

```
1 import os, sys, platform
2 import psutil, time, smtplib, signal
3 from email.mime.text import MIMEText
4
5
6
7 """
8 Ejercicio 3. Desarrollar un script que nos muestre por consola el consumo de CPU
9 y calcule internamente si dicho consumo supera el 70% 4 veces consecutivas,
10 en un periodo de tiempo preestablecido por el administrador.
11 En caso de producirse dicho evento, el script deberá enviar un mail al correo
12 del administrador
13 """
14
15 """
16 Usage: Makes the login and returns the serverSMTP
17 Name of method: create_session
18 Date of creation: 25/02/2021
19 Members: Roberto Jiménez y Alberto Pérez
20 Last modification: 25/02/2021
21 Parameters:
22     Entry:
23         - emisor: Address of the account
24         - passwd: The password of the mail
25     Out:
26         - serverSMTP, for sending the mail
27 """
28
29 def create_session(emisor, passwd):
30     #Connection with SMTP server
31     serverSMTP = smtplib.SMTP('smtp.gmail.com',587)
32     serverSMTP.starttls()
33
34     #Log-in
35     serverSMTP.login(emisor, passwd)
36     return serverSMTP
37
38
39 """
40 Generation of the mail that will be sended
41 Name of method: generateMail
42 Date of creation: 25/02/2021
43 Members: Roberto Jiménez y Alberto Pérez
44 Last modification: 25/02/2021
45 Parameters:
46     Entry:
47         - mailFrom: Address of the account that the mail will be sended from
48         - to: Address of the administrator mail
49         - subject: Subject of the mail
50         - content: Contet of the mail
51     Out:
52         - message, mail generated propertly
53 """
54 def generateMail(mailFrom,to,subject, content):
55     #Generation of the mail with MIMEText
56     message = MIMEText(content, "plain")
57     message["From"] = mailFrom
58     message["To"] = to
59     message["Subject"] = subject
60     return message
```

```
61
62
63 """
64 Definition of the main method of the program
65 Name of method: main
66 Date of creation: 25/02/2021
67 Members: Roberto Jiménez y Alberto Pérez
68 Last modification: 25/02/2021
69 Parameters: None, parameters are not needed
70 """
71 def main():
72     if platform.system() != 'Linux':
73         #Check if is a UNIX machine
74         print("Error, the OS is not a UNIX machine. Getting out...")
75         exit(1)
76     if len(sys.argv) == 1:
77
78         #Declaration of the correct parameters for the mail
79         mailFrom = "roberatecaads2@gmail.com"
80         passwd='administracion2'
81         mailTo = "roobertrl@gmail.com"
82
83         content = "Last 60 seconds, CPU has reached 4 times more than 70%"
84         subject = "High CPU!"
85
86         #Start an alarm every 60 seconds
87         signal.alarm(60)
88         reachedTimes = 0
89
90         #Checking when the cpu raises the 70 percent 4 times in a row
91         while(True):
92             CPUpercent = psutil.cpu_percent(interval=3)
93             if CPUpercent >= 70:
94                 reachedTimes += 1
95             else:
96                 reachedTimes = 0
97             if reachedTimes == 4:
98                 try:
99                     smtp = create_session(mailFrom,passwd)
100                     email = generateMail(mailFrom, mailTo, subject,content )
101                     smtp.sendmail(mailFrom, mailTo, email.as_string())
102                     smtp.quit()
103                 except Exception as e:
104                     print("Excepcion: ", e)
105                     break
106
107     else:
108         #Case when parameters are passed to the script
109         print("Error, the parameters are not necessary")
110
111
112 if __name__ == "__main__":
113     """
114     In that case, we check that the program starts in the right function, in our
115     case, main()
116     """
117     main()
118
```