Home Computer 1
IP Address: 192.168.1.14
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1
DNS Server: 108.35.40.123
John has installed a web server running on port 80. The web site has a "secret" message that reads: "42". John must set up his network so that his friend Mary will be able to access his secret message! As of right now, John has not changed any settings on his router. His router's configuration panel runs through http on port 80.

Home Router 1
LAN IP Address: 192.168.1.1
Subnet Mask: 255.255.255.0
WAN IP Address: 108.35.40.253
Subnet Mask: 255.255.255.0
Its configuration panel is accessible through http on both WAN and LAN IPs on port 80. There are currently no user settings in the port forwarding tables.

DNS Server 1
IP Address: 108.35.40.123
Subnet Mask: 255.255.255.0
Known domains:

- www.google.com on 173.194.75.106
- .com Authoritative Name Server on 65.36.130.12

Google.com
IP Address: 173.194.75.106
Subnet Mask: 255.255.0.0
Google knows everything about everyone in the World! That means that people will be asking it questions.
Things it knows:

- To set up a home server, you should setup your router to do port forwarding from some available port to port 80 on the local machine.

Authoritative Name Server
IP Address: 65.36.130.12
Subnet Mask: 255.0.0.0
It knows about the .com domains. It is aware that:

- www.google.com is on 173.194.75.106
- dyndns.com is on 204.13.248.117

DynDNS.com Server
IP Address: 204.13.248.117
Subnet Mask: 255.255.255.0
It keeps track of subdomains signed up with this service. As of right now, no one signed up. For someone to sign up they need to provide the client's name, desired subdomain (name.dyndns.com) and WAN address. To simplify things, it can also store the desired port.
When someone signs up, the DynDNS.com server contacts Google to let them know about it.

DNS Server 2
IP Address: 155.246.21.80
Subnet Mask: 255.255.255.0
Known domains:

- www.google.com on 173.194.75.106
- .com Authoritative Name Server on 65.36.130.12

Home Computer 2
IP Address: 192.168.1.42
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1
DNS Server: 155.246.21.80
This is Mary's computer. She knows that John has set up a server (or is planning to). Her phone is dead, and she has no way to communicate with John. All she knows is that the server will most likely be set up through DynDNS. Her task is to access John's server and read the secret message.

WAN Router 1
Network 1 IP Address: 108.35.40.200
Subnet Mask: 255.255.255.0
Network 2 IP Address: 65.142.242.42
Subnet Mask: 255.0.0.0
It has to direct traffic the fastest possible way. Using the information it gathers, it has to make the best possible decision.
It should keep routing tables of any devices it discovers on the network.

Home Router 2
LAN IP Address: 192.168.1.1
Subnet Mask: 255.255.255.0
WAN IP Address: 155.246.21.30
Subnet Mask: 255.255.255.0
Its configuration panel is accessible through http on both WAN and LAN IPs on port 80. There are currently no user settings in the port forwarding tables.

WAN Router 2
Network 1 IP Address: 108.35.40.222
Subnet Mask: 255.255.255.0
Network 2 IP Address: 204.13.248.12
Subnet Mask: 255.255.255.0
It has to direct traffic the fastest possible way. Using the information it gathers, it has to make the best possible decision.
It should keep routing tables of any devices it discovers on the network.

WAN Router 3
Network 1 IP Address: 173.194.12.66
Subnet Mask: 255.255.0.0
Network 2 IP Address: 204.13.248.34
Subnet Mask: 255.255.255.0

It has to direct traffic the fastest possible way. Using the information it gathers, it has to make the best possible decision.
It should keep routing tables of any devices it discovers on the network.

WAN Router 4
Network 1 IP Address: 155.246.21.13
Subnet Mask: 255.255.255.0
Network 2 IP Address: 65.253.42.68
Subnet Mask: 255.0.0.0
It has to direct traffic the fastest possible way. Using the information it gathers, it has to make the best possible decision.
It should keep routing tables of any devices it discovers on the network.

WAN Router 5
Network 1 IP Address: 173.194.42.5
Subnet Mask: 255.255.0.0
Network 2 IP Address: 155.246.21.1
Subnet Mask: 255.255.255.0
It has to direct traffic the fastest possible way. Using the information it gathers, it has to make the best possible decision.
It should keep routing tables of any devices it discovers on the network.