

COMPUTER NETWORK - Homework Assignment 1

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Program structure:

Main:

1. read config file
2. connect to irc server
3. receive message & reply

```
30 if __name__ == '__main__':
31
32     with open('config', 'r') as config:
33         conf = config.read().split('=')
34         if conf[0] == 'CHAN':
35             channel = conf[1].replace('\\', '').replace('\n', '')
36
37     IRCsocket.connect(('irc.freenode.net', 6667))
38     IRCsocket.send('USER {} {} {} {}\n'.format(username, hostname, servername, realname).encode())
39     IRCsocket.send('NICK {}\n'.format(nickname).encode())
40     IRCsocket.send('JOIN {}\n'.format(channel).encode())
41     send_msg('Hello! I am robot.')
42
43 while True:
44     try:
45         msg = IRCsocket.recv(4096).decode()
46     except ConnectionResetError:
47         continue
48     print(msg)
49     msg = msg.split(' ')
50     if len(msg) > 1 and msg[1] == 'PRIVMSG':
51         msg = msg[3:]
52         op = msg[0][1:]
53         if op == '@repeat':
54             send_msg(' '.join(msg[1:]))
55         if op == '@convert':
```

Functions:

1. send_msg(msg): send \$msg to chatroom
2. valid_ip(ip): return list of valid ip

```
12 def send_msg(msg):
13     IRCsocket.send('PRIVMSG {} :{}\n'.format(channel, msg).encode())
14
15 def valid_ip(ip):
16     return valid_ip(str(ip), 0, [])
```

Challenge & solution:

1. 在測試的時候有其他人在 chatroom 上輸入不合法的指令(eg:@ip abcd)，會導致程式出現 error 而中斷
solution:用 try...except 處理錯誤訊息，即使讀到不合法指令也不會導致程式中斷

2. @ip 可能性太多時，一次傳過多訊息會被 irc 擋掉，回傳 throttled due to flooding。

solution:每傳一筆訊息就 sleep(1)

Reflections about this homework:

這次作業用 irc 跟 socket 實作互動機器人，透過實際應用來了解一些網路運作原理，跟只上課或看課本比起來，我覺得這種形式的作業更能讓人清楚理解，很有趣也很有意義。