Introduction to ITS332

http://ict.siit.tu.ac.th/~steven/its332/

Who, When and Where?

- Coordinator
  - Dr Steven Gordon

- Teaching Assistants
  - Section 1, Thursday 1pm: Steve (Instructor), James, Apiwat, Siwacha
  - Section 2, Friday 9am: Steve (Instructor), James, Nont
  - Section 3, Tuesday 9am: Ratanachai (Instructor), Powit, Nont
  - Section 4, Tuesday 1pm: Ratanachai (Instructor), Powit, Apiwat, Siwacha

- Room:
  - Networking Lab (IT&MT Building)

- Dates
  - Every week (except holidays)
    - See website

What?

- Networking Tools
  - 'Tools of the trade' – basic software for network administration
- Wireshark
  - How to capture/monitor/view traffic on the network
- Layer 2 Networking
  - How to setup a switched (Ethernet) network
- Layer 3 Networking
  - How to setup a router in a network
- Client/Server Applications
  - Basics of web servers and other client/server application
- Client/Server Programming
  - How to write your own client/server application
- Firewalls
  - How to setup a basic firewall to protect a network

Assessment

- **Lab Tasks (40%)**
  - Attendance, participation, quizzes, reports
- **Client/Server Assignment (20%)**
- **Mid Term Exam (20%)**
- **Final Exam (20%)**

Assessment

- **Attendance: compulsory**

- **Arriving later, playing games, browsing web sites, not completing tasks will result in lower scores for Lab Tasks mark**
  - **Excessive behaviour may mean attendance is not counted**

- **Attend less than 7 labs = Fail (no exceptions)**

Ubuntu Linux

- Username: network
- Password: network

- To run a command as administrator (root/privileged) user, precede the command with sudo
  - Normal mode: ifconfig
  - Privileged mode: sudo ifconfig

- Respect the other users of this lab
  - Do not use the privileges for bad things!
  - Reset the computers/network back to original state
  - Keep the lab clean

Facilities

Layout of ICT Networking Lab , including seat numbers
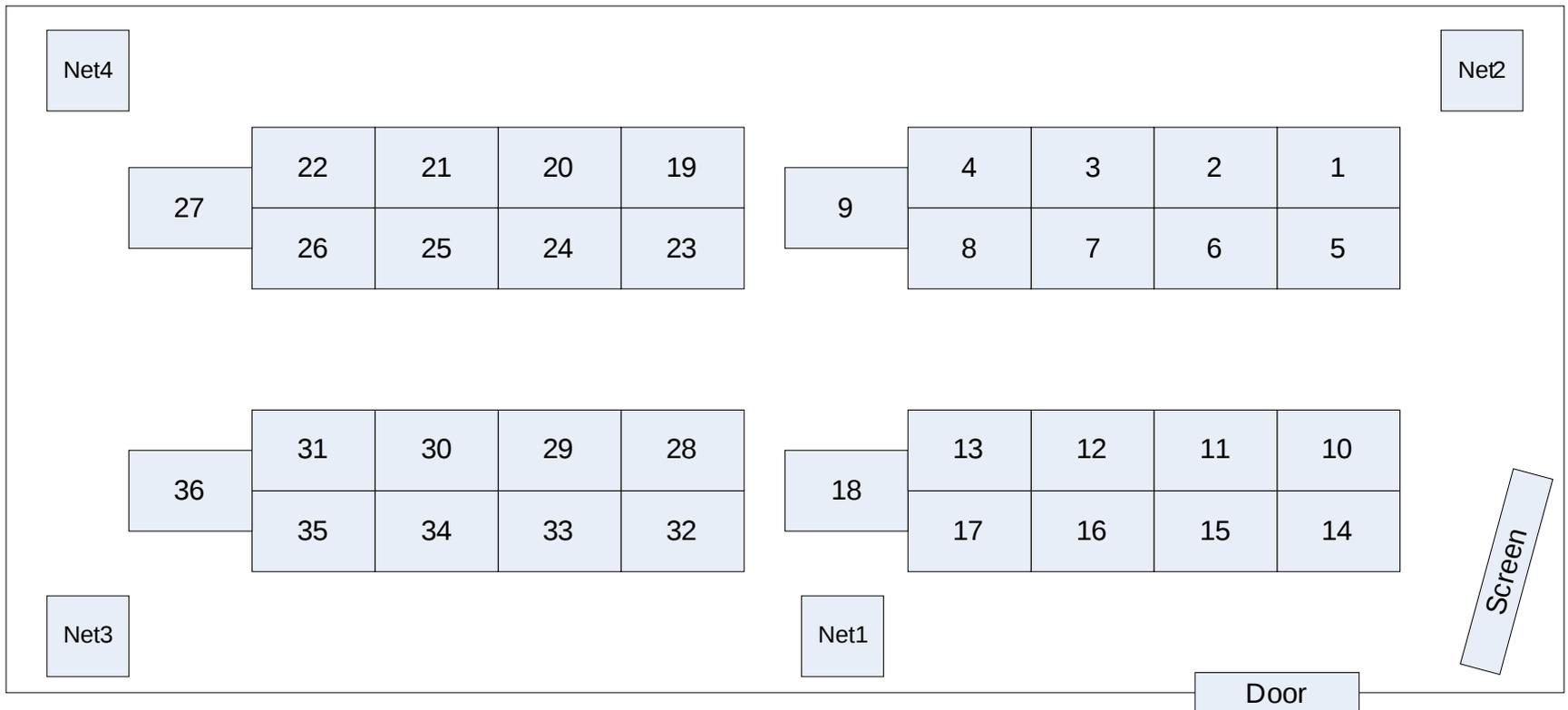
Facilities

- 36 x PCs
  - Ubuntu Linux 9.04
  - Windows XP Pro
  - 2 x Ethernet LAN network interface cards
- 4 x 32-port Cisco Ethernet switches
- 8 x Cisco Routers
- 8 x 8-port 3Com Ethernet switches
- Extra cables

Facilities

To 3rd floor
Network centre

29 U

2 U   Router 2

2 U   Router 1

1 U   Switch

Category 5
Ethernet Cable

Facilities

Switch in SIIT Network Centre

Router 2

Router 1

Switch

Facilities

Networking Lab

... ...

SIIT Bangkadi

Internet
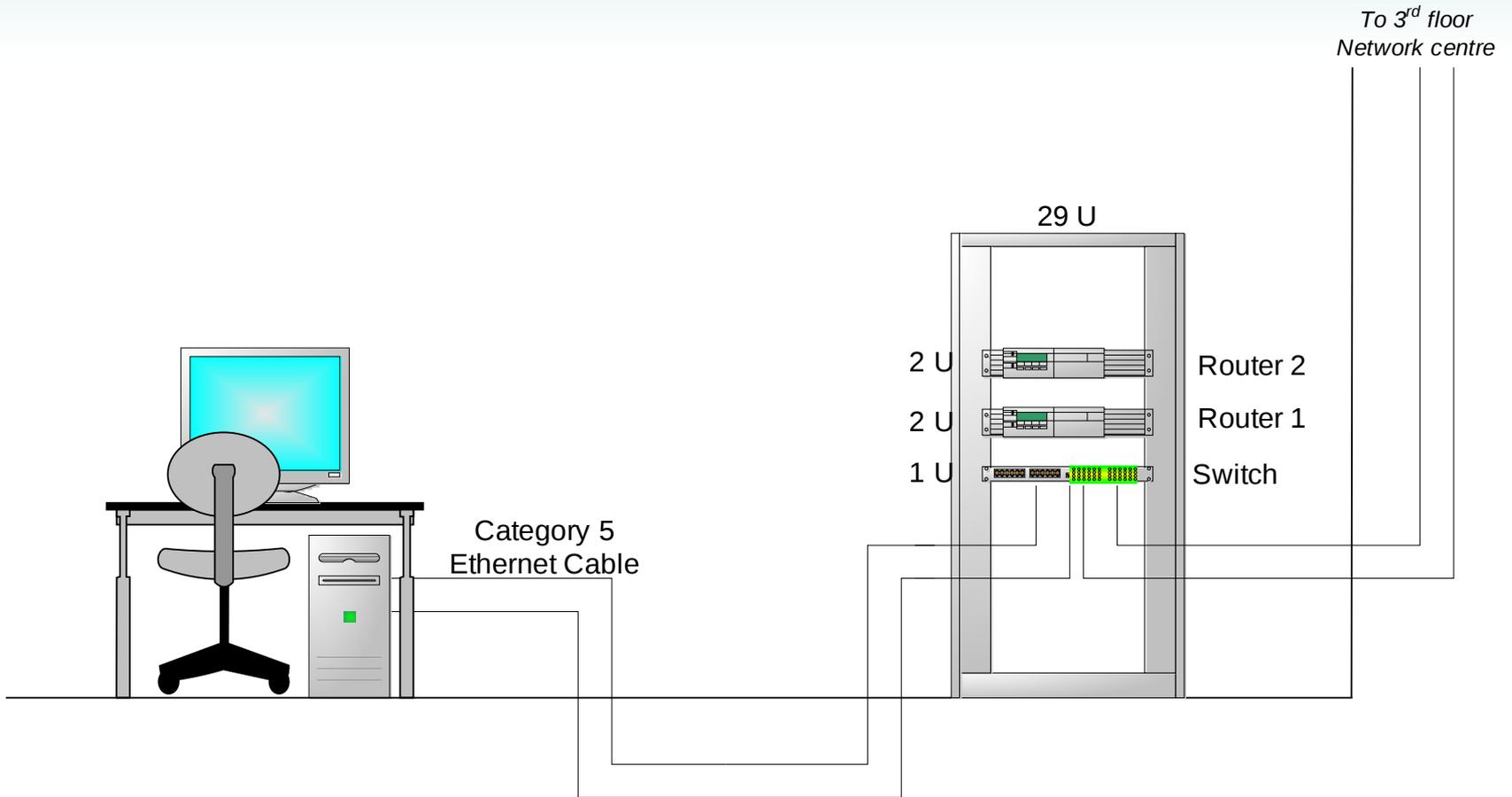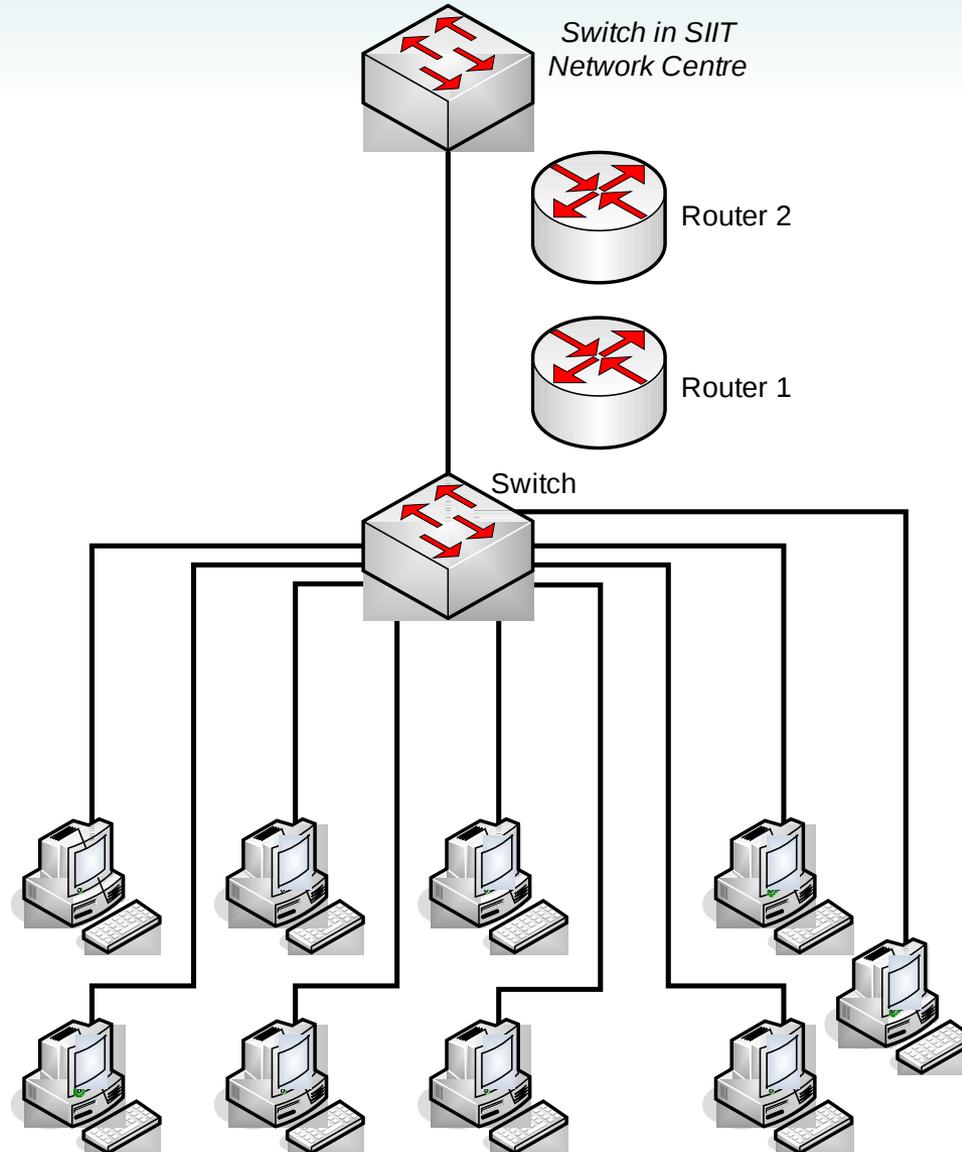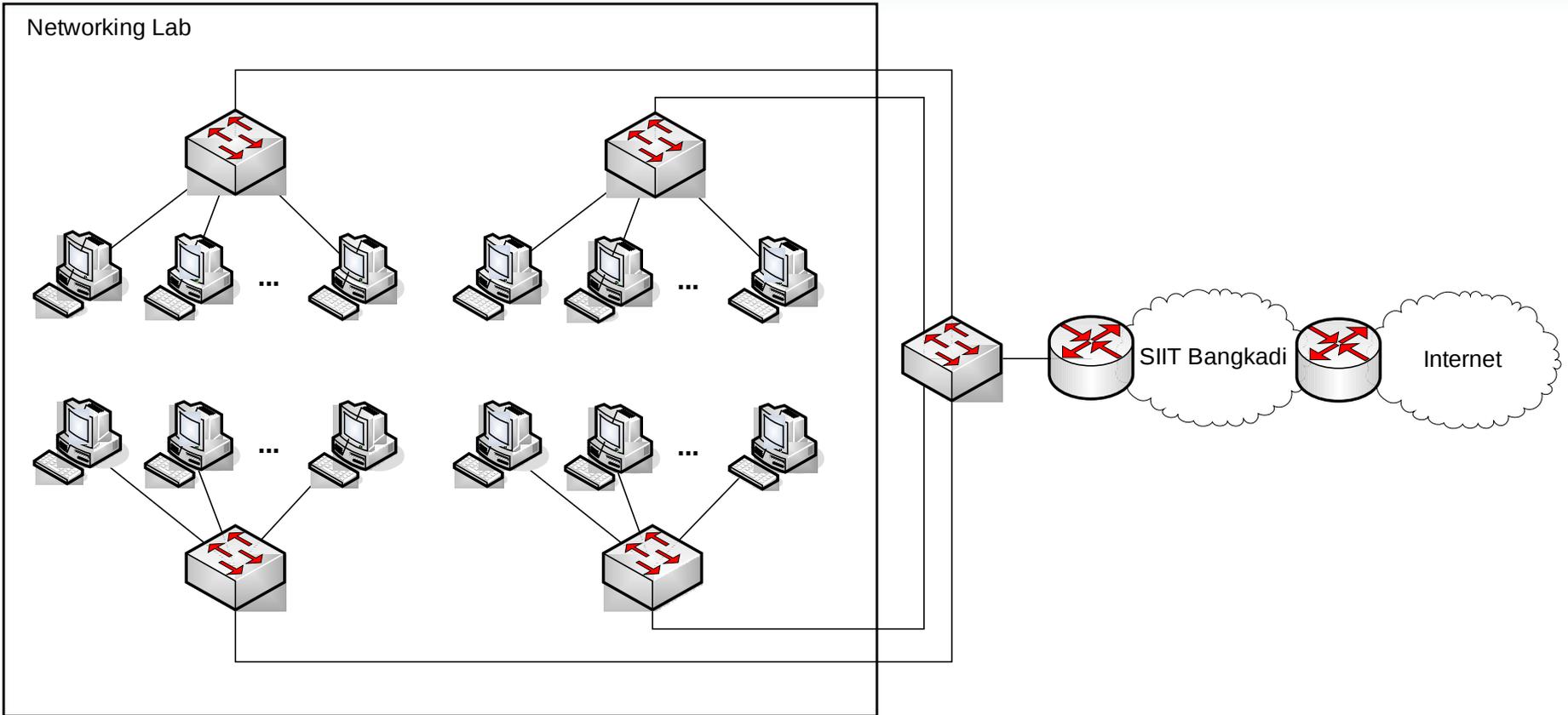
What to Do

- Complete the lab tasks
    - Make sure you understand everything you do
- Record your activities
    - Answer the questions
    - Record what you do/learn in the lab
    - Add notes to your lab manual
- Explore
    - Don't limit yourself to the tasks
- Ask questions
    - Ask yourself: what does this mean? What did I just do? Why did it do that?
    - Ask the TAs

Today's Lab

- Short Introduction to Command Line on Ubuntu Linux
  - cp, rm, cd, nano, ps, grep, pwd, bg, scp, ...
- Networking Tools
  - How to view information about your network interface
    - ifconfig – IP address info., MAC address
    - Route – routing tables
    - arp – mapping from IP to MAC address
    - nslookup – vmapping from domain to IP address
    - netstat – TCP connections, other network statistics
  - Test the network
    - ping – test connectivity, measure the delay
    - tracepath – view the route between two nodes
  - Setting an IP address
    - Manual - ifconfig
    - Automatic - DHCP

SIIT Network

SIIT Bangkadi   ISP   SIIT Rangsit

10.10.10.1   192.168.80.2   192.168.10.1 bridge   ?

Thammasat and other ISPs

10.10.6.1   192.168.72.10   192.168.73.1   192.168.30.3

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