Write your name below and indicate your role,

Project Manager (PM), Recorder (R)

Name _____ Role _____

Name _____ Role _____

Routers and Redundancy

Your Tasks (Mark these off as you go)

- ☐ Reflect on the Mail Delivery Process
- ☐ Explore the Internet Simulator
- ☐ Read Router Traffic
- ☐ Have Ms. Pluska check off Read Router Traffic
- ☐ Play a Round of Battleship
- ☐ Have Ms. Pluska check off Play a Round of Battleship
- ☐ Reflect
- ☐ Define key Vocabulary
- ☐ Receive credit for the group portion of this lab

☐ Reflect on the Mail Delivery Process

Imagine you were going to send a letter to a friend living in another state. List the steps you imagine your letter would have to take through the different parts of the postal system.
Don't worry if you're not sure about your answers, just make an educated guess. Write your answer it the box below,

☐ Explore the Internet Simulator

Navigate to http://Code.org lesson 10 stage 2

Explore the new version of the Internet Simulator. You've likely noticed that the structure of the messages has changed a little bit to include IP addresses both for you and for the person you are sending the messages to. If you look at the

	To	From	Message
ASCII	13.2	13.8	Hey there!
Binary	1101 0010	1101 1000	01001000 01100101
			96/Infinity bits

network visualization, you can find the IP addresses of your friends on the router. Use the new tool and get comfortable with the updated message format.

Choose two classmates on your router and exchange a short conversation with one another. Make sure your messages are getting through and that you're not sharing any secrets. You'll see why in a second!

☐ Read Router Traffic

Move to the router tab and click the "Log Browser" button to see the network traffic for your router. Then respond to the questions below.

Select the "show all traffic option" and the "show my router" option. How many total messages passed over your router?

[   ]

Select the "show traffic to me" option and the "show my router option". How many messages did you receive? Select the "show traffic from me" option. How many messages did you send?

Received messages:
Sent messages:
Total:

Did all the messages get through?
Why might a message have been "Dropped"?

Select the "show all traffic option" and the "show all routers" option. Can you trace a full conversation between two of your classmates? What types of things are people talking about?

☐ Have Ms. Pluska check off Read Router Traffic

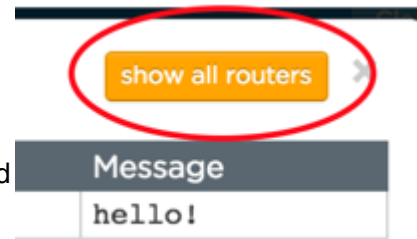Before you continue have Ms. Pluska check off Read Router Traffic

Do not continue until you have Ms. Pluska's (or her designated TA's) signature _____

☐ Play a Round of Battleship

Ask two classmates from different routers to share their IP addresses with you.

Once you have connected with your classmates, play a round of battleship.

Read the traffic. In the same tab as before, click on the "Log Browser" button again. Select the "show all traffic option" and the "show my router" option. How many total messages passed over your router?

Select the "show traffic to me" option and the "show my router option". How many messages did you receive?
Select the "show traffic from me" option. How many messages did you send?

Received messages:
Sent messages:
Total:

Why does your router have so much traffic?!!

Check out the messages you sent to one of your classmates during the battleship game.
Did your messages always take the same path? What do you think this is simulating?

☐ Have Ms. Pluska check off Play a Round of Battleship

Before you continue have Ms. Pluska check off Play a Roundn of Battleship

Do not continue until you have Ms. Pluska's (or her designated TA's) signature _____

☐ Reflect

Based on your experience with the Internet Simulator today, respond to the questions below

Describe the relative benefits of routing over a broadcast style of communication. Is routing traffic more secure than broadcasting? Justify your answer.

Can you know in advance the path a message will take between you and another computer on the Internet? Justify your answer

An Internet service provider (ISP) just purchased all the routers in your area. What types of things is this ISP capable of doing? Are you comfortable with this arrangement?

☐ Define key Vocabulary

Write definitions for the following

Network Redundancy
Router

☐ Receive Credit for the group portion of this lab

- Indicate the names of all group members.
- Have Ms. Pluska check your Number Systems lab.
- Submit your lab to the needs to be graded folder to receive credit for the group portion of this lab.

Do not submit your lab until you have Ms. Pluska's (or her designated TA's) signature _____