



Cyber Security Initiative for Nevada Teachers (CSINT)

Erhan Erdem • Dr. Shamik Sengupta and Dr. David Feil-Seifer



Professional Development

Goals: Make cyber security part of the school culture and increase cyber security awareness.

Target Audience: Administrators, Teachers, Staff Members, Students.

Agenda:

- Cyber Security 101
- Privacy
- Phishing
- How to resist?
- Password Choice
- Safe technology user habits

Introduction to Computer Network

Target Course: Computer Science 1 and AP Computer Science Principles

Target Audience: High School Students

Lesson Summary: Students will examine basics of computer networking and will learn basic networking terms such as IP, MAC address, DNS, packets, routing.

Class Activities

Activity 1*: Look up your MAC and IP addresses on the computer you are using in class or at home.

Commands:

Mac/Linux : Open up an xterm window and type **ifconfig**

Windows: Open up command prompt and type **ipconfig /all**

```

Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\HP>ipconfig /all

Windows IP Configuration

Host Name . . . . . : HPLaptop
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : latech.edu

Wireless LAN adapter Wireless Network Connection:
Connection-specific DNS Suffix . . . : latech.edu
Description . . . . . : Intel(R) PRO/Wireless 3945ABG Network Con
nection
Physical Address. . . . . : 00-19-D2-7B-4D-FB
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::20c:eb6d:78af:111(Preferred)
IPv4 Address. . . . . : 138.47.156.58(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Monday, July 16, 2012 11:12:34 AM
Lease Expires . . . . . : Monday, July 16, 2012 4:42:35 PM
Default Gateway . . . . . : 138.47.156.1
DHCP Server . . . . . : 138.47.156.1
DHCPv6 Iaid . . . . . : 218110418
DHCPv6 Client DUID. . . . . : 00-01-00-01-12-8A-27-F7-00-18-8B-B9-16-0F

DNS Servers . . . . . : 138.47.18.130
Primary WINS Server . . . . . : 138.47.18.127
Secondary WINS Server . . . . . : 138.47.18.127
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Local Area Connection:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . :
Description . . . . . : Broadcom 440x 10/100 Integrated Controlle

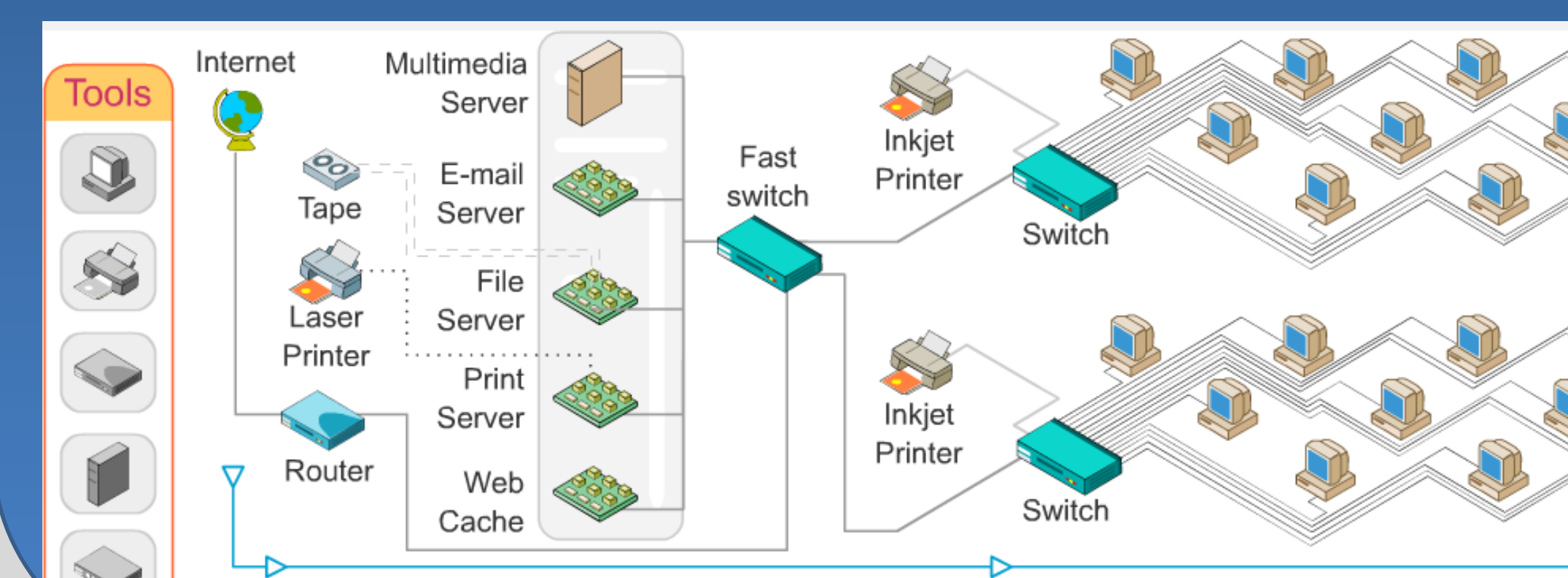
MAC Address IP Address DNS Address
  
```

Activity 2*: Let's Create a student network and pass messages.

Materials:

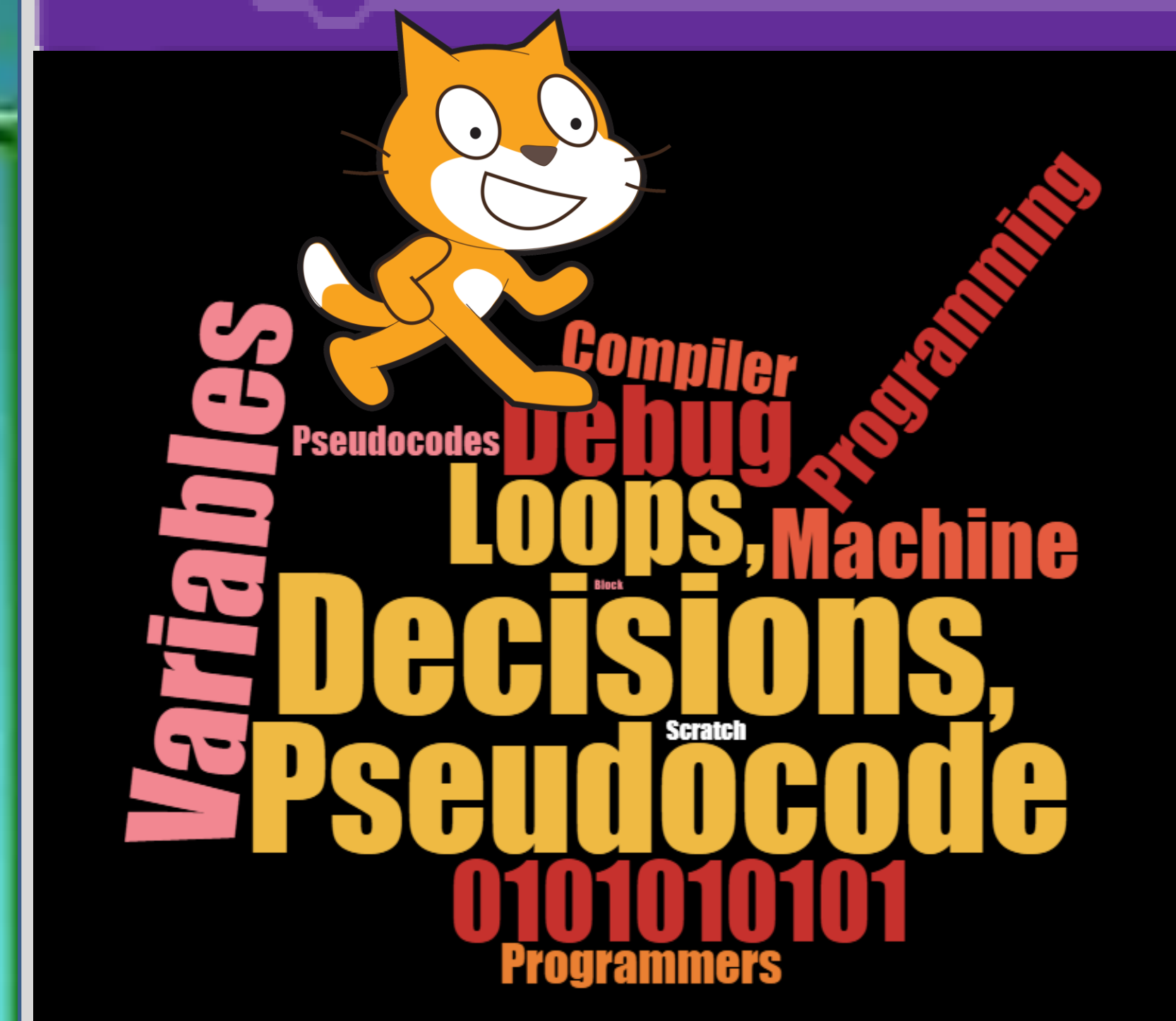


Activity 3: Build your own network. Online Network Simulator http://www.teach-ict.com/gcse_new/networks/hardware/resources/NWB_SIM.swf



Programming with SCRATCH

define At the end of the course students will learn core computing principles and concepts



Resources



Programming with python

Objectives

Students will be introduced to various constructs, operators, and concepts in Python and write programs in Python.

Resources



Assessment Methods

Pre-Assessment Survey/Test/Quiz

E-portfolio & Student Journal

Rubrics

Peer-review Feedbacks

Students' End Products (posters, presentations, animations etc.)

Post-Assessment Survey/Test/Quiz

Activities



There are four major gameplay components of the Lab

Coding Challenge

An introduction to very basic coding skills. Players program a robot to navigate a maze, using drag-and-drop commands

Password-Cracking Challenge

A series of "password duels" teach players the basics of how attackers might try to crack their passwords and how they can make better, more secure passwords.

Social Engineering Challenge

Players are presented with two apparently similar emails or websites

Network Attacks:

As their companies grow, players must buy defenses to defend themselves against a series of cyber attacks.