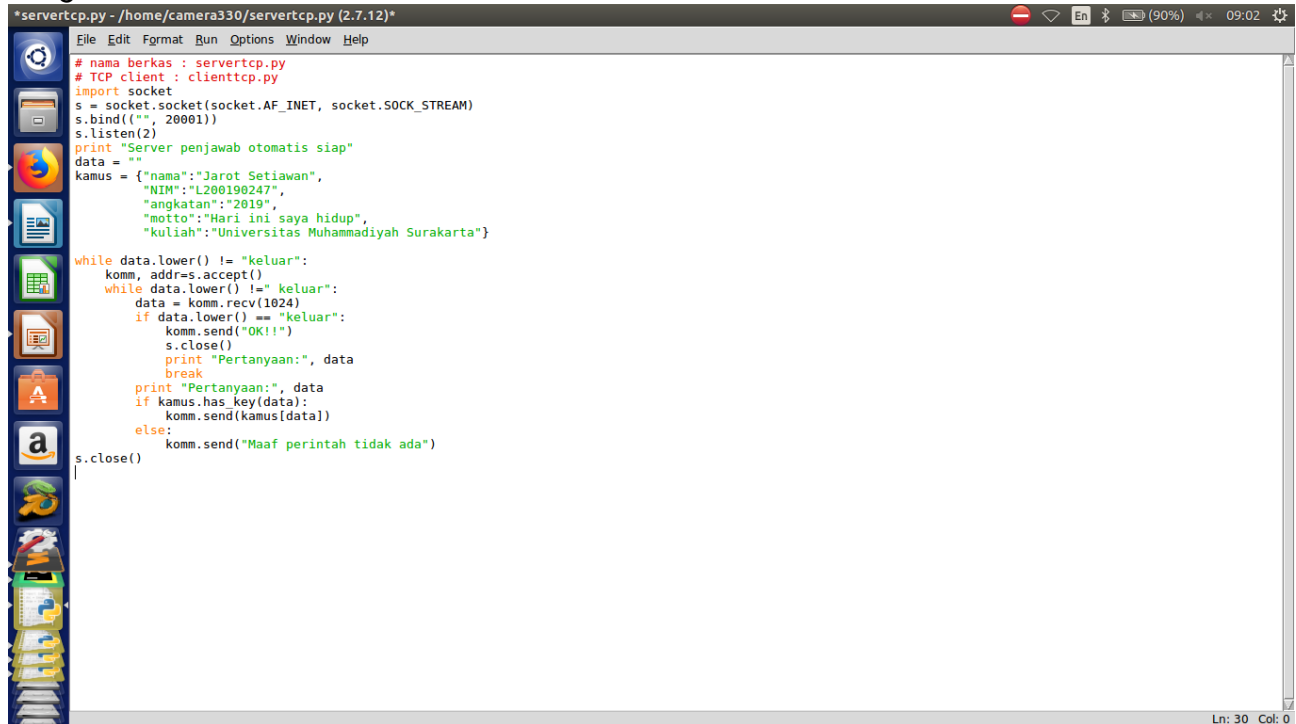


Nama : Jarot Setiawan
NIM : L200190247
kelas : F

Kegiatan 1.

Program sisi server.



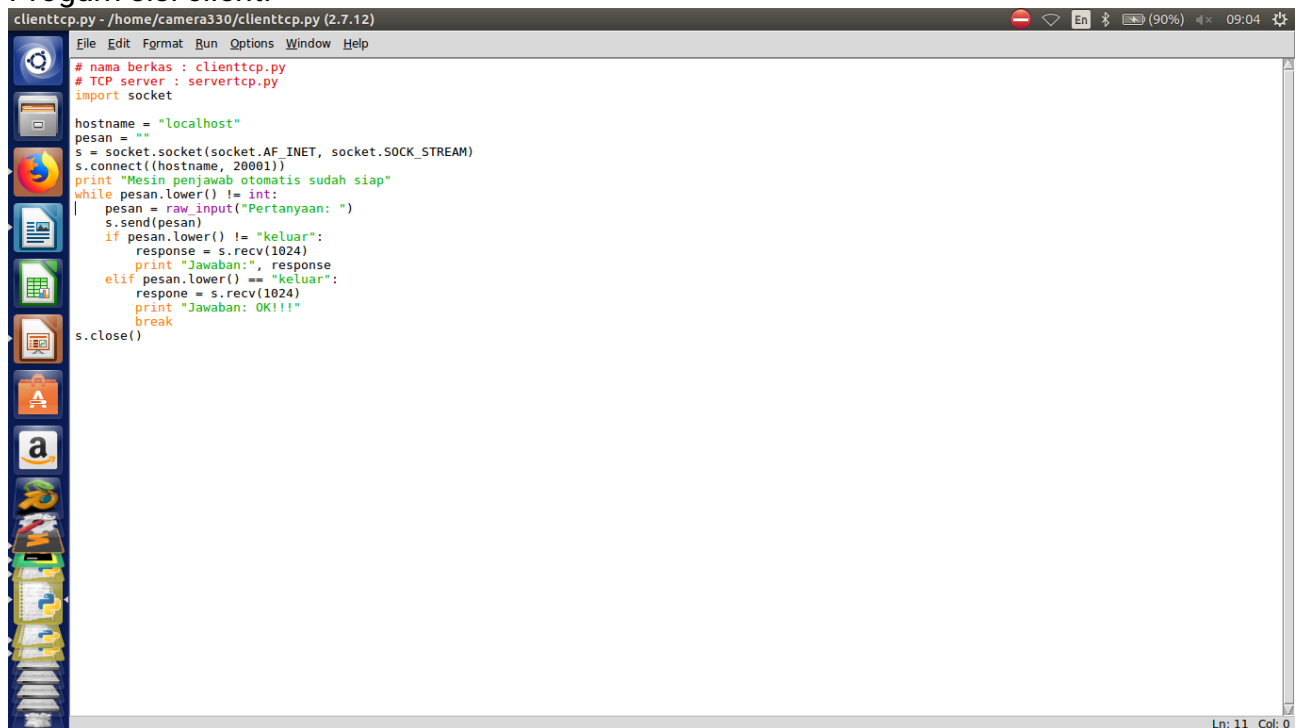
```
*servertcp.py - /home/camera330/servertcp.py (2.7.12)*
File Edit Format Run Options Window Help

# nama berkas : servertcp.py
# TCP client : clienttcp.py
import socket
s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.bind(('', 20001))
s.listen(2)
print "Server penjawab otomatis siap"
data = ""
kamus = {"nama": "Jarot Setiawan",
        "NIM": "L200190247",
        "angkatan": "2019",
        "motto": "Hari ini saya hidup",
        "kuliah": "Universitas Muhammadiyah Surakarta"}

while data.lower() != "keluar":
    komm, addr = s.accept()
    while data.lower() != "keluar":
        data = komm.recv(1024)
        if data.lower() == "keluar":
            komm.send("OK!!!")
            s.close()
            print "Pertanyaan:", data
            break
        print "Pertanyaan:", data
        if kamus.has_key(data):
            komm.send(kamus[data])
        else:
            komm.send("Maaf perintah tidak ada")
    s.close()
|
```

Ln: 30 Col: 0

Program sisi client.



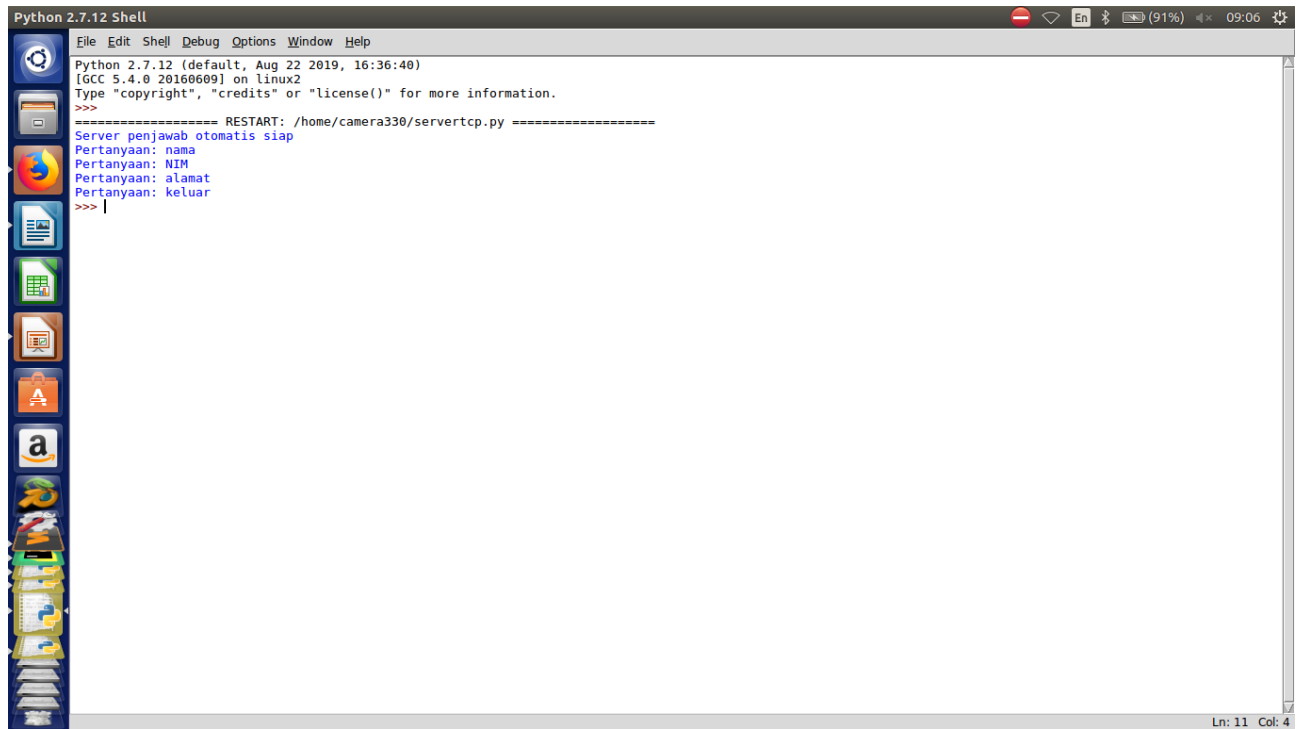
```
clienttcp.py - /home/camera330/clienttcp.py (2.7.12)
File Edit Format Run Options Window Help

# nama berkas : clienttcp.py
# TCP server : servertcp.py
import socket

hostname = "localhost"
pesan = ""
s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.connect((hostname, 20001))
print "Mesin penjawab otomatis sudah siap"
while pesan.lower() != int:
    pesan = raw_input("Pertanyaan: ")
    s.send(pesan)
    if pesan.lower() != "keluar":
        response = s.recv(1024)
        print "Jawaban:", response
    elif pesan.lower() == "keluar":
        response = s.recv(1024)
        print "Jawaban: OK!!!"
        break
s.close()
|
```

Ln: 11 Col: 0

Screen shot terminal server.

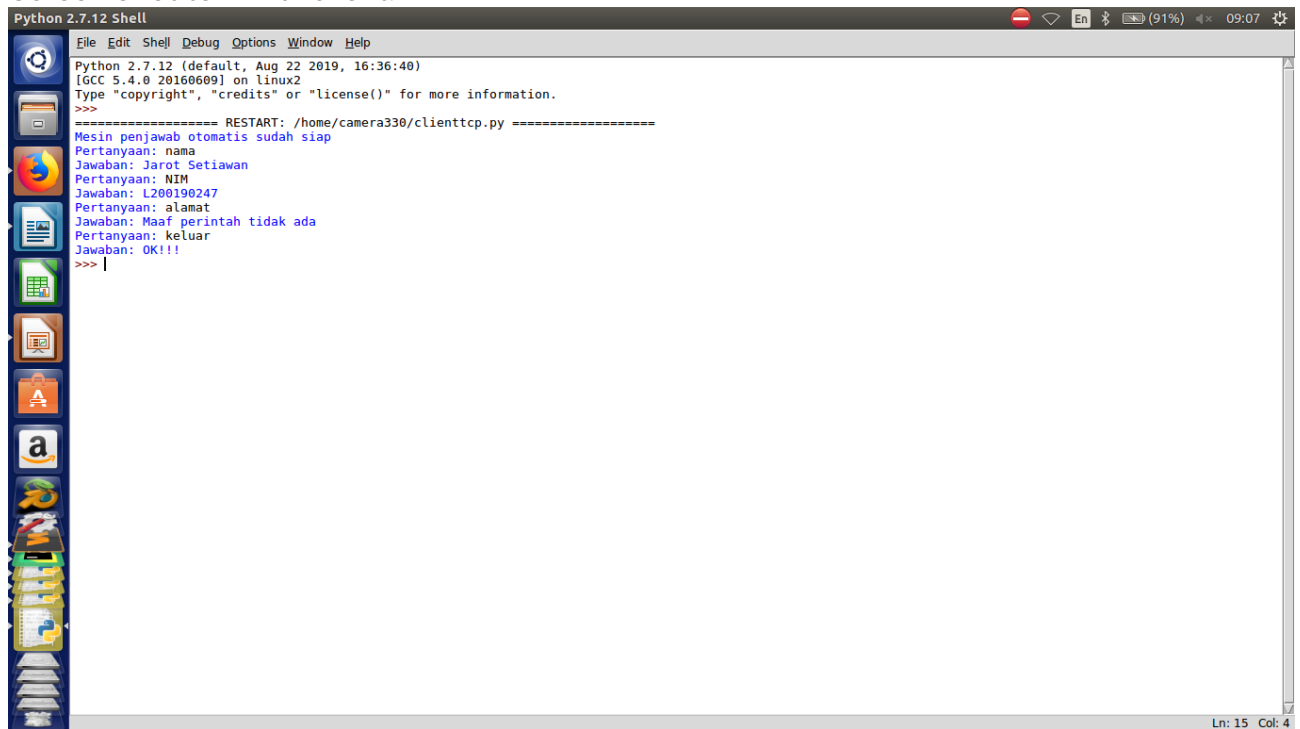


The screenshot shows a terminal window titled "Python 2.7.12 Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The terminal output shows the Python version and GCC version, followed by a restart message for the script `/home/camera330/servertcp.py`. The script then prompts for a name, NIM, address, and exit command. The user has entered a name, NIM, and address, and the script is waiting for the exit command.

```
Python 2.7.12 Shell
File Edit Shell Debug Options Window Help
Python 2.7.12 (default, Aug 22 2019, 16:36:40)
[GCC 5.4.0 20160609] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/camera330/servertcp.py =====
Server penjawab otomatis siap
Pertanyaan: nama
Pertanyaan: NIM
Pertanyaan: alamat
Pertanyaan: keluar
>>> |
```

Ln: 11 Col: 4

Screen shot terminal client.



The screenshot shows a terminal window titled "Python 2.7.12 Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The terminal output shows the Python version and GCC version, followed by a restart message for the script `/home/camera330/clienttcp.py`. The script then prompts for a name, NIM, address, and exit command. The user has entered a name, NIM, and address, and the script is waiting for the exit command.

```
Python 2.7.12 Shell
File Edit Shell Debug Options Window Help
Python 2.7.12 (default, Aug 22 2019, 16:36:40)
[GCC 5.4.0 20160609] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/camera330/clienttcp.py =====
Mesin penjawab otomatis sudah siap
Pertanyaan: nama
Jawaban: Jarot Setiawan
Pertanyaan: NIM
Jawaban: L200190247
Pertanyaan: alamat
Jawaban: Maaf perintah tidak ada
Pertanyaan: keluar
Jawaban: OK!!!
>>> |
```

Ln: 15 Col: 4

Kegiatan 2.

Program pada sisi server.

```
*servertcp1.py - /home/camera330/servertcp1.py (2.7.12)*
File Edit Format Run Options Window Help

# nama berkas : servertcp1.py
# TCP client : clienttcp1.py
import socket
import platform
s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.bind(('', 20001))
s.listen(2)
print "Program server"
data = ""
kamus = {"machine":platform.machine(),
         "release":platform.release(),
         "system":platform.system(),
         "version":platform.version(),
         "node":platform.node(),
         "quit":"OK"}

while data.lower() != "quit":
    komm, addr=s.accept()
    while data.lower() != "quit":
        data = komm.recv(1024)
        if data.lower() == 'quit':
            komm.send(kamus[data])
            print "Pertanyaan:", data
            s.close()
            break
        print "Pertanyaan:", data
        if kamus.has_key(data):
            komm.send(kamus[data])
        else:
            komm.send("Maaf perintah tidak ada")
    s.close()

Ln: 6 Col: 19
```

Program pada sisi client.

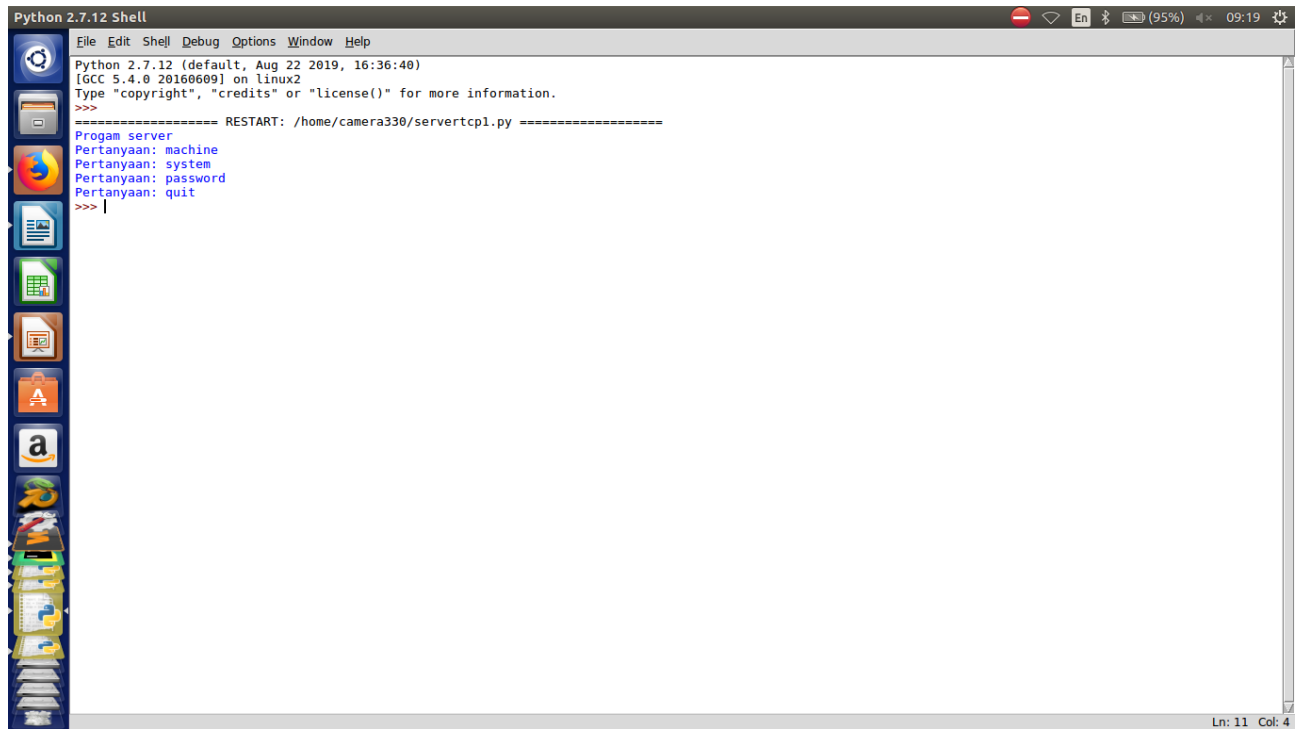
```
*clienttcp1.py - /home/camera330/clienttcp1.py (2.7.12)*
File Edit Format Run Options Window Help

# nama berkas : clienttcp1.py
# TCP server : servertcp1.py
import socket

hostname = "localhost"
pesan = ""
s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.connect((hostname, 20001))
print "Program komunikasi tentang server"
while pesan.lower() != "quit":
    pesan = raw_input("Pertanyaan: ")
    s.send(pesan)
    if pesan.lower() != "int":
        response = s.recv(1024)
        print "Jawaban:", response
    elif pesan.lower() != "quit":
        response = s.recv(1024)
        print "Jawaban:", response
        break
s.close()

Ln: 5 Col: 22
```

Screen shot terimal server.

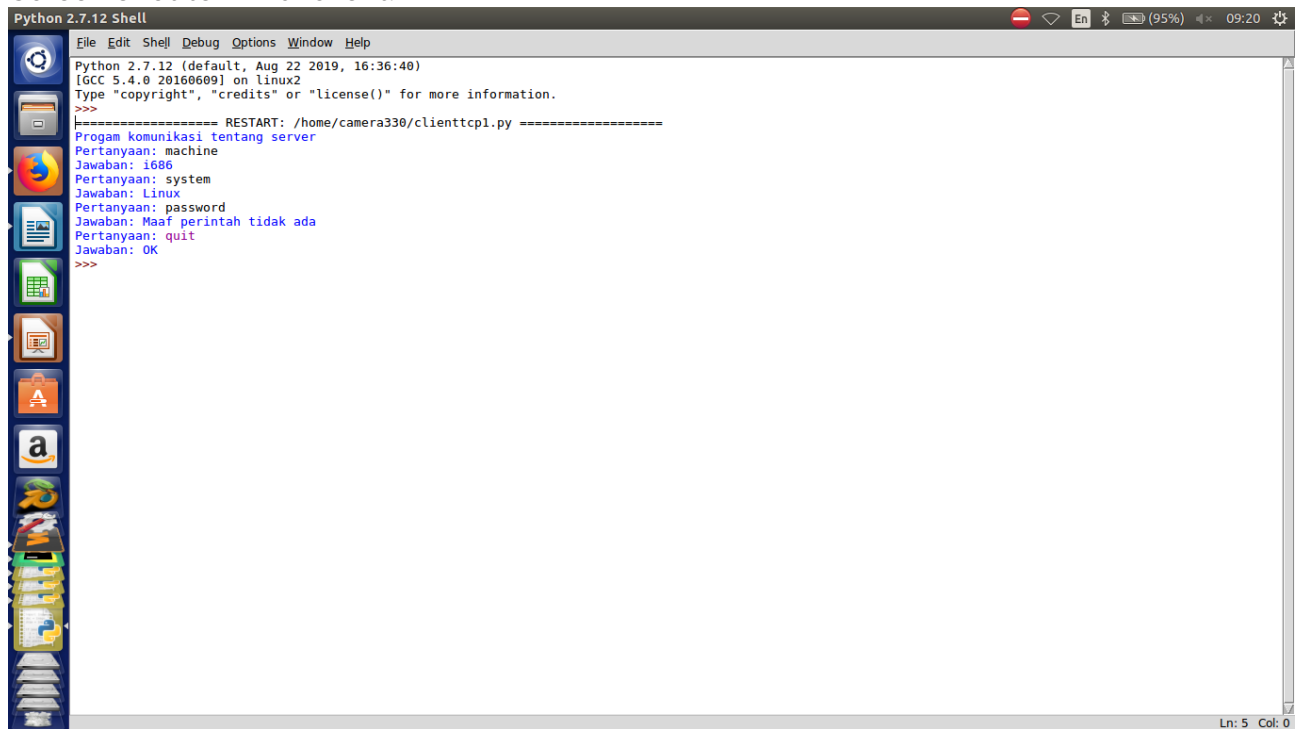


The screenshot shows a terminal window titled "Python 2.7.12 Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The terminal output is as follows:

```
Python 2.7.12 (default, Aug 22 2019, 16:36:40)
[GCC 5.4.0 20160609] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/camera330/servertcp1.py =====
Progam server
Pertanyaan: machine
Pertanyaan: system
Pertanyaan: password
Pertanyaan: quit
>>> |
```

The status bar at the bottom right indicates "Ln: 11 Col: 4".

Screen shot terminal client.



The screenshot shows a terminal window titled "Python 2.7.12 Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The terminal output is as follows:

```
Python 2.7.12 (default, Aug 22 2019, 16:36:40)
[GCC 5.4.0 20160609] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/camera330/clienttcp1.py =====
Progam komunikasi tentang server
Pertanyaan: machine
Jawaban: 1686
Pertanyaan: system
Jawaban: Linux
Pertanyaan: password
Jawaban: Maaf perintah tidak ada
Pertanyaan: quit
Jawaban: OK
>>>
```

The status bar at the bottom right indicates "Ln: 5 Col: 0".

Kegiatan 3.

Program pada sisi server.

```
servertcp2.py - /home/camera330/servertcp2.py (2.7.12)
File Edit Format Run Options Window Help
# nama berkas : servertcp2.py
# TCP client : clienttcp2.py
import socket

s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.bind(("*", 20001))
s.listen(20)
print "Server penghitung luas tabung otomatis siap"
data = ""
kamus = {"jari-jari":0,
         "tinggi":0,
         "keluar":"OK!"}
def hitungluastabung(jari, tinggi):
    import math
    return str(2*math.pi*jari*(jari+tinggi))

while data.lower() != "keluar":
    komm, addr=s.accept()
    while data.lower() != "keluar":
        data = komm.recv(1024)
        angka = data.split()
        if data.lower() == 'keluar':
            komm.send(kamus[data])
            s.close()
            break
        elif data.lower() == "hitung":
            print "Pesan:", data
            komm.send('luas tabung berjari-jari %s adalah %s'%(kamus["jari-jari"], hitungluastabung(kamus["jari-jari"],kamus["tinggi"])))
            continue
        print "Pesan:", data
        for i in kamus:
            if i in data:
                kamus[i] = int(angka[-1])
                komm.send("Parameter dicatat")
                break
        else:
            komm.send("Maaf perintah tidak ada")
    s.close()
```

Ln: 24 Col: 23

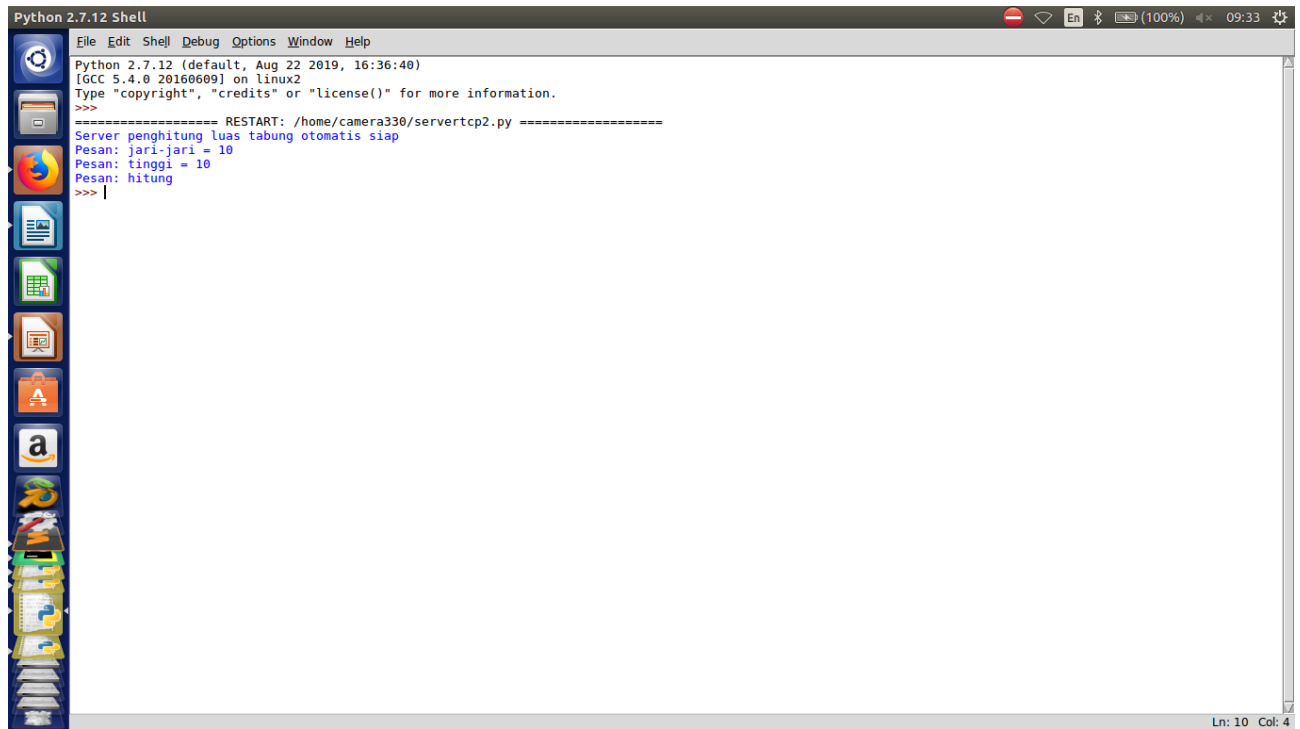
Program pada sisi client.

```
clienttcp2.py - /home/camera330/clienttcp2.py (2.7.12)
File Edit Format Run Options Window Help
# nama berkas : clienttcp2.py
# TCP server : servertcp2.py
import socket

hostname = "localhost"
pesan = ""
s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.connect((hostname, 20001))
print "Mesin penghitung luas tabung otomatis sudah siap"
while pesan.lower() != "keluar":
    pesan = str(raw_input("Pesan: "))
    s.send(pesan)
    if pesan.lower() != int:
        response = s.recv(1024)
        print "Jawaban:", response
    elif pesan.lower() != "keluar":
        response = s.recv(1024)
        print "Jawaban:", response
    break
s.close()
```

Ln: 8 Col: 28

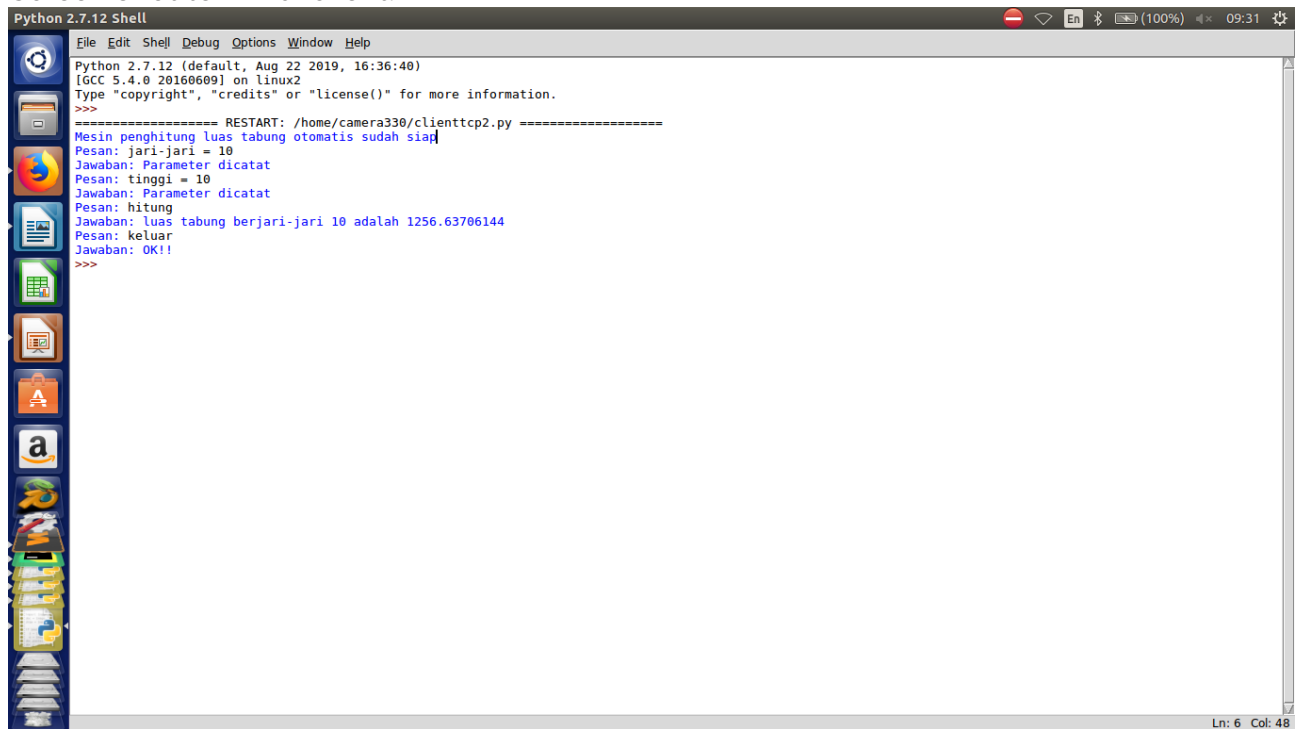
Screen shot terimal server.



```
Python 2.7.12 Shell
File Edit Shell Debug Options Window Help
Python 2.7.12 (default, Aug 22 2019, 16:36:40)
[GCC 5.4.0 20160609] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/camera330/servertcp2.py =====
Server penghitung luas tabung otomatis siap
Pesan: jari-jari = 10
Pesan: tinggi = 10
Pesan: hitung
>>> |
```

Ln: 10 Col: 4

Screen shot terminal client.



```
Python 2.7.12 Shell
File Edit Shell Debug Options Window Help
Python 2.7.12 (default, Aug 22 2019, 16:36:40)
[GCC 5.4.0 20160609] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/camera330/clienttcp2.py =====
Mesin penghitung luas tabung otomatis sudah siap
Pesan: jari-jari = 10
Jawaban: Parameter dicatat
Pesan: tinggi = 10
Jawaban: Parameter dicatat
Pesan: hitung
Jawaban: luas tabung berjari-jari 10 adalah 1256.63706144
Pesan: keluar
Jawaban: OK!!
>>>
```

Ln: 6 Col: 48