CONTIKI HANDS ON PROJECT

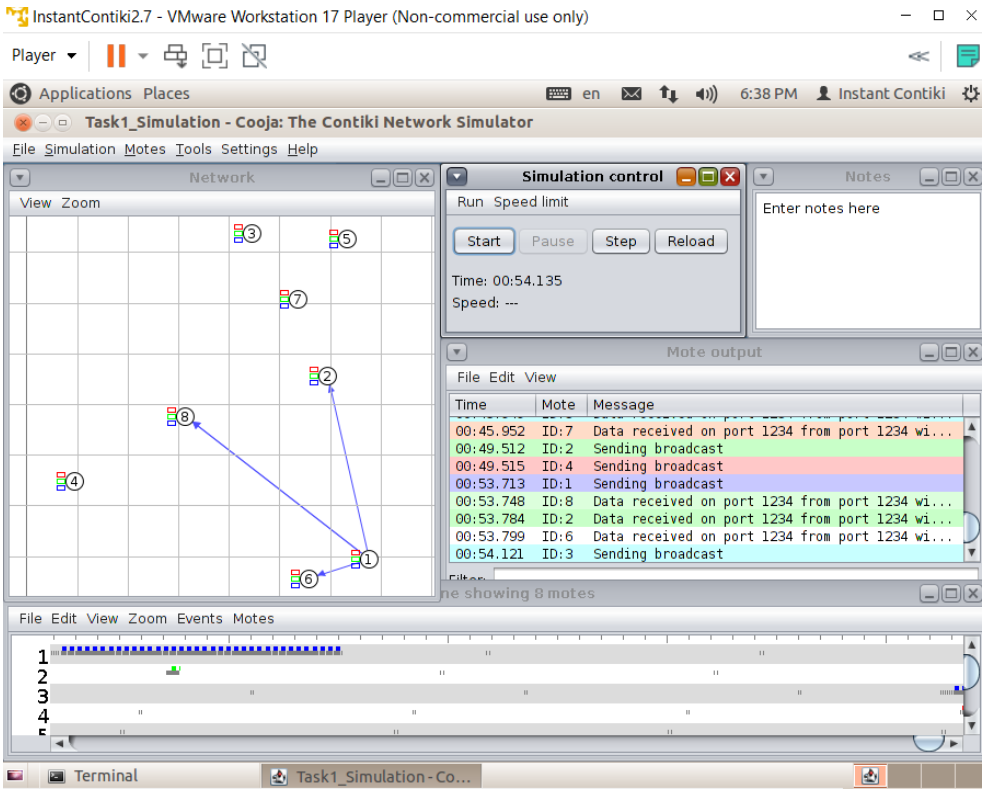
TASK 1

SETUP DESCRIPTION

1) In this task, we've got a wireless sensor network composed of 8-motes.
2) These motes send periodic IPv6/UDP packets to each other using ContikiMAC sleepy router functionality.
3) This task is simulated by first selecting "New Simulation" and creating a "sky-mote".
4) Then, select the file "Contiki/examples/ipv6/simple-udp-rpl", and press "Compile".
5) After compilation, we press "Create" to start creating our motes to form the required network.
6) The number of selected motes should be 8.

SYSTEM COMPONENTS

The given system shows 5 parts which are: Network (Showing all 8-motes), Simulation Control (Start, Pause and Reload simulation), Simulation Notes, Mote Output (Showing sent and received messages between nodes) and Timeline for all 8-motes.



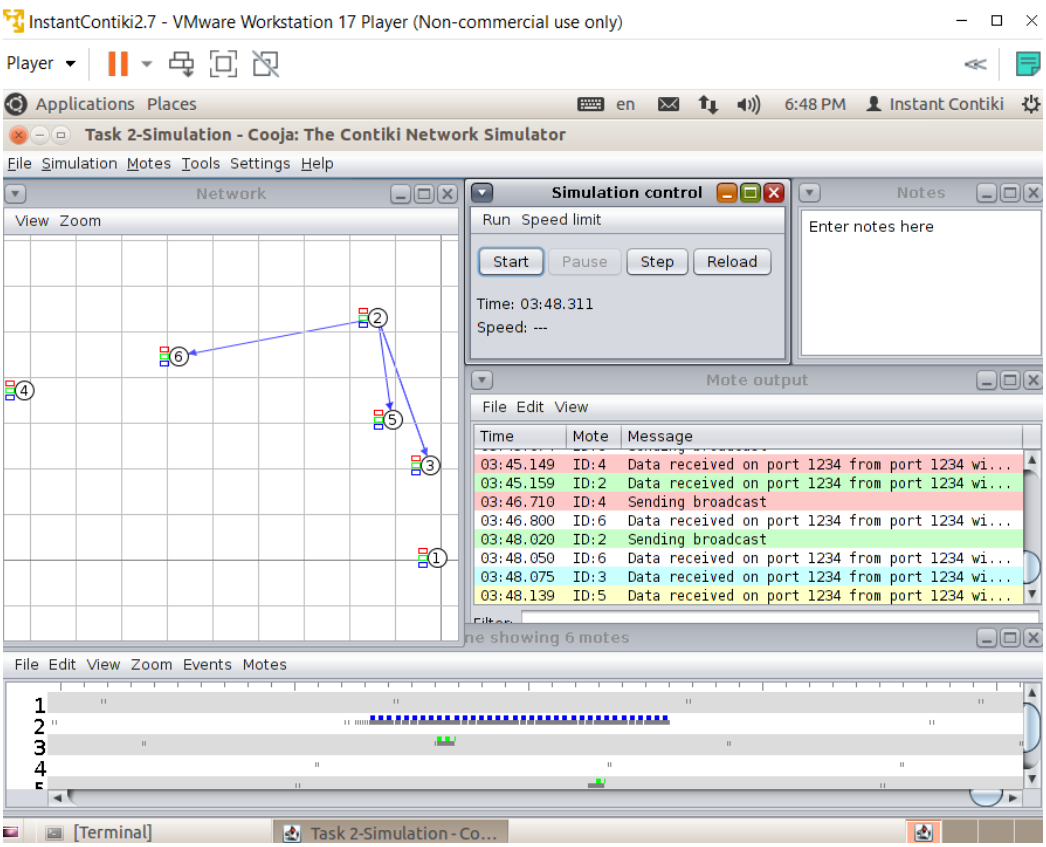
TASK 2

SETUP DESCRIPTION

1) In this task, we've got a wireless sensor network composed of 6-motes.
2) These motes send periodic IPv6/UDP packets to each other using ContikiMAC sleepy router functionality.
3) This task is simulated by first selecting "New Simulation" and creating a "sky-mote".
4) Then, select the file "Contiki/examples/ipv6/simple-udp-rpl", and press "Compile".
5) After compilation, we press "Create" to start creating our motes to form the required network.
6) The number of selected motes should be 6.

SYSTEM COMPONENTS

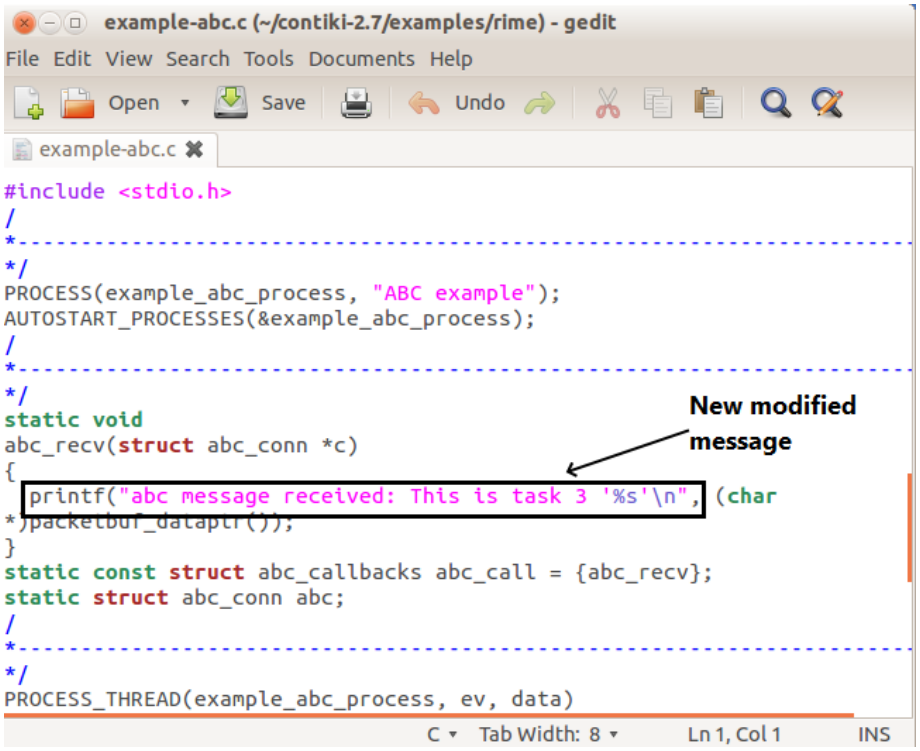
The given system shows 5 parts which are: Network (Showing all 8-motes), Simulation Control (Start, Pause and Reload simulation), Simulation Notes, Mote Output (Showing sent and received messages between nodes) and Timeline for all 6-motes.



TASK 3

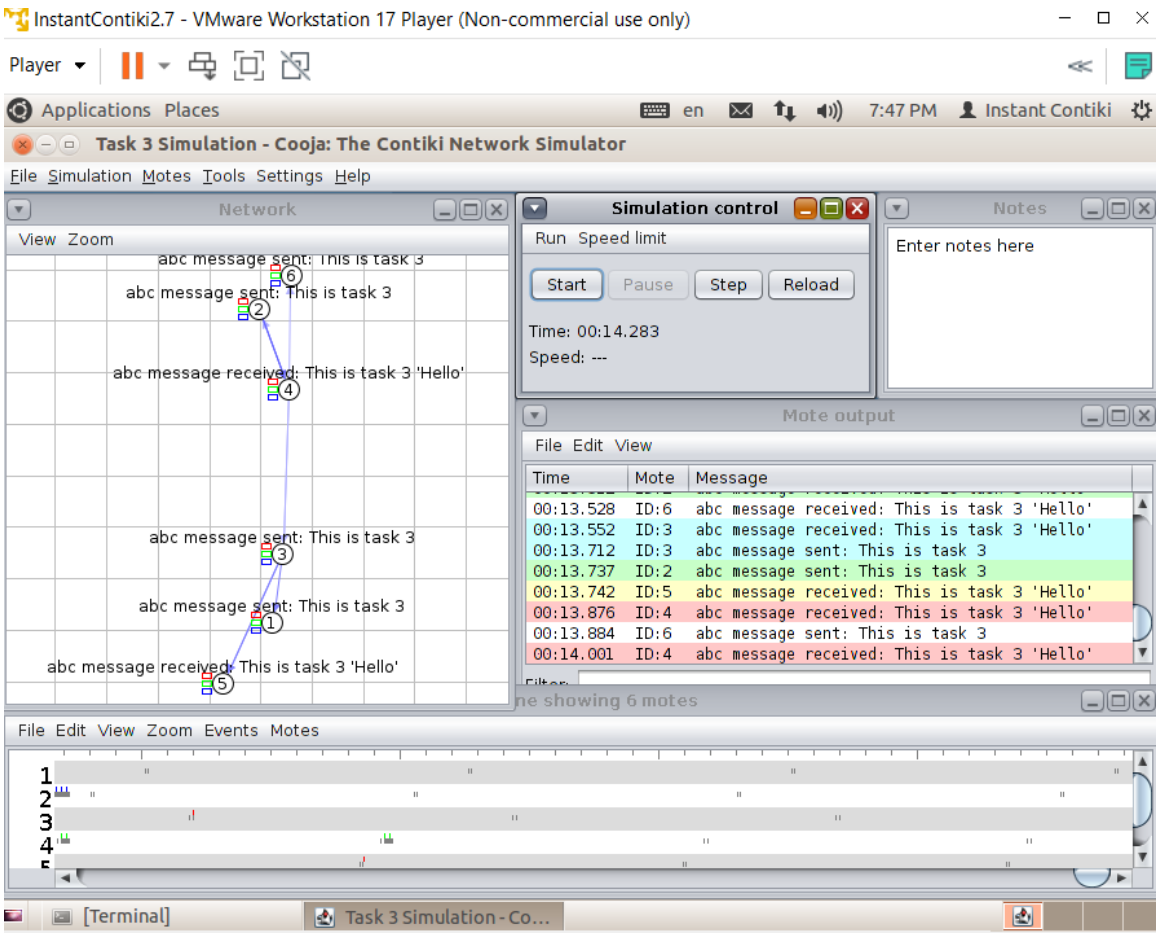
SETUP DESCRIPTION

1) In this task, we've got a wireless sensor network composed of 6-motes.
2) These motes send periodic messages of the form "abc message received" each other.
3) Here, we modify the source code, to print the new message "abc message received: This is task 3".
4) Same steps are repeated again to simulate those motes, along with the messages exchanged between them.
5) The following is the modification made to the source code.



SYSTEM COMPONENTS

Same components, with the simulation image showing the new message "abc message received: This is task 3".


InstantContiki2.7 - VMware Workstation 17 Player (Non-commercial use only)
Player
Applications Places
en
7:47 PM
Instant Contiki
Task 3 Simulation - Cooja: The Contiki Network Simulator
File Simulation Motes Tools Settings Help
Network
View Zoom
abc message sent: This is task 3
abc message sent: This is task 3
abc message received: This is task 3 'Hello'
abc message sent: This is task 3
abc message sent: This is task 3
abc message received: This is task 3 'Hello'
Simulation control
Run Speed limit
Start
Pause
Step
Reload
Time: 00:14.283
Speed: ---
Notes
Enter notes here
Mote output
File Edit View
Time Mote Message
00:13.528 ID:6 abc message received: This is task 3 'Hello'
00:13.552 ID:3 abc message received: This is task 3 'Hello'
00:13.712 ID:3 abc message sent: This is task 3
00:13.737 ID:2 abc message sent: This is task 3
00:13.742 ID:5 abc message received: This is task 3 'Hello'
00:13.876 ID:4 abc message received: This is task 3 'Hello'
00:13.884 ID:6 abc message sent: This is task 3
00:14.001 ID:4 abc message received: This is task 3 'Hello'
File Edit View Zoom Events Motes
1
2
3
4
[Terminal]
Task 3 Simulation - Co...