#!/usr/bin/env python3

import re

import csv

import operator

error\_messages = {}

per\_user = {}

logfile =r"/home/student-03-60dcd5046e0e/syslog.log"

pattern = r"(INFO|ERROR) ([\w' ]+|[\w\[\]#' ]+) (\(\w+\)|\(\w+\.\w+\))$"

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

 for line in f:

  result = re.search(pattern, line)

  if result is None:

   continue

  if result.groups()[0] == "INFO":

   category = result.groups()[0]

   message = result.groups()[1]

   name = str(result.groups()[2])[1:-1]

   if name in per\_user:

    user = per\_user[name]

    user[category] += 1

   else:

    per\_user[name] = {'INFO':1, 'ERROR':0}

  if result.groups()[0] == "ERROR":

   category = result.groups()[0]

   message = result.groups()[1]

   name = str(result.groups()[2])[1:-1]

   error\_messages[message] = error\_messages.get(message, 0) + 1

   if name in per\_user:

    user = per\_user[name]

    user[category] += 1

   else:

    per\_user[name] = {'INFO':0, 'ERROR':1}

sorted\_messages = [("Error", "Count")] + sorted(error\_messages.items(), key = operator.itemgetter(1), reverse=True)

#sorted\_messages = [("Error", "Count")] + sorted(error\_messages.items(), key = lambda x: x[1], reverse=True)

sorted\_users = [("student-03-60dcd5046e0e", "INFO", "ERROR")] + sorted(per\_user.items())[0:8]

#sorted\_users = [("student-03-60dcd5046e0e", "INFO", "ERROR")] + sorted(per\_user.items())

with open("error\_message.csv", "w") as error\_file:

 for line in sorted\_messages:

  error\_file.write("{}, {}\n".format(line[0], line[1]))

with open("user\_statistics.csv", "w") as user\_file:

 for line in sorted\_users:

  if isinstance(line[1], dict):

   user\_file.write("{}, {}, {}\n".format(line[0], line[1].get("INFO"), line[1].get("ERROR")))

  else:

   user\_file.write("{}, {}, {}\n".format(line[0], line[1], line[2]))