didn't know,then step by step I implemented what I needed to.

2.1 Assignment

I coded required values as shown in the photos below.

3 Results

As shown in the photo,program checks url's and prints if it's working or not.Then program prints PID,load averages and nproc.After that we see there is a note that says "Program will end itself if: nproc - min loadavg 1" and it keeps working.5 minute loadavg is constantly changing and program will keep working unless those 2 values are close to each other.There is a comment in the second while loop saying #print(load5).I put this command to check if my code is working and how the load5 changes over time.If you decide to delete the # in that line you can see the 5 mi load avg value changing over and over (outputs per second becomes crazy tho :D).

4 Conclusion

Most important lesson I learned from this project is reading all of the assignment carefully.At first I didn't notice the "*Implement this with threads" at the end of part 4 :D ,so I had to change my

OS_midterm.py - C:\Users\ahmet oral\Desktop\OS_midterm.py (3.7.1)

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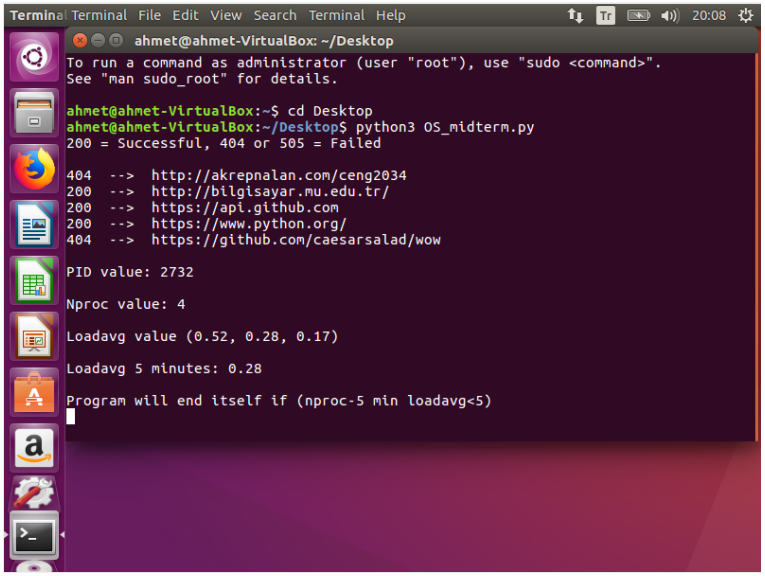
```
import requests
import os
import os,sys
import multiprocessing
import threading

#urls we need to check
"""url_array= ["https://api.github.com","http://bilgisayar.mu.edu.tr/",
            "https://www.python.org/","http://akrepnalan.com/ceng2034",
            "https://github.com/caesarsalad/wow"]"""

#checking the url's
print("200 = Successful, 404 or 505 = Failed\n")
def requester(url):
        response = requests.get(url)
        print(response.status_code," --> ",url)

thread1 = threading.Thread(target = requester,args=("https://api.github.com",))
thread2 = threading.Thread(target = requester,args=("http://bilgisayar.mu.edu.tr/",))
thread3 = threading.Thread(target = requester,args=("https://www.python.org/",))
thread4 = threading.Thread(target = requester,args=("http://akrepnalan.com/ceng2034",))
thread5 = threading.Thread(target = requester,args=("https://github.com/caesarsalad/wow",))

thread1.start()
thread2.start()
thread3.start()
thread4.start()
thread5.start()



"""I put rest of the code in while loop because,if code works while threads are working too, output
screen becomes a mess.If want you can always delete while loop and code will keep working anyway."""
while(True):
        if(thread5.is_alive()):
                continue

        #printing PID
        print("\nPID value:",os.getpid())

        #printing nproc
        nproc=multiprocessing.cpu_count()
        print("\nNproc value:",nproc)

        #printing loadavg
        loadavg=os.getloadavg()
        print("\nLoadavg value",loadavg)

        #printing loadavg 5 minutes
        load1,load5,load15 = os.getloadavg()
        print("\nLoadavg 5 minutes:",load5)

        #condition of when to end program
        print("\nProgram will end itself if (nproc-5 min loadavg<5)")
        while(True):
                #print(load5) #if you want to see load5 value changing you can use this code.
                load1,load5,load15 = os.getloadavg()
                if((nproc-load5)<1):
                        print("5minLoadAvg is too close to nproc...\nProgram Terminated!")
                        break
        break
```

code.If I didn't realised that I would get less point or if project was complicated and hard maybe I wouldn't have enough time to chance it.Besides that the project was fun to do and because I used linux, I got chance practiced some of the things I forget.Also now I know I can check url's and take some basic system information.All in all this assignment contributed new skills to me and I enjoyed doing it.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20:08
ahmet@ahmet-VirtualBox: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ahmet@ahmet-VirtualBox:~$ cd Desktop
ahmet@ahmet-VirtualBox:~/Desktop$ python3 OS_midterm.py
200 = Successful, 404 or 505 = Failed
404 --> http://akrepnalan.com/ceng2034
200 --> http://bilgisayar.mu.edu.tr/
200 --> https://api.github.com
200 --> https://www.python.org/
404 --> https://github.com/caesarsalad/wow
PID value: 2732
Nproc value: 4
Loadavg value (0.52, 0.28, 0.17)
Loadavg 5 minutes: 0.28
Program will end itself if (nproc-5 min loadavg<5)