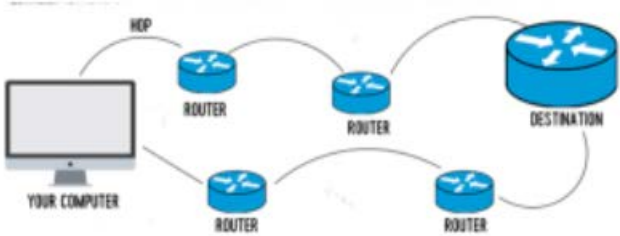
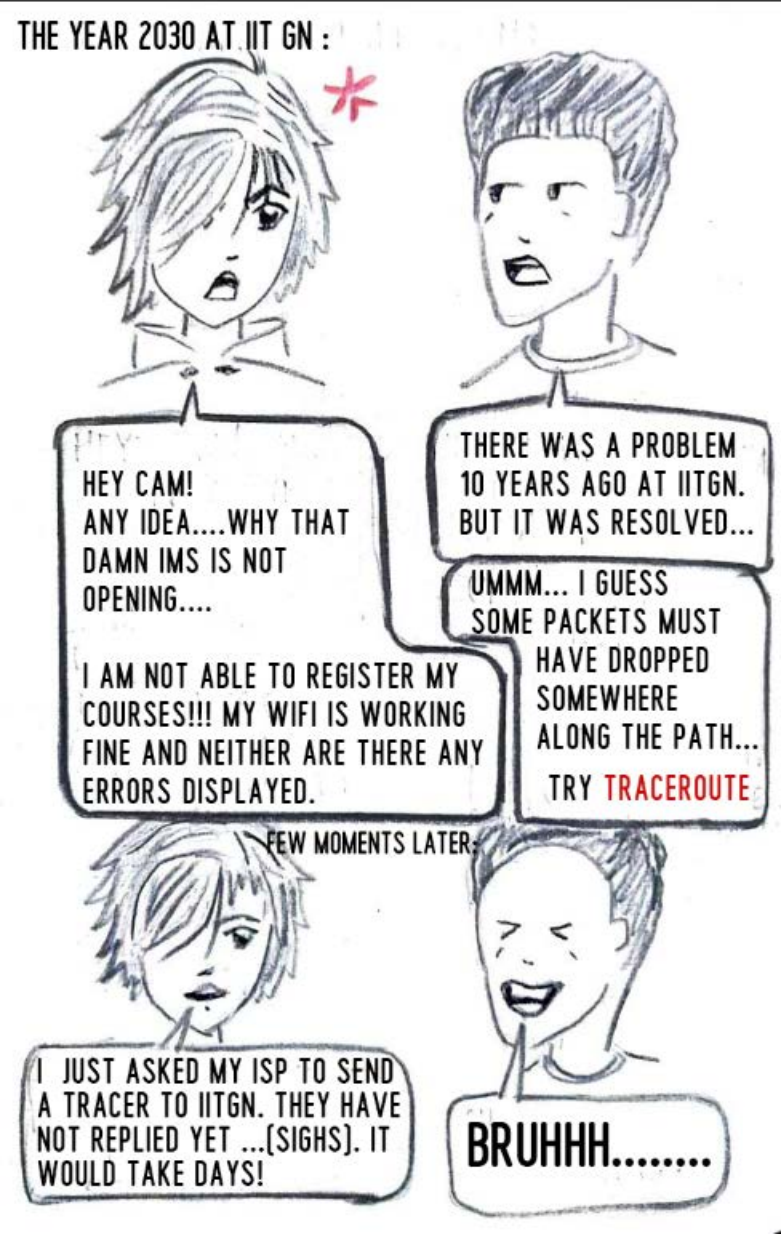
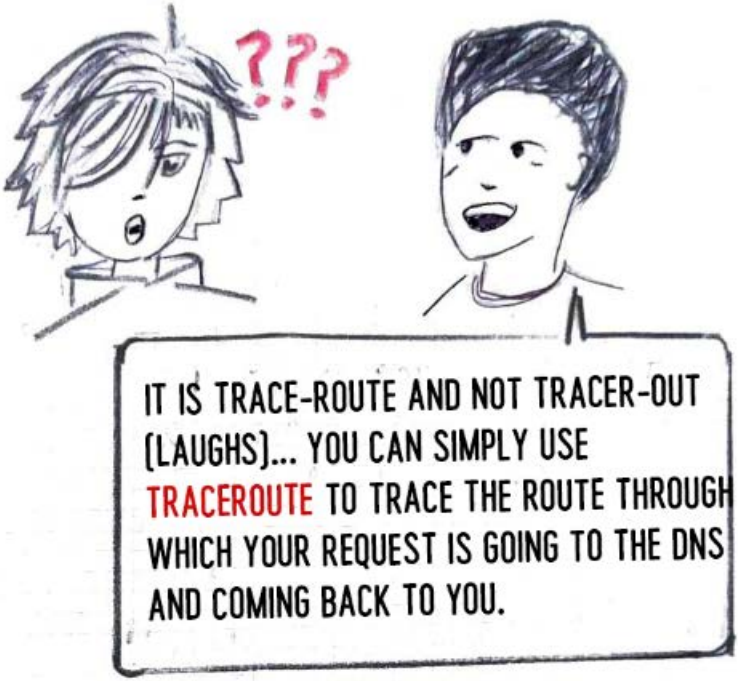


TRACEROUTE

TYLER

CAMEROON


THE YEAR 2030 AT IIT GN :
HEY CAM!
ANY IDEA....WHY THAT DAMN IMS IS NOT OPENING....
I AM NOT ABLE TO REGISTER MY COURSES!!! MY WIFI IS WORKING FINE AND NEITHER ARE THERE ANY ERRORS DISPLAYED.
THERE WAS A PROBLEM 10 YEARS AGO AT IITGN. BUT IT WAS RESOLVED...
UMMM... I GUESS SOME PACKETS MUST HAVE DROPPED SOMEWHERE ALONG THE PATH...
TRY TRACEROUTE
FEW MOMENTS LATER:
I JUST ASKED MY ISP TO SEND A TRACER TO IITGN. THEY HAVE NOT REPLIED YET ...[SIGHS]. IT WOULD TAKE DAYS!
BRUHHH.....



CAMEROON: OPEN THE COMMAND PROMPT AND WRITE THE FOLLOWING LINE:

```
C:\Users\Tyler>tracert ims.iitgn.ac.in
Tracing route to ims.iitgn.ac.in [14.139.98.79]
over a maximum of 30 hops:

  1     5 ms     3 ms     2 ms  192.168.1.1
  2     *        *        *     Request timed out.
  3    17 ms    15 ms    15 ms  [59.185.211.249]
  4    16 ms    15 ms    15 ms  [59.185.211.250]
  5    16 ms    16 ms    17 ms  [115.114.89.125]
  6    18 ms    18 ms    18 ms  [115.113.165.62]
  .
  .
  .
 13    26 ms    26 ms    25 ms  ims.iitgn.ac.in [14.139.98.79]
```

WHAT ARE THOSE NUMBERS? THE COLUMNS SEEM TO BE SOME IP ADDRESSES. THIS SEEMS SO **CONFUSING !!!**

TRACEROUTE HELPS IN FINDING THE EXACT PLACE WHERE THE PROBLEM IS OCCURING.
SEE... THE PACKETS (REQUEST) SENT BY YOU TO THE DESTINATION **HOPS** THROUGH MANY ROUTERS

THE FIRST COLUMN IS THE **TTL** OF THE PACKET SENT. TRACERT SENDS THREE REQUEST FOR A ROUTER AND PRINTS THE **DELAY** FOR THE THREE REQUESTS. THE LAST COLUMN DENOTES **IP ADDRESS** OF EACH ROUTER.

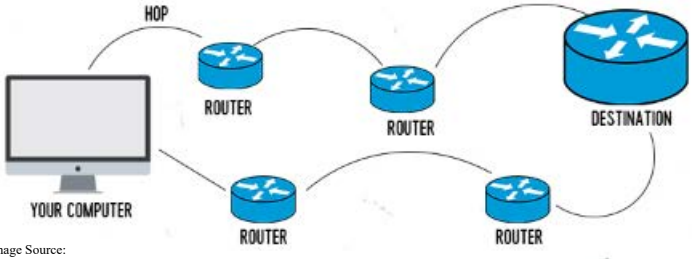


Image Source:
https://commons.wikimedia.org/wiki/File:Router_symbol-Blue.svg
https://www.freepik.com/free-vector/technological-devices-design_953322.htm#page=1&query=computer&position=2

TTL

TTL STANDS FOR TIME TO LIVE. IT IS THE MAXIMUM NUMBER OF TIMES A PACKET WOULD HOP TO GET TO THE DESTINATION BEFORE GETTING DROPPED BY A ROUTER

DELAY

IT IS THE AMOUNT OF TIME TAKEN BY A PACKET TO REACH THE REQUIRED ROUTER AND COME BACK TO THE SOURCE

CAMEROON: THERE ARE OTHER FUNCTIONALITIES IN TRACERT AS WELL:

THE MAIN SYNTAX OF TRACERT IS:

```
tracert -d -h -j -w target_host

-d
    Not to resolve the IP address to host names
-h
    It is the maximum number of hops that a packet would take
     before getting dropped (30 hops by default)
-j
   Tells the loose source route along the host list
-w
    Waits for the reply from the router in milliseconds before
   printing timeout

target_host
    Is the target/destination upto which, you want to send your
     packet to.
```

NOTE: For Linux, traceroute is to be used instead of tracert

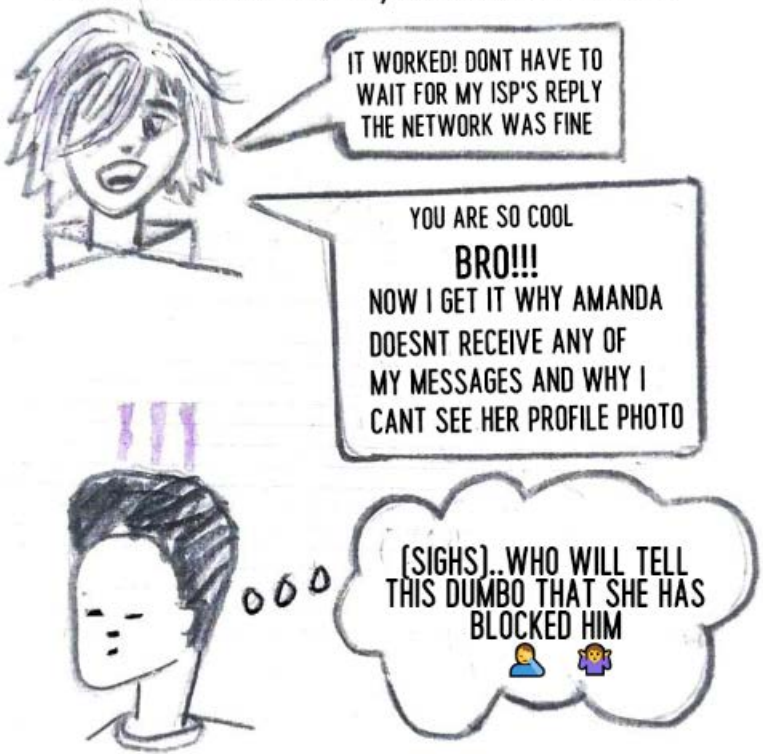
CAMEROON: IF THE PACKET IS DROPPED BY A ROUTER, THE FEEDBACK IS SENT BACK TO THE YOU. AND THUS YOU FIND THE PLACE WHERE THE PROBLEM IS

source: https://support.microsoft.com/en-in/help/314868/how-to-use-tracert-to-troubleshoot-tcp-ip-problems-in-windows

BUT THE TRACEROUTE COMMAND
IS NOT SHOWING ANY ERROR

THIS MEANS THAT ALL THE ROUTERS IN THE PATH ARE WORKING FINE RIGTH NOW. MAYBE THERE WAS TOO MUCH TRAFFIC EARLIER WHICH MADE THE PROCESS SLOWER.
TRY AGAIN AFTER SOME TIME

AFTER WAITING FOR 15 MINUTES, TYLER FILLS HIS COURSES:



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