Description

- Write an HTTP parser in C++ to parse an HTTP response status line and headers.
- The detailed HTTP message format is described here: https://datatracker.ietf.org/doc/html/rfc7230#section-3; but for the purpose of this parser, we will assume a simplified format as described below:
    - Each line in the HTTP response should be terminated with a CR LF sequence
    - The HTTP response will begin with a status line, followed by zero or more header lines
    - A status line consists of the HTTP version, status code, and reason phrase, each separated by a space
        - The HTTP version is the case-sensitive string "HTTP/" followed by a major and minor version (e.g. HTTP/1.1)
        - The status code is a 3 digit numeric code
        - The reason phrase is a string describing the status code
    - A header line consists of a header name, followed by ": ", followed by the header value
        - A header name can contain any letter, digit, and the character "-"
        - A header value can contain any visible/printable ASCII character
- The input would be a contiguous buffer of data with the header part of an HTTP response. The parser should extract the HTTP version and status code from the status line, and parse each header line to determine if the header is valid according to the rules described above.
- The parser should store the valid headers, and provide a way to look up a header value by name.
- The parser should output the HTTP version and status code, as well as the number of valid and invalid headers. If the response does not have a valid status line, then the parser can output an error message and abort parsing.

Examples

Test Case	Output
HTTP/1.0 200 OK cache-control: public content-length: 0 content-type: image/svg+xml date: Tue, 22 Jun 2021 22:24:42 GMT	HTTP version: 1.0 Status: 200 Number of valid headers: 4 Number of invalid headers: 0
HTTP/1.1 302 Found cache-control: public Transfer-encoding: chunked invalid_header date: Tue, 22 Jun 2021 22:24:42 GMT	HTTP version: 1.1 Status: 302 Number of valid headers: 3 Number of invalid headers: 1
Header1: value1 date: Tue, 22 Jun 2021 22:24:42 GMT content-length: 1337	Invalid status line

Notes

- The code should compile and run fine - feel free to use features of modern C++ in your solution
- Please add any assumptions made as comments in the code
- Adding unit tests would be preferable if time permits
- For coding and sharing the project you can use either github and share a link, or just send a zipped copy to us before the deadline (2 days before the technical interview)