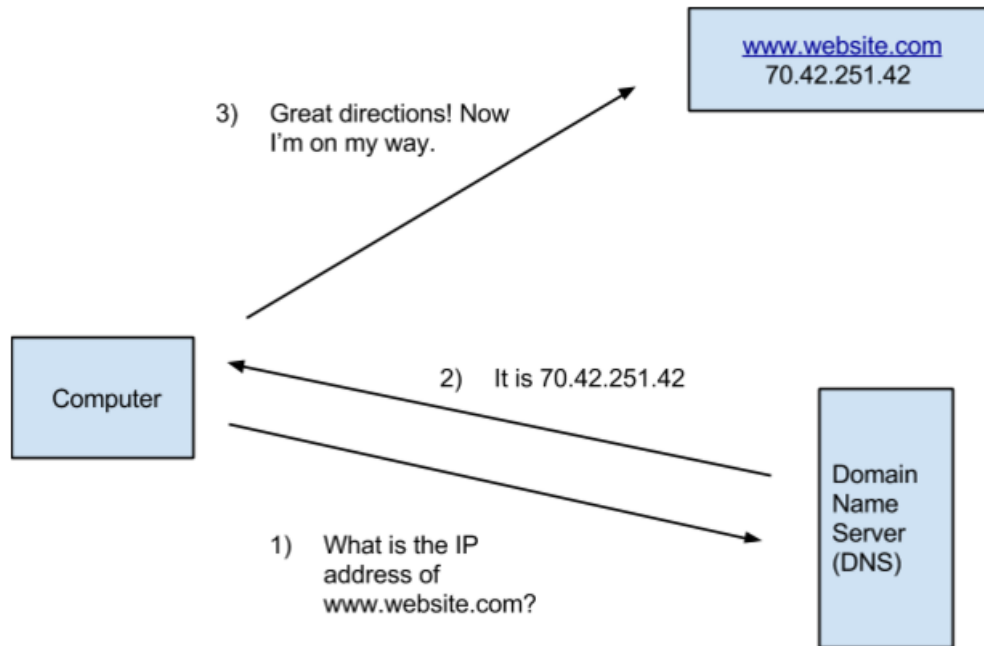


Model 1 How the Internet Works

All devices connected to the Internet are assigned an *IP address* made up of four 8-bit numbers separated by dots (e.g., 173.194.208.139). Some are assigned a *static* (permanent) IP address, whereas others are assigned a *dynamic* (temporary) IP address. Since it's difficult for people to remember numbers, we typically use *domain names* when referring to websites.



Questions (15 min)

Start time: _____

1. Based on the paragraph above:
 - a) How many bits does an IP address have?
 - b) What is the largest possible IP address?
2. Based on the diagram above:
 - a) What is the domain name of the requested server?
 - b) What is the IP address of the requested server?
3. In your own words, what is the function of a DNS server?

4. Give examples of domain names that you use frequently. Name at least two .com, two .org, two .edu, and two of something else.

5. How are domain names an example of an abstraction?

6. List the IP addresses for two of your lab computers and two of your phones. (You can search Google for “IP address” to find them.)

7. Go to TCPIPutils.com and search for your school’s domain name. Scroll down half-way to “Network information”.

a) Identify the range of IP addresses used by your school.

b) Does the university have enough IP addresses for all students, faculty, and staff (and their multiple devices)? Explain your answer.