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The internet is a vast and complex system, with millions of computers and devices connected to it.   
  
But how do these devices find each other?   
  
How do you know that when you type "[www.cloudairy.com](http://www.cloudairy.com/)

” into your web browser, you'll be taken to the right place?  
  
The Domain Name System (DNS) is the answer to these questions. DNS is a hierarchical naming system that translates human-readable domain names into machine-readable IP addresses. This allows us to use easy-to-remember names like "[www.cloudairy.com](http://www.cloudairy.com/)

” instead of having to remember long strings of numbers.   
  
DNS is essential for the internet to function, and it helps to make the internet more secure.  
  
But how does DNS work? Let's understand this with an example!   
  
When you type a domain name into your web browser, such as " [www.cloudairy.com](http://www.cloudairy.com/)

”, your computer sends a DNS query to a DNS resolver.   
The resolver then queries a series of DNS servers, starting with the root servers, to find the IP address associated with the domain name.  
  
The resolver checks its local cache to see if the IP address for the requested domain is already stored. If it finds a match, the process is complete, and the IP address is used.  
  
If the resolver doesn't have the IP address in its cache, it initiates a recursive query to find the IP address. It sends the query to a DNS root server.  
  
The root servers are the highest level in the DNS hierarchy. They contain the IP addresses of the top-level domain (TLD) servers, such as .com, .org, and .net. The TLD servers then point to the nameservers for specific domains.  
The nameservers store the IP addresses for all of the hosts within a domain.   
  
When the resolver receives the IP address from the nameserver, it returns it to your computer, which then connects to the host.  
  
Resource records (RRs) are the data structures that are stored in DNS servers. There are many different types of RRs, but some of the most common ones are A records (which store IPv4 addresses), AAAA records (which store IPv6 addresses), MX records (which store mail servers), and CNAME records (which store aliases).  
  
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