מערכות הפעלה- מטלה 3

חלק א'

נראה הדגמה איך להפעיל את הצא'ט.

תחילה נקמפל את התכנית:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ make all
 gcc -Wall -Wextra -pthread server.c -o server
 gcc -Wall -Wextra -pthread client.c -o client
```

לאחר מכן נפתח 4 טרמינלים, 1 סרבר 3 לקוחות:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./server
Server is up and listening...
```

דוגמא לטרמינל אחד של הלקוח (3 זהים בהתחלה):

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
```

ונסתכל בסרבר לבדוק התחברויות:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./server
 Server is up and listening...
 Accepted client 1
 Accepted client 2
 Accepted client 3
```

כעת נשלח מספר הודעות מכל לקוח ונראה את הקבלה בסרבר:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./server
Server is up and listening...
Accepted client 1
Accepted client 2
Accepted client 3
Received message from client 1: heyyyy
Received message from client 2: yooo
Received message from client 3: how you doing?
```

כאשר כל לקוח קיבל את ההודעות של האחרים, שמוצגות באופן הבא:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
heyyyy
Please input your message (or type SIGNOUT to leave):
Client 2 says: yooo
Client 3 says: how you doing?
```

```
SUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
Client 1 says: heyyyy
yooo
Please input your message (or type SIGNOUT to leave):
Client 3 says: how you doing?
```

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
Client 1 says: heyyyy
Client 2 says: yooo
how you doing?
Please input your message (or type SIGNOUT to leave):
```

כעת, ננתק לקוח אחד, ע"י שנכתוב SIGNOUT:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
Client 1 says: heyyyy
Client 2 says: yooo
how you doing?
Please input your message (or type SIGNOUT to leave):
Need to go BYE!!!
Please input your message (or type SIGNOUT to leave):
SIGNOUT
Signing out...
```

בסרבר יופיע:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./server
Server is up and listening...
Accepted client 1
Accepted client 2
Accepted client 3
Received message from client 1: heyyyy
Received message from client 2: yooo
Received message from client 3: how you doing?
Received message from client 3: Need to go BYE!!!
Received message from client 3: SIGNOUT
Client 3 left the chat
```

כאשר יופיע אצל שני הלקוחות האחרים שהוא עזב את הצא'ט:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
heyyyy
Please input your message (or type SIGNOUT to leave):
Client 2 says: yooo
Client 3 says: how you doing?
Client 3 says: Need to go BYE!!!
Client 3 left the chat
```

```
ok-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ ./client
Please input your message (or type SIGNOUT to leave):
Client 1 says: heyyyy
yooo
Please input your message (or type SIGNOUT to leave):
Client 3 says: how you doing?
Client 3 says: Need to go BYE!!!
Client 3 left the chat
```

חלק ב' + ג'

נראה הדגמה איך להפעיל את הproactorServer.
תחילה נקמפל את התכנית:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3$ make all
gcc -Wall -Wextra -pthread -I partB   -c partB/proactor.c -o partB/proactor.o
ar rcs partB/libproactor.a partB/proactor.o
gcc -Wall -Wextra -pthread -I partB   partB/libproactor.a partC/proactorServer.c -o partC/proactorServer -LpartB -lproactor
make[1]: Entering directory '/home/roy/Desktop/OperationS3/partA'
gcc -Wall -Wextra -pthread server.c -o server
gcc -Wall -Wextra -pthread client.c -o client
make[1]: Leaving directory '/home/roy/Desktop/OperationS3/partA'
```

לאחר מכן נפתח 3 טרמינלים, אחד עבור הproactorServer ושניים עבור שני לקוחות שונים:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partC$ ./proactorServer
Server started on port 8080
```

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ .
/client
Please input your message (or type SIGNOUT to leave):
```

ונסתכל בproactorServer לבדוק התחברויות:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partC$ ./proactorServer
Server started on port 8080
Client 4 connected
Client 5 connected
```

כעת נשלח מספר הודעות מכל לקוח ונראה את הקבלה בproactorServer:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partC$ ./proactorServer
Server started on port 8080
Client 4 connected
Client 5 connected
Received message from Client 4: Hello!, My name is Mr.O

Received message from Client 5: Hi, nice to meet you
```

כאשר כל לקוח קיבל את ההודעות של האחרים, שמוצגות באופן הבא:

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$ .
/client
Please input your message (or type SIGNOUT to leave):
Hello!, My name is Mr.O
Please input your message (or type SIGNOUT to leave):
Client 5: Hi, nice to meet you
```

```
roy@roy-VivoBook-ASUSLaptop-X421EA-S433EA:~/Desktop/OperationS3/partA$
 ./client
Please input your message (or type SIGNOUT to leave):
Client 4: Hello!, My name is Mr.O

Hi, nice to meet you
Please input your message (or type SIGNOUT to leave):
```

כעת, ננתק לקוח אחד, ע"י שנכתוב SIGNOUT:

```
 Please input your message (or type SIGNOUT to leave):
 SIGNOUT
 Signing out...
```

בproactorServer יופיע:

```
 Client 4 disconnected or error occurred
```