

**Jackson State University**  
**Department of Computer Science**  
**CSC 435/CSC 524 Computer Networks, Spring 2020**  
**Instructor: Dr. Natarajan Meghanathan**

**Assignment 3: Simulation using Cisco Packet Tracer**  
**Configuration of VLANs across Multiple Broadcast Domains**

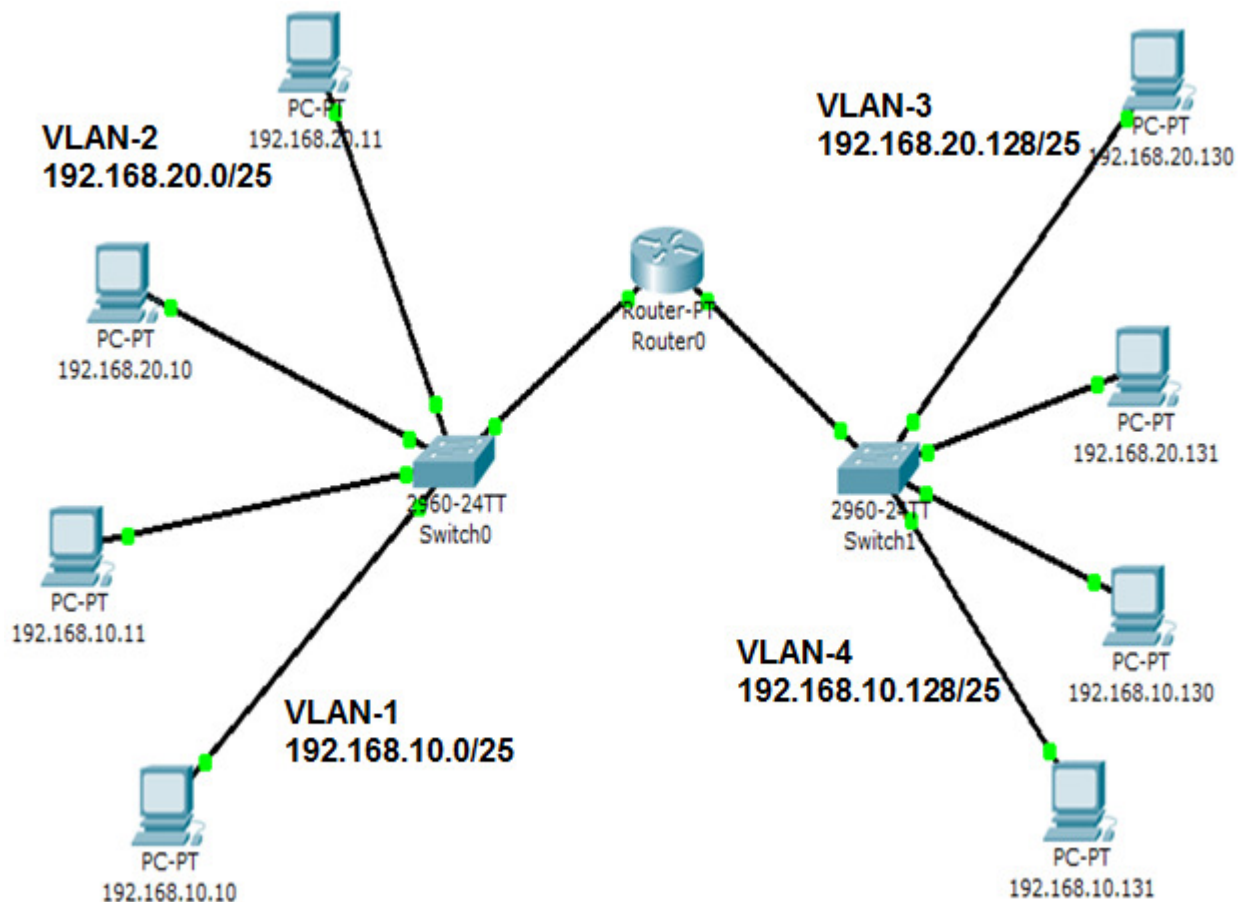
**Due:** March 26th, 2020 by 11.59 PM

**Max. Points:** 100

Link to download Cisco Packet Tracer software:

[http://143.132.8.23/cms/nmeghanathan/docs/PacketTracer533\\_setup.exe](http://143.132.8.23/cms/nmeghanathan/docs/PacketTracer533_setup.exe)

**Assignment Description:** Use the Cisco Packet Tracer software to setup a network of VLANs with multiple broadcast domains, as shown below.



You should record (desktop recording) a video capturing how you setup the entire network of VLANs and configure the PCs, the switches and router to facilitate communication between machines across VLANs (i.e., from one VLAN to another VLAN) as well as within a VLAN. You should specifically record the ping communication between the following machines, as indicated below. Show the results of the tests in both the DOS Window at the sending computer as well as in the simulation mode of the Cisco packet tracer (displaying the transfer of packets). You should record your explanation (i.e., talk clearly) as you demonstrate the setup, configuration and testing of your connections.

**What to Submit:** Record a video/audio presentation (desktop recording) as described above and upload the video to your Google Drive or Dropbox account and share it to natarajan.meghanathan@jsums.edu. In the notification e-mail that you send me, clearly label the subject with: Course #, Assignment # and short title and Semester #.

**Ping Command Communication to Test and Demonstrate in your Recorded Video:**

- |   |   |
|---|---|
| (i) from 192.168.20.10 to 192.168.20.130  | (v) from 192.168.20.130 to 192.168.10.11    |
| (ii) from 192.168.10.131 to 192.168.20.11 | (vi) from 192.168.20.11 to 192.168.10.130   |
| (iii) from 192.168.10.11 to 192.168.10.10 | (vii) from 192.168.20.130 to 192.168.10.131 |
| (iv) from 192.168.10.10 to 192.168.20.131 | (viii) from 192.168.20.10 to 192.168.10.11  |

**Tutorial Videos**

**Click on the following links to open my YouTube recorded videos:**

VLAN Tutorial 1: Basics: One Switch - Multiple VLANs

<http://www.youtube.com/watch?v=2g1Npvtv608>

VLAN Tutorial 2: Communication across VLANs using a Router connected to the Switch (Multiple Cables: One for each VLAN; Inefficient Approach)

<http://www.youtube.com/watch?v=FCuilInh710>

VLAN Tutorial 3: Communication across VLANs using a Router connected to the Switch (Router on a Stick - Trunk Model; Efficient Approach)

<http://www.youtube.com/watch?v=NgaMmqVClq4>

VLAN Tutorial 4: Setting up a DHCP Relay Agent to assign IP Addresses for Machines in a VLAN

<http://www.youtube.com/watch?v=iRBbHjeqUgs>

VLAN Tutorial 5: Communication within a VLAN spread across Switches (Switch to Switch - Trunk Model)

<http://www.youtube.com/watch?v=fFRcDAJEQGs>

VLAN Tutorial 6: Communication between VLANs spread across Switches (using Router)

<http://www.youtube.com/watch?v=WGn0HsKHqIU>