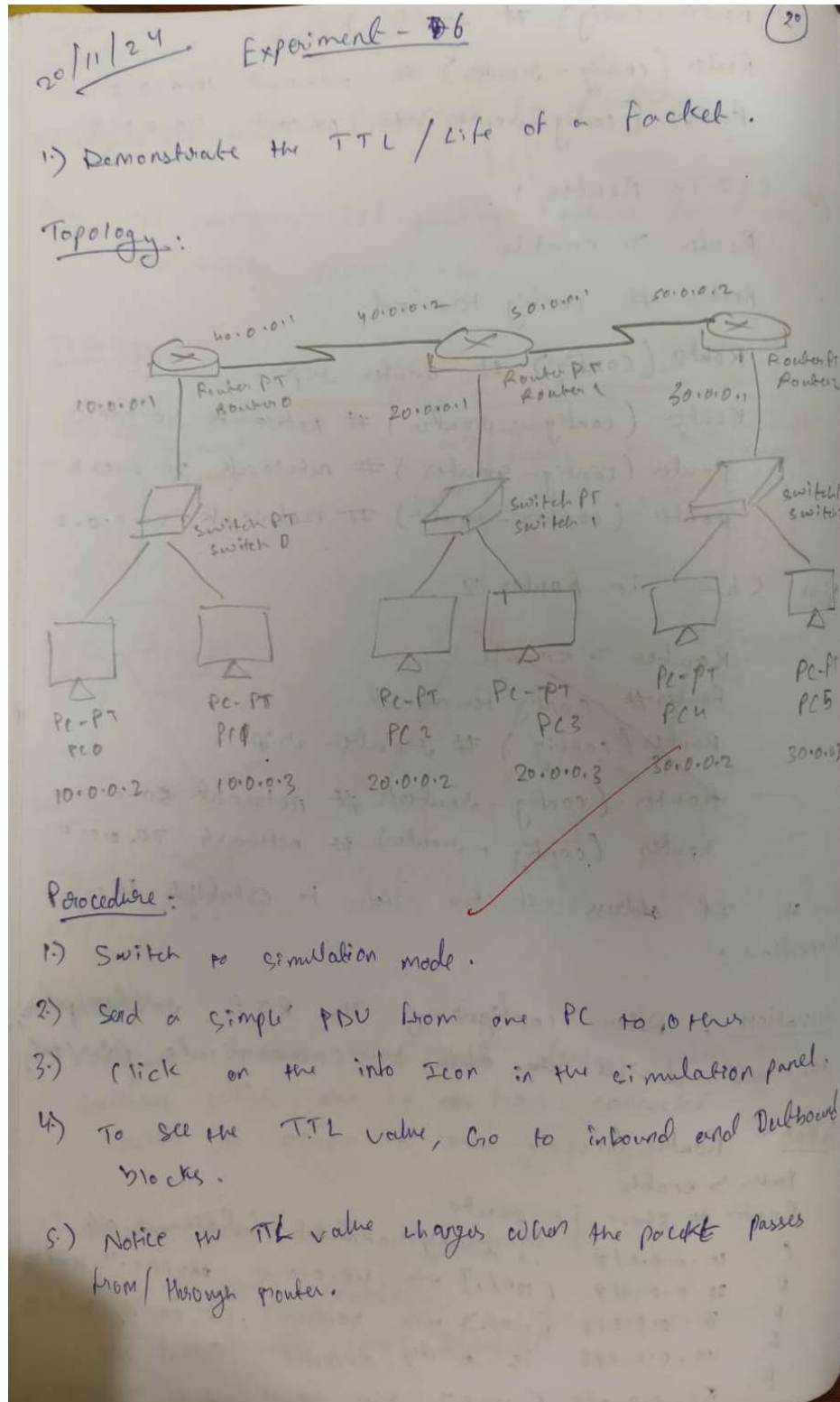


## Program 7

**Aim:** Demonstrate the TTL/ Life of a Packet .

### **Topology , Procedure and Observation:**



### Observation :

As a packet travels through a network, its TTL (Time to live) value decreases by 1 at each router it passes. Initially, the packet might start with a TTL of 255. When it reaches the first router the TTL is reduced to 254. As the packet continues ~~the TTL~~ its journey through each successive router, the TTL continues to decrement - 253 after the second router 252 after the third and so on. If the TTL reaches 0 before reaching its destination the packet is discarded and an ICMP "Time Exceeded" message is sent back to the sender.

OK  
20/11

## Screen Shots:

PDU Information at Device: Router0

OSI Model   Inbound PDU Details   Outbound PDU Details

At Device: Router0  
Source: PC0  
Destination: PC3

**In Layers**

Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 10.0.0.2, Dest. IP: 20.0.0.3 ICMP Message Type: 8
Layer 2: Ethernet II Header 000A.41E3.E33A >> 0010.11A0.4697
Layer 1: Port FastEthernet0/0

**Out Layers**

Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 10.0.0.2, Dest. IP: 20.0.0.3 ICMP Message Type: 8
Layer 2: HDLC Frame HDLC
Layer 1: Port(s): Serial2/0

1. FastEthernet0/0 receives the frame.

Challenge Me   << Previous Layer   Next Layer >>

PDU Information at Device: Router0

OSI Model   Inbound PDU Details   Outbound PDU Details

**PDU Formats**

Ethernet II

0	4	8	14	19	Bytes
PREAMBLE: 101010...1011		DEST MAC: 0010.11A0.4697		SRC MAC: 000A.41E3.E33A	
TYPE: 0x800		DATA (VARIABLE LENGTH)		FCS: 0x0	

IP

0	4	8	16	19	31	Bits
4		IHL	DSCP: 0x0		TL: 28	
ID: 0xa				0x0	0x0	
TTL: 255		PRO: 0x1		CHKSUM		
SRC IP: 10.0.0.2						
DST IP: 20.0.0.3						
OPT: 0x0					0x0	
DATA (VARIABLE LENGTH)						

ICMP

0	8	16	31	Bits
TYPE: 0x8		CODE: 0x0	CHECKSUM	

# PDU Information at Device: Router0

OSI Model

Inbound PDU Details

Outbound PDU Details

## PDU Formats

### HDLC

0	8	16	32	32+x	48+x	56+x
FLG: 0111 1110	ADR: 0x8f	CONTROL: 0x0	DATA: (VARIABLE LENGTH)	FCS: 0x0	FLG: 0111 1110	

### IP

0	4	8	16	19	31 Bits
4	IHL	DSCP: 0x0	TL: 28		
ID: 0xa			0x0	0x0	
TTL: 254		PRO: 0x1	CHKSUM		
SRC IP: 10.0.0.2					
DST IP: 20.0.0.3					
OPT: 0x0				0x0	
DATA (VARIABLE LENGTH)					

### ICMP

0	8	16	31 Bits
TYPE: 0x8		CODE: 0x0	CHECKSUM
ID: 0x5		SEQ NUMBER: 10	