Automata, Formal Languages and Logic

Assignment 1

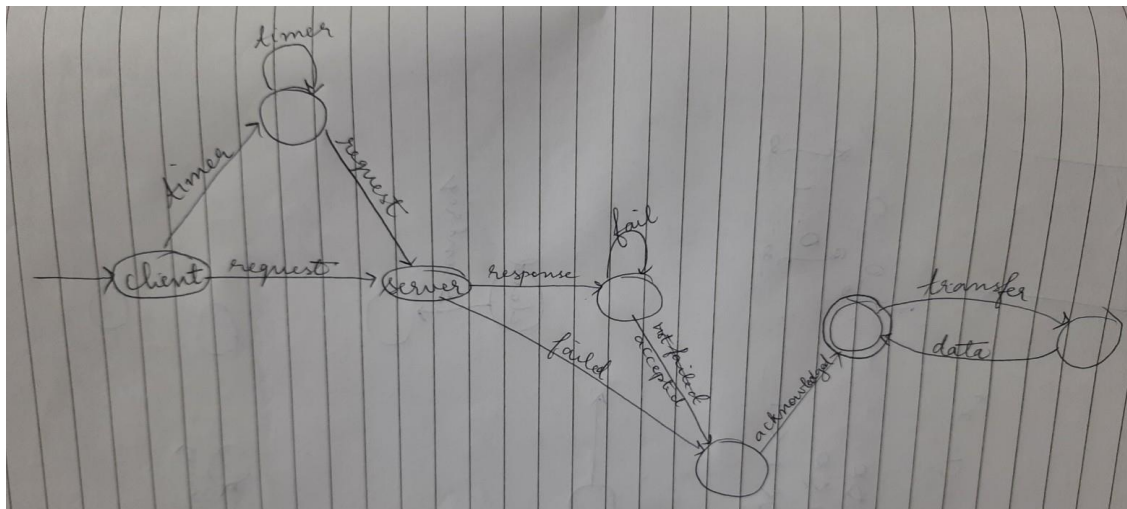**Name: Nandan N**
Section: 3F
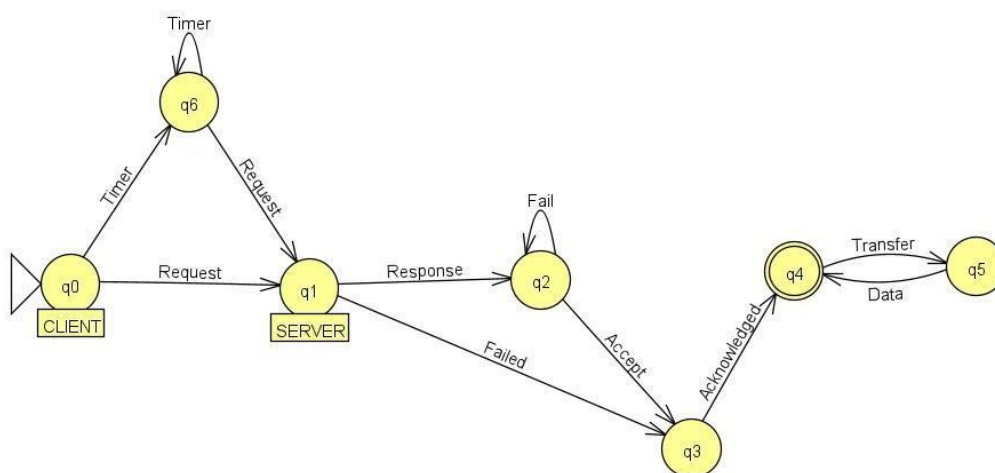**Roll Number:** 63
SRN: PES1UG21CS361
Question: Construct the Deterministic Finite Automata for TCP(Transmission Control Protocol)

Constructing the DFA:

DFA using JFLAP software

Python Code to implement the working of TCP:

```python
import random
a=random.randint(0,1)
b=random.randint(0,1)
c=1
while(c==1):
    print("requesting access")
    a=random.randint(0,1)
    if(a==1):
        print("acknowledged.Please send confirmation:")
        b=random.randint(0,1)
        y = input()
        if(b==1):
            print("\naccess granted")
            c=0
        else:
            print('\nconfirmation failed')
    else:
        print('\nrequest failed \n retrying....')
```

Code output:
ATTEMPT 1:

requesting access

request failed
 retrying....
requesting access

request failed
 retrying....
requesting access

request failed
 retrying....

requesting access

acknowledged.Please send confirmation:

y

access granted

==
<u>Attempt 2:</u>

requesting access

acknowledged.Please send confirmation:

y

confirmation failed

requesting access

acknowledged.Please send confirmation:

y

access granted