* **What is HTTP ?**
  + HTTP is short for Hypertext Transfer Protocol and is an application protocol used by the World Wide Web. It decides how messages are transmitted and formatted and how servers and browsers should react to commands like entering a URL.
* **What does URL mean?**
  + URL stands for Uniform Resource Locator, and refers to a unique address used to access a web page.
* **How many parts has a URL? Name them and describe them.**
  + At its most basic, a URL has three basic parts, the protocol, the domain name, and the path. The protocol, the first element usually seen as something like ‘http://’, decides how your browser communicates with a server. Some common protocols include Hypertext Transfer Protocol (HTTP), Hypertext Transfer Protocol Secure (HTTPS) and File Transfer Protocol (FTP). The domain name is a reference to a specific website like ‘google’ or ‘facebook’, and includes the Top Level Domain (TLD), like .com, .co, or .edu. The third part is the path, which points to a specific file or directory on a web server like ‘google.com/maps’.
* **What is a port number? What is the default one that all webs usually use.**
  + A port number identifies the senders and receivers of a message on the internet, and the default number is 80.
* **What is a query string?**
  + A query string is part of the URL that recovers specific information from a database, usually beginning with a question mark.
* **What is a fragment?**
  + A fragment is an internal page reference found at the end of a URL and starting with a #, referring to a section within a web page; for example, a specific paragraph in a long-form internet article.
* **Describe a simple HTTP transaction and it's parts.**
  + A simple HTTP transaction consists of DNS Lookup, where the client tries to resolve the domain name for the request, Connect, where the client establishes a TCP connection with the IP address of the desired address, Send, where the Client sends the HTTP request to the web server, Wait, where the client waits for the server to respond to the request, Load, where the client loads the content of the response, and Close, where the client sends a FIN packet to close the TCP connection.
* **Enumerate all the HTTP Request Methods with their purposes**
  + GET is used to retrieve information from the given server, a POST request is used to send data to the server, HEAD does the same as GET but returns only HTTP headers and no document body, DELETE deletes the specified resource, OPTIONS returns the HTTP methods that the server supports, and CONNECT converts the request connection to a transparent TCP/IP tunnel.
* **What are the safe HTTP methods?**
  + The safe HTTP methods are OPTIONS, GET, and HEAD.
* **What are the parts of an HTTP request message?**
  + The parts of an HTTP request message are a method, path, header, body
* **Describe the following headers: Referer, User-Agent, Accept, Accept-Language, Cookie, If-Modified-Since**
  + Referer: Address of the previous web page that brought the user to the current page
  + User-Agent: Contains info about the user agent originating the request
  + Accept: The content-types acceptable for the server’s response
  + Accept-Language: Acceptable human languages for response
  + Cookie: HTTP cookie previously sent by the server to remember user status
  + If-Modified-Since: Used with a method to make it conditional, if the variant hasn’t been modified, a 304 response will be returned
* **What are the parts of an HTTP response message?**
  + The parts of a response message are the status code, date, server, last modified, eTag, content type, content length, accept ranges, and connection
* **Which category does each range of HTTP status code belong to?**
  + 1xx: Request was received, server is continuing the process
  + 2xx: Successful result
  + 3xx: Redirection: further action must be taken on the server’s end
  + 4xx: The client’s request could not be understood
  + 5xx: The server failed to serve a valid request
* **Make a list of the most common status codes with a little description of each of them.**
  + 200: Good status, everything was successful.
  + 400: User’s browser sent a request the server could not understand
  + 401: Server requires user authentication for the request being made
  + 403: Access to the resource being requested is forbidden
  + 404: The resource being requested by the browser was not found
  + 500: Internal server error, a general problem that cannot be specified
  + 503: Server cannot handle the request due to overload or maintenance being performed on server
  + 504: A server is acting as a gateway to fulfill the browser’s request and did not receive a timely response from an upstream server it accessed to deal with the request.