

**The LNM Institute of Information Technology, Jaipur**  
**Computer Networks Lab**  
**Lab Assignment 1**

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**Objective:** Introduction to Network Simulator - OMNeT++

**Tasks 1: Installation of OMNeT++**

1. Download the OMNeT++ from below given link or from computer lab website  
<https://www.omnetpp.org/omnetpp>
2. Install of the simulator in your home directory as specified in install guide  
<https://omnetpp.org/doc/omnetpp/InstallGuide.pdf> (refer page 13)

**Tasks 2:**

1. Start OMNeT++ IDE by “omnetpp” command
2. Create your workspace (name “workspace”) in your home directory
3. Switch to your workspace (don’t install “INET framework” and “sample”)
4. Create new “OMNeT++ project” with name “lab1”

**Task 3: Network Simulation**

**1. Network Design:**

- a. Create a computing node (name “node”)
- b. Create a network (name “twoNode”) with two instances of computing nodes

**[Node1]   <-->   [Node2]**

- c. Create message (“packet” type) with four fields: Id, Type of message (Data or Ack), Source Address and Destination Address

**2. Behavioural Design: (Data Transfer)**

- a. Node1 sends a “Data” messages to Node2. Node2 receives this message and sends back “Ack” message to the Node1.

e.g.

	<b>[Node1]</b>	<b>&lt;--&gt;</b>	<b>[Node2]</b>
t1	“Data” --> (send)		
t2			“Data” (receive)
t3			<---“Ack” (send)
t4	“Ack” (receive)		

- b. Node1 sends 10 “Data” messages with id 1 to 10 to Node2. Node2 receives each “Data” message and send back “Ack” message with same id as received “Data” message id to the Node1. After receiving “Ack” message Node1 sends the next message.