


Soal Praktikum <i>Practicum Case</i>	 BINUS MALANG Institute of Creative Technology
COMP6380 Network Programming	
Teknik Informatika <i>Computer Science</i>	CS- COMP6380-Var01
Periode Berlaku Mulai Semester Genap 2018/2019 Valid on Even Semester Year 2018/2019	Revisi 01 Revision 01

Learning Outcomes

- Explain the concept of network programming techniques
- Demonstrate some programs with common protocols used in computer network

Topic

- Session 04 – Client Server programming

Sub Topics

- Echo client server

Tutorial

1. Echo client server

Sockets and the socket API are used to send messages across a network. They provide a form of inter-process communication (IPC). The network can be a logical, local network to the computer, or one that's physically connected to an external network, with its own connections to other networks.

Echo Server

Code :

```

1. #!/usr/bin/env python3
2.
3. import socket
4.
5. HOST = '127.0.0.1' # Standard loopback interface address (localhost)
6. PORT = 65432      # Port to listen on (non-privileged ports are > 1023)
7.
8. with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
9.     s.bind((HOST, PORT))
10.    s.listen()
11.    conn, addr = s.accept()
12.    with conn:
13.        print('Connected by', addr)
14.        while True:
15.            data = conn.recv(1024)
16.            if not data:
17.                break
18.            conn.sendall(data)

```

Echo Client

Code :

```

1. #!/usr/bin/env python3
2.
3. import socket
4.
5. HOST = '127.0.0.1' # The server's hostname or IP address
6. PORT = 65432      # The port used by the server
7.
8. with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
9.     s.connect((HOST, PORT))
10.    s.sendall(b'Hello, world')
11.    data = s.recv(1024)
12.
13. print('Received', repr(data))

```

2. Study case

Make a client server program using concept echo client server, with specification as below:

- Make a text game based on country name, with this game user must guess country name that already scrambled.
- Country list save in **data.txt**, please load all data through server.
- For connection use IP 127.0.0.1 (loopback), define port (each student must have their unique port number)
- After client connected to server, ask user name (verify user name, user cannot consist only number, or special character), send user name to server
- Server push question to client until user enter “**exit**” keyword, each question marked with round number completed with user poin
- There is special menu called hint to helping user guess country name, with “**help**” keyword.
- There is 2 scheme poin:
 - If user guess country corectly, user gain **10 poin**.
 - But if user get help with hint, user gain only **5 poin**.
- After “**exit**” inserted connection between server and client is terminated, tell user summary about last game.

Client side

```

kosong@AMD486:~/Documents/python/4$ python3.5 4.client.py
Connection initiated...
Connected to Game server through 127.0.0.1 with port 64777

Welcome to WORD PUZZLE game
Please insert your name : Alfonso

Hello Alfonso
Guess country name all around the world
Country name is scrambled, your task is rearrange country name
Each
Enter keyword "help" to revoke hint with capital city
Enter keyword "exit" for quit game

Round 1 (Your poin is 0 with 0 correct answer 0 wrong answer)
Guess this country = aEnlots
Your answer is: Estonia

Correct... 10 Poin for Alfonso

Round 2 (Your poin is 10 with 1 correct answer 0 wrong answer)
Guess this country = alnor iaauEiqtGeu
Your answer is: America
Sorry your answer is wrong

Round 3 (Your poin is 10 with 1 correct answer 1 wrong answer)
Guess this country = rmnGaey
Your answer is: help
Hint... This country capital city is Berlin

Guess this country = rmnGaey
Your answer is: Germany

Correct... 5 Poin for Alfonso

Round 4 (Your poin is 15 with 2 correct answer 1 wrong answer)
Guess this country = nTemkitrsnau
Your answer is: exit

Thanks for play this game
You spend 4 round, yourYour poin is 15 with 2 correct answer 1 wrong answer)
kosong@AMD486:~/Documents/python/4$ █

```

Server side

```
kosong@AMD486:~/Documents/python/4$ python3.5 4.server.py
Data load successfully
New user join game : IP 127.0.0.1 with port : 47126
User name is Alfonso

aEniots,Estonia,Tallinn
2019-03-27 16:37:28 1 10
alnor iaauEiqtGeu,Equatorial Guinea,Malabo
2019-03-27 16:38:07 2 0
rmnGaey,Germany,Berlin
2019-03-27 16:38:22 3 5
nTemkitrsnau,Turkmenistan,Ashgabat

---Connection ended---
kosong@AMD486:~/Documents/python/4$ █
```

If anyone does not understand, ask your assistant!