computer network homework

step 1

```
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ python3 client1.py
Input the job you want to do:
calc
Input math expression:
5**2+1-2+100**0.5+20/4
is there any job you want to do?(y/n)y
Input the job you want to do:
dns
Input which IP of domain name you want get:
google.com
is there any job you want to do?(y/n)n
request send to (IP,port): DESKTOP-5LRS0K1  ,  12345
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 2818
client  0  accept packet from server ('127.0.1.1', 12346) :
 result of 5**2+1-2+100**0.5+20/4 is 39.0
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  2819  and seq:  8588
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 2819
client  0  accept packet from server ('127.0.1.1', 12346) :
 IP of google.com is 172.217.24.14
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  2820  and seq:  8589
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ []
```

```
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ python3 udpserverMulticlient.py
[2021-06-15 13:38:16] Creating socket...
[2021-06-15 13:38:16] Socket created
[2021-06-15 13:38:16] Binding server to DESKTOP-5LRS0K1:12345...
[2021-06-15 13:38:16] Server binded to DESKTOP-5LRS0K1:12345
<socket.socket fd=3, family=AddressFamily.AF_INET, type=SocketKind.SOCK_DGRAM, proto=0, laddr=('127.0.1.1', 12345)>
Waiting for client...
Received!
Waiting for client...
['calc', '5**2+1-2+100**0.5+20/4', 'dns', 'google.com']
==========================================
dealing with math claculation
send a packet to  ('127.0.0.1', 58128) with server seq : 2818
recive ACK from : ('127.0.0.1', 58128) with ack seq:  2819  and client seq:  8588
==========================================
dealing with dns request
send a packet to  ('127.0.0.1', 58128) with server seq : 2819
recive ACK from : ('127.0.0.1', 58128) with ack seq:  2820  and client seq:  8589
[]
```

```
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ python3 client1.py
Input the job you want to do:
video
Input which video you want:
1
is there any job you want to do?(y/n)n
receive packet from  ('127.0.1.1', 12346) with seq 4593
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4594  and seq:  5519
receive packet from  ('127.0.1.1', 12346) with seq 4594
receive packet from  ('127.0.1.1', 12346) with seq 4595
receive packet from  ('127.0.1.1', 12346) with seq 4596
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4597  and seq:  5520
receive packet from  ('127.0.1.1', 12346) with seq 4597
receive packet from  ('127.0.1.1', 12346) with seq 4598
receive packet from  ('127.0.1.1', 12346) with seq 4599
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4600  and seq:  5521
receive packet from  ('127.0.1.1', 12346) with seq 4600
receive packet from  ('127.0.1.1', 12346) with seq 4601
receive packet from  ('127.0.1.1', 12346) with seq 4602
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4603  and seq:  5522
receive packet from  ('127.0.1.1', 12346) with seq 4603
receive packet from  ('127.0.1.1', 12346) with seq 4604
receive packet from  ('127.0.1.1', 12346) with seq 4605
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4606  and seq:  5523
receive packet from  ('127.0.1.1', 12346) with seq 4606
receive packet from  ('127.0.1.1', 12346) with seq 4607
receive packet from  ('127.0.1.1', 12346) with seq 4608
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4609  and seq:  5524
receive packet from  ('127.0.1.1', 12346) with seq 4609
receive packet from  ('127.0.1.1', 12346) with seq 4610
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  4611  and seq:  5525
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ []
```

```
send a packet to  ('127.0.0.1', 36042) with server seq : 4593
recive ACK from : ('127.0.0.1', 36042) with ack seq:  4594  and client seq:  5519
send a packet to  ('127.0.0.1', 36042) with server seq : 4594
send a packet to  ('127.0.0.1', 36042) with server seq : 4595
send a packet to  ('127.0.0.1', 36042) with server seq : 4596
recive ACK from : ('127.0.0.1', 36042) with ack seq:  4597  and client seq:  5520
send a packet to  ('127.0.0.1', 36042) with server seq : 4597
send a packet to  ('127.0.0.1', 36042) with server seq : 4598
send a packet to  ('127.0.0.1', 36042) with server seq : 4599
recive ACK from : ('127.0.0.1', 36042) with ack seq:  4600  and client seq:  5521
send a packet to  ('127.0.0.1', 36042) with server seq : 4600
send a packet to  ('127.0.0.1', 36042) with server seq : 4601
send a packet to  ('127.0.0.1', 36042) with server seq : 4602
recive ACK from : ('127.0.0.1', 36042) with ack seq:  4603  and client seq:  5522
send a packet to  ('127.0.0.1', 36042) with server seq : 4603
send a packet to  ('127.0.0.1', 36042) with server seq : 4604
```

```
send a packet to ('127.0.0.1', 36042) with server seq : 4604
send a packet to ('127.0.0.1', 36042) with server seq : 4605
recive ACK from : ('127.0.0.1', 36042) with ack seq: 4606  and client seq:  5523
send a packet to ('127.0.0.1', 36042) with server seq : 4606
send a packet to ('127.0.0.1', 36042) with server seq : 4607
send a packet to ('127.0.0.1', 36042) with server seq : 4608
recive ACK from : ('127.0.0.1', 36042) with ack seq: 4609  and client seq:  5524
send a packet to ('127.0.0.1', 36042) with server seq : 4609
send a packet to ('127.0.0.1', 36042) with server seq : 4610
recive ACK from : ('127.0.0.1', 36042) with ack seq: 4611  and client seq:  5525
```

step 2

```
Input math expression:
5**2
is there any job you want to do?(y/n)n
request send to (IP,port): DESKTOP-5LRS0K1  ,  12345
Input the job you want to do:
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 1919
client  0  accept packet from server ('127.0.1.1', 12346) :
 result of 5+2 is 7
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  1920  and seq:  211
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 1920
client  0  accept packet from server ('127.0.1.1', 12346) :
 result of 5**2 is 25
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  1921  and seq:  212
calc
Input math expression:
1+1
is there any job you want to do?(y/n)n
request send to (IP,port): DESKTOP-5LRS0K1  ,  12345
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 6048
client  1  accept packet from server ('127.0.1.1', 12346) :
 result of 1+1 is 2
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  6049  and seq:  5151
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ python3 udpserverMulticlient.py
[2021-06-15 13:44:23] Creating socket...
[2021-06-15 13:44:23] Socket created
[2021-06-15 13:44:23] Binding server to DESKTOP-5LRS0K1:12345...
[2021-06-15 13:44:23] Server binded to DESKTOP-5LRS0K1:12345
<socket.socket fd=3, family=AddressFamily.AF_INET, type=SocketKind.SOCK_DGRAM, proto=0, laddr=('127.0.1.1', 12345)>
Waiting for client...
Received!
Waiting for client...
['calc', '5+2', 'calc', '5**2']
==========================================
dealing with math claculation
send a packet to ('127.0.0.1', 33134) with server seq : 1919
recive ACK from : ('127.0.0.1', 33134) with ack seq:  1920  and client seq:  211
==========================================
dealing with math claculation
send a packet to ('127.0.0.1', 33134) with server seq : 1920
recive ACK from : ('127.0.0.1', 33134) with ack seq:  1921  and client seq:  212
Received!
Waiting for client...
['calc', '1+1']
==========================================
dealing with math claculation
send a packet to ('127.0.0.1', 55605) with server seq : 6048
recive ACK from : ('127.0.0.1', 55605) with ack seq:  6049  and client seq:  5151
```

step 3

please see picture in step 1

step 4

```
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ python3 client1.py
Input the job you want to do:
calc
Input math expression:
5**2+5
is there any job you want to do?(y/n)y
Input the job you want to do:
dns
Input which IP of domain name you want get:
google.com
is there any job you want to do?(y/n)n
request send to (IP,port): DESKTOP-5LRS0K1  ,  12345
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 3782
but the packet from  ('127.0.1.1', 12346) with WRONG checksum  ack seq:  6068  and seq:  3782
client  0  accept packet from server ('127.0.1.1', 12346) :
 result of 5**2+5 is 30
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  3783  and seq:  6068
==========================================
receive packet from  ('127.0.1.1', 12346) with seq 3783
but the packet from  ('127.0.1.1', 12346) with WRONG checksum  ack seq:  6069  and seq:  3783
client  0  accept packet from server ('127.0.1.1', 12346) :
 IP of google.com is 216.58.200.238
ACK send to (IP,port): ('127.0.1.1', 12346) with ack seq:  3784  and seq:  6069
zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$

zhang@DESKTOP-5LRS0K1:/mnt/d/VScodeWorkSpace/college/computer_network_class/computer_network/B073040025$ python3 udpserverMulticlient.py
[2021-06-15 13:48:29] Creating socket...
[2021-06-15 13:48:29] Socket created
[2021-06-15 13:48:29] Binding server to DESKTOP-5LRS0K1:12345...
[2021-06-15 13:48:29] Server binded to DESKTOP-5LRS0K1:12345
<socket.socket fd=3, family=AddressFamily.AF_INET, type=SocketKind.SOCK_DGRAM, proto=0, laddr=('127.0.1.1', 12345)>
Waiting for client...
Received!
Waiting for client...
['calc', '5**2+5', 'dns', 'google.com']
==========================================
dealing with math claculation
send a packet to  ('127.0.0.1', 33385) with server seq : 3782
recive ACK from : ('127.0.0.1', 33385) with ack seq:  3783  and client seq:  6068
but the packet from  ('127.0.0.1', 33385) with WRONG checksum  ack seq:  3783  and seq:  6068
==========================================
dealing with dns request
send a packet to  ('127.0.0.1', 33385) with server seq : 3783
recive ACK from : ('127.0.0.1', 33385) with ack seq:  3784  and client seq:  6069
but the packet from  ('127.0.0.1', 33385) with WRONG checksum  ack seq:  3784  and seq:  6069
```

step 5

please see picture in step 1