**Domain Names and ICANN**

The internet as we know it today, and oftentimes referred to as the world wide web, was invented by Tim Berners-Lee. While inter-computer and inter-network communication already existed thanks to the ARPANET, Berners-Lee dreamt up HTTP (Hypertext Transfer Protocol) communication across the internet. Berners-Lee also founded and is still the current director of the W3C (World Wide Web Consortium). Both of which will be discussed in greater detail in later sections.

The innovation that Berners-Lee brought to the forefront, was simplicity and ease of access. As we will go into detail later, HTTP is the language that is used for communication between web browsers and DNS (domain name servers). These domain name servers will also be described in greater detail later, but they are extremely important to making the internet as we know it accessible. They are so important that there is a regulatory group specifically in charge of managing domain namespaces as well as their databases. This regulatory group is known as ICANN (Internet Corporation for Assigned Names and Numbers)

ICANN “coordinates the allocation and assignment of names in the root zone of the Domain Name System (**DNS**) and coordinates the development and implementation of policies concerning the registration of second-level domain names” (ICANN.org). Put in similar terms, the ICANN is responsible for allocating and maintaining the name spaces for the internet. This is both the “website name” (i.e. Facebook, Amazon, Google, etc.) as it is referred to by many people as well as the “dot com” segment.

The “dot com” segments can more accurately be called top-level domains. The most generic of these is “com”, but several others exist. “Com” was initially used in order to be the commercial top-level domain, but it has since become the generic one to use. There is also .gov for government and it’s agencies, .mil for US military use, .edu for educational use (mainly colleges and universities), and then .org and .net for additional “generic” top level domains.

The domain names listed above are by no means exhaustive and several other have been added and maintained by ICANN. This can be international and country specific codes like .uk, .fr, .de, etc. as well as even some city specific domains like .tokyo, .london, .nyc, etc. ICANN has also expanded and allowed for the use of several other generic top level domains in the form of domains like .xyz, .online, and several others that can be seen below.





**IP Address, Packets, and Routing**