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NETWORK AND COMMUNICATION (CSE1004)
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LAB CAT- 18/02/2020

QUESTION-1

A customer (Client Program) can use his/her credit card for purchasing through online with 2% service charge will be added in addition to the purchased amount. The bank (Server Program) provides 40 days to repay the amount. If the customer paid the amount within the time limit the interest and penalty will not be collected from the customer. If the customer does not pay the repayment amount, the bank will collect 15% interest for the repayment amount from the purchased date to the repayment of the current date and additionally, penalty rupees 500 will also be collected by the bank. Consider a customer who takes n number of days as extra time to repay the purchased amount. Initially the bank will advertise its products with price, so that the customer can buy the required products. Write a TCP client server program to calculate the total amount to be paid by the customer to the bank.

CODE

SERVER/BANK:

```
import socket
port=60002
s=socket.socket()
host=socket.gethostname()
s.bind((host,port))
s.listen(5)
print('Bank is listening...')
while(True):
    conn,addr=s.accept()
    print('Got connection from:',conn,addr)
    name='pen-drive'
    price=500
    p=str(price)
    print('Article :',name)
    print("Price is:",price)
    print('enter date of purchase')
    dop=input()
    dop1=str(dop)
    print('enter month of purchase')
    mop=input()
    mop1=str(mop)
    print('enter year of purchase')
    yop=input()
    yop1=str(yop)

    print('Data of purchase',dop,',',mop,',',yop)
    conn.send(p.encode())
```

```

        conn.send(dop1.encode())
        conn.send(mop1.encode())
        conn.send(yop1.encode())
        tp=conn.recv(1024).decode()
        print('Total price:')
        print(tp)
conn.close()

```

CLIENT/CUSTOMER:

```

import socket
port=60002
s=socket.socket()
host=socket.gethostname()
print('Enter date of payment..')
datepay=int(input())
print('Enter month of payment..')
monthpay=int(input())
print('Enter year of payment..')
yrpay=int(input())
s.connect((host,port))
data=s.recv(3).decode()
print('Original price',data)
dp=s.recv(2).decode()
dp1=int(dp)
mp=s.recv(1).decode()
mp1=int(mp)
yp=s.recv(4).decode()
yp1=int(yp)
pr=int(data)
n=(datepay-dp1)+(monthpay-mp1)*30-40

if(n==0):
    pr=pr+0.02*pr
    pr1=str(pr)
    s.send(pr1.encode())
else:
    print('Days late:',n)
    late=500+0.15*n*pr
    total=late+0.02*pr+pr
    totalS=str(total)
    s.send(totalS.encode())
s.close()

```

SNAPSHOTS OF CODE:

SERVER:



```
1 import socket
2 port=60002
3 s=socket.socket()
4 host=socket.gethostname()
5 s.bind((host,port))
6 s.listen(5)
7 print('Bank is listening...')
8 while(True):
9     conn,addr=s.accept()
10    print('Got connection from:',conn,addr)
11    name='pen-drive'
12    price=500
13    p=str(price)
14    print('Article :',name)
15    print("Price is:",price)
16    print('enter date of purchase')
17    dop=input()
18    dop1=str(dop)
19    print('enter month of purchase')
20    mop=input()
21    mop1=str(mop)
22    print('enter year of purchase')
23    yop=input()
24    yop1=str(yop)
25
26    print('Data of purchase',dop,',',mop,',',yop)
27    conn.send(p.encode())
28    conn.send(dop1.encode())
29    conn.send(mop1.encode())
30    conn.send(yop1.encode())
31    tp=conn.recv(1024).decode()
32    print('Total price:')
33    print(tp)
34    conn.close()
35
36
```

55: File /home/likewise-open/VITUNIVERSITY/18bce2527/18BCE2527/client.py saved.
17: File /home/likewise-open/VITUNIVERSITY/18bce2527/18BCE2527/client.py saved.

CLIENT:

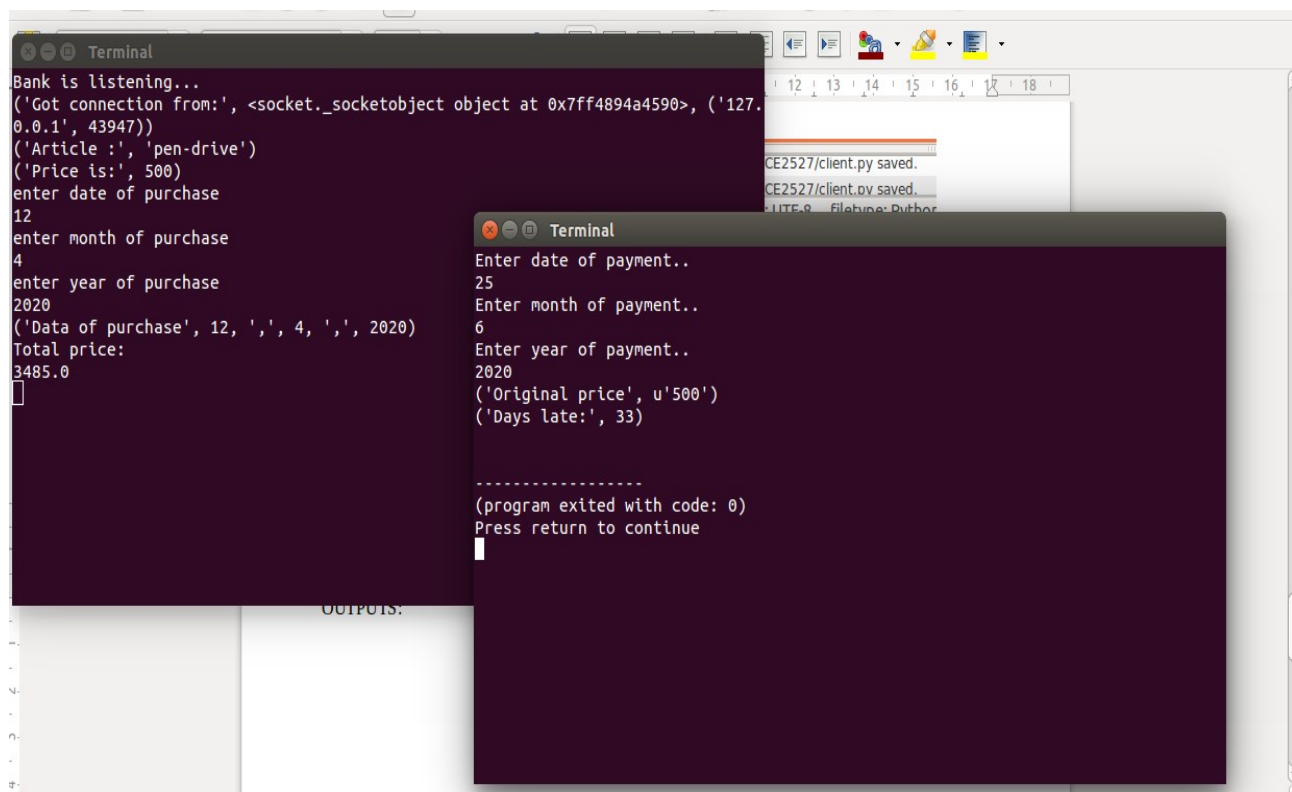


```
1 import socket
2 port=60002
3 s=socket.socket()
4 host=socket.gethostname()
5 print('Enter date of payment..')
6 datepay=int(input())
7 print('Enter month of payment..')
8 monthpay=int(input())
9 print('Enter year of payment..')
10 yrpay=int(input())
11 s.connect((host,port))
12 data=s.recv(3).decode()
13 print('Original price',data)
14 dp=s.recv(2).decode()
15 dp1=int(dp)
16 mp=s.recv(1).decode()
17 mp1=int(mp)
18 yp=s.recv(4).decode()
19 yp1=int(yp)
20 pr=int(data)
21 n=(datepay-dp1)+(monthpay-mp1)*30-40
22
23 if(n==0):
24     pr=pr+0.02*pr
25     pr1=str(pr)
26     s.send(pr1.encode())
27 else:
28     print('Days late:',n)
29     late=500+0.15*n*pr
30     total=late+0.02*pr+pr
31     totals=str(total)
32     s.send(totals.encode())
33 s.close()
34
```

l:55: File /home/likewise-open/VITUNIVERSITY/18bce2527/18BCE2527/client.py saved.
l:17: File /home/likewise-open/VITUNIVERSITY/18bce2527/18BCE2527/client.py saved.
l: 21 sel: 0 INS TAB mode: Unix (LF) encoding: UTF-8 filetype: Python

OUTPUTS:

1ST OUTPUT:



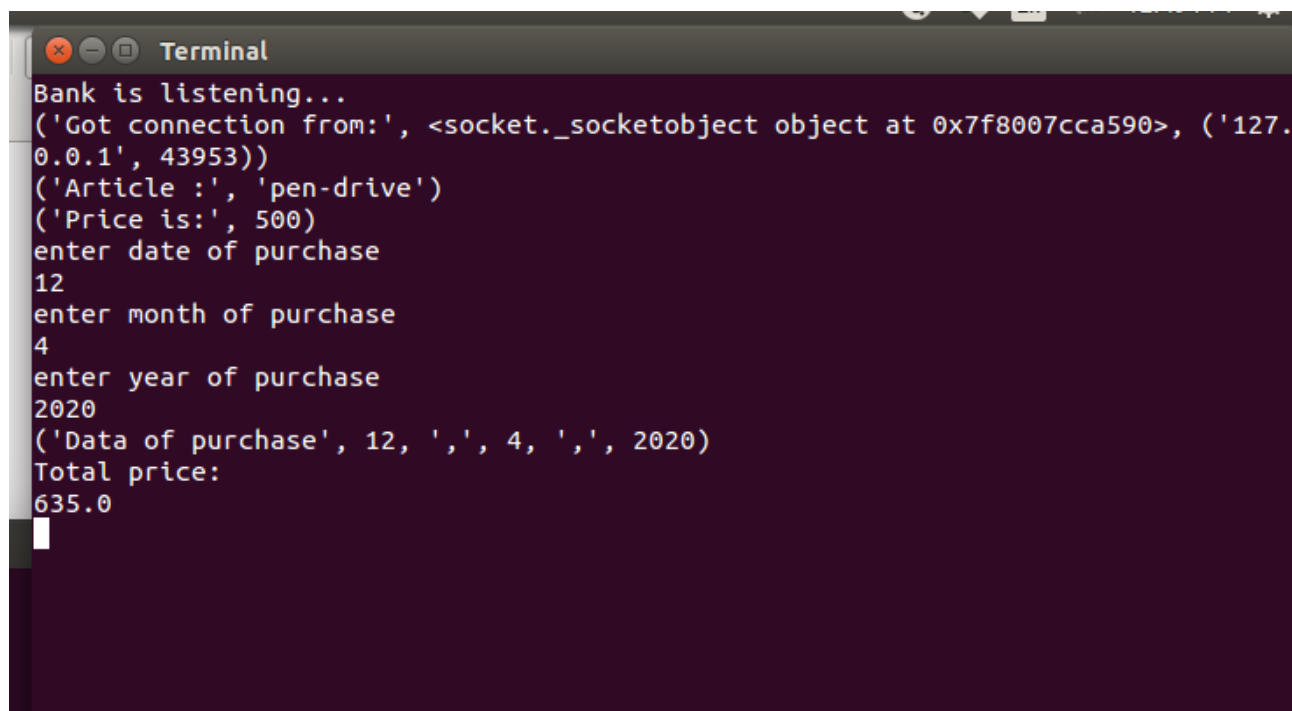
The image shows two terminal windows. The left window displays the initial part of the program's execution, including connection details and purchase information. The right window shows the payment details and the program's exit message.

```
Terminal
Bank is listening...
('Got connection from:', <socket._socketobject object at 0x7ff4894a4590>, ('127.0.0.1', 43947))
('Article :', 'pen-drive')
('Price is:', 500)
enter date of purchase
12
enter month of purchase
4
enter year of purchase
2020
('Data of purchase', 12, ',', 4, ',', 2020)
Total price:
3485.0
█

Terminal
Enter date of payment..
25
Enter month of payment..
6
Enter year of payment..
2020
('Original price', u'500')
('Days late:', 33)

-----
(program exited with code: 0)
Press return to continue
█
```

2ND OUTPUT:



The image shows a single terminal window displaying the program's output for the second run. The output is similar to the first run but with a different total price.

```
Terminal
Bank is listening...
('Got connection from:', <socket._socketobject object at 0x7f8007cca590>, ('127.0.0.1', 43953))
('Article :', 'pen-drive')
('Price is:', 500)
enter date of purchase
12
enter month of purchase
4
enter year of purchase
2020
('Data of purchase', 12, ',', 4, ',', 2020)
Total price:
635.0
█
```

```
Terminal
Enter date of payment..
17
Enter month of payment..
5
Enter year of payment..
2020
('Original price', u'500')
('Days late:', -5)

-----
(program exited with code: 0)
Press return to continue
█
```