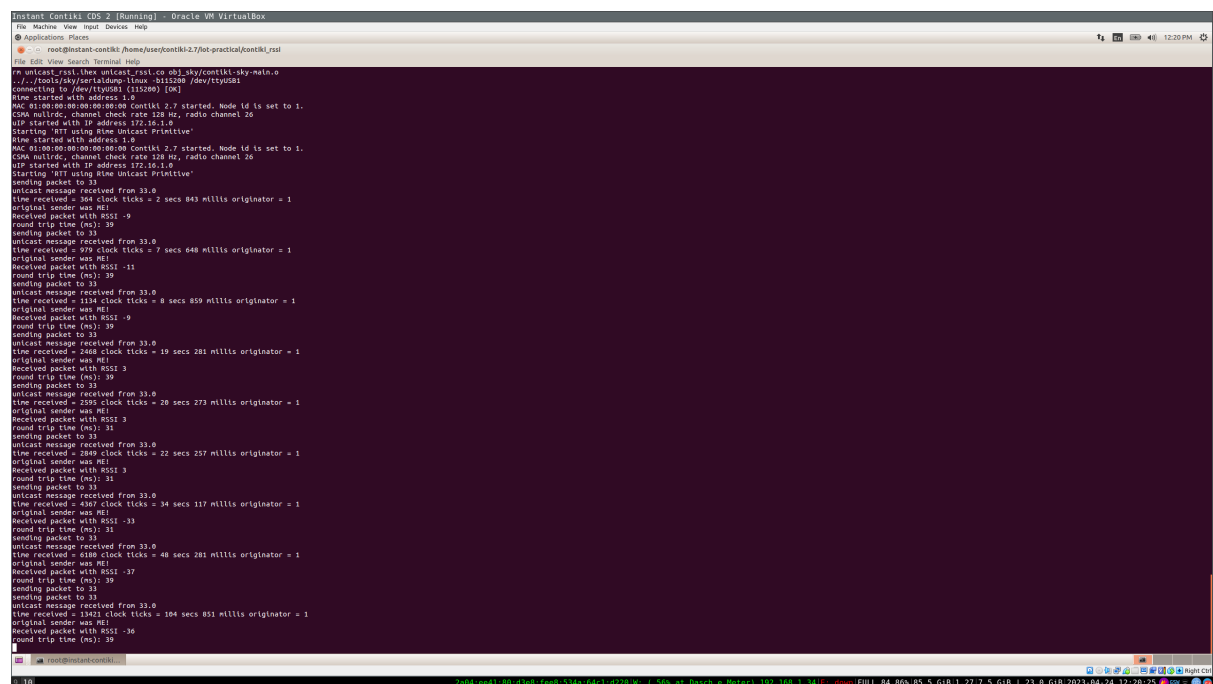


Q4 Unicasting and RSSI measurement

Question 2: RSSI The code above exchanges a unicast message with a partner node (replace the node ids) and measures the time difference. Read out the RSSI value from the received message and test out how the RSSI behaves when you physically increase and decrease the distance between the two nodes. The RSSI is an attribute of the packet buffer (packetbuf_attr) read about it in the contiki documentation

Describe how this RSSI behaves with increasing the distance between two nodes.

Here is an example of the RSSI (Received Signal Strength Indication) when using different distances. It is obvious that it decreases when the distance gets increases.



```
Instant: Contiki CDS 2 [Running] - Oracle VM VirtualBox
File Machine View Host Devices Help
Applications Places
root@instant-contiki: /home/user/contiki-2.7/hot-practical/contiki_rssi

$ ./unicast_rssi.exe unicast_rssi.co obj_sky/contiki-sky-main.o
.../tools/sky/serialdump-linux -b15200 /dev/ttyUSB1
connecting to /dev/ttyUSB1 [OK]
time started with address 1.0
MAC 01:00:00:00:00:00:00:00 Contiki 2.7 started. Node id is set to 1.
CSMA mllirc, channel check rate 128 Hz, radio channel 26
udp started with IP address 172.16.1.0
Starting 'RTT using Rime Unicast Primitive'
time started with address 1.0
MAC 01:00:00:00:00:00:00:00 Contiki 2.7 started. Node id is set to 1.
CSMA mllirc, channel check rate 128 Hz, radio channel 26
udp started with IP address 172.16.1.0
Starting 'RTT using Rime Unicast Primitive'
unicast message received from 33.0
time received = 384 clock ticks = 2 secs 843 mllis originator = 1
original sender was ME!
Received packet with RSSI -9
round trip time (ms): 39
sending packet to 33
unicast message received from 33.0
time received = 379 clock ticks = 7 secs 648 mllis originator = 1
original sender was ME!
Received packet with RSSI -11
round trip time (ms): 39
sending packet to 33
unicast message received from 33.0
time received = 1134 clock ticks = 8 secs 859 mllis originator = 1
original sender was ME!
Received packet with RSSI -9
round trip time (ms): 39
sending packet to 33
unicast message received from 33.0
time received = 2488 clock ticks = 19 secs 281 mllis originator = 1
original sender was ME!
Received packet with RSSI 3
round trip time (ms): 39
sending packet to 33
unicast message received from 33.0
time received = 2395 clock ticks = 28 secs 273 mllis originator = 1
original sender was ME!
Received packet with RSSI 3
round trip time (ms): 31
sending packet to 33
unicast message received from 33.0
time received = 2849 clock ticks = 22 secs 207 mllis originator = 1
original sender was ME!
Received packet with RSSI 3
round trip time (ms): 31
sending packet to 33
unicast message received from 33.0
time received = 4367 clock ticks = 34 secs 117 mllis originator = 1
original sender was ME!
Received packet with RSSI -33
round trip time (ms): 31
sending packet to 33
unicast message received from 33.0
time received = 6188 clock ticks = 48 secs 281 mllis originator = 1
original sender was ME!
Received packet with RSSI -37
round trip time (ms): 39
sending packet to 33
unicast message received from 33.0
time received = 13421 clock ticks = 104 secs 851 mllis originator = 1
original sender was ME!
Received packet with RSSI -36
round trip time (ms): 39
```