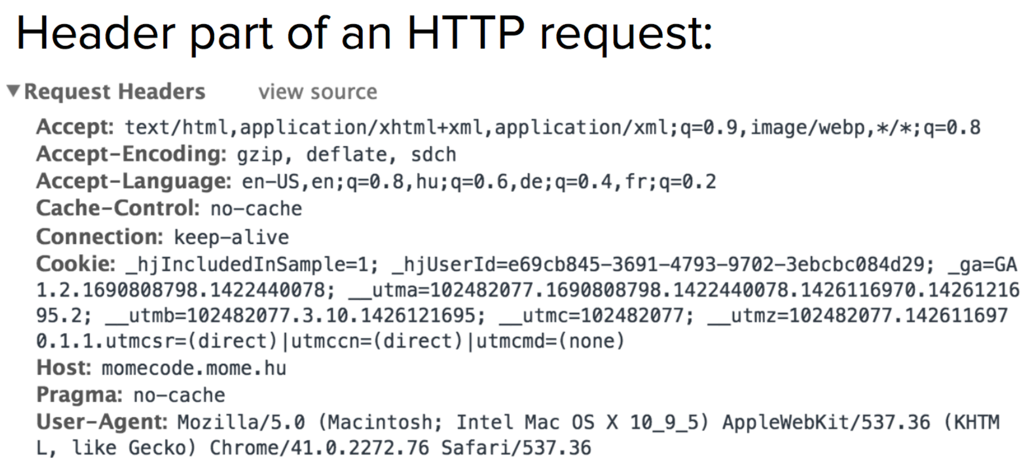
Foundation - Week 1

- [x] ~~get a simple quick note app~~
- [x] ~~don't forget to /checkout on Slack~~
- [x] ~~hand in NAV form for TB~~
- [x] ~~demo idea: make a prez about the uniq sort issue with solution (tee command)~~

Internet and HTML Workshop



Header part of an HTTP request:

▼Request Headers   view source

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Encoding: gzip, deflate, sdch
Accept-Language: en-US,en;q=0.8,hu;q=0.6,de;q=0.4,fr;q=0.2
Cache-Control: no-cache
Connection: keep-alive
Cookie: _hjIncludedInSample=1; _hjUserId=e69cb845-3691-4793-9702-3ebcbc084d29; _ga=GA
1.2.1690808798.1422440078; __utma=102482077.1690808798.1422440078.1426116970.14261216
95.2; __utmb=102482077.3.10.1426121695; __utmc=102482077; __utmz=102482077.142611697
0.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none)
Host: momecode.mome.hu
Pragma: no-cache
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_5) AppleWebKit/537.36 (KHTM
L, like Gecko) Chrome/41.0.2272.76 Safari/537.36
```

HTTP get and post request

- get request - get some data from the server, i.e. download a website
- post request - i.e. add a comment

HTTP Status codes

- 200 - OK, this is something you do not really see
- 404 - not found
- https://http.cat - HTTP status codes with cats

- r-click, view source on a website

_SO?

- ➔ the DNS tells us where to go:
  the server's ip address
- ➔ We send an HTTP request to the server
- ➔ The server packages the asked static HTML file to an HTTP response
- ➔ The browser renders the given HTML file and starts other requests for the necessary files
- ➔ done!

Homework for Wednesday

Linux command line commands video - basically the same as in the preparational phase

Git Crash Course

- VCS - version control system

    - Git is a decentralized VCS, meaning that it is not located in one place
- Git takes "snapshots" of your files, stores the different versions of them
    - "Commit" means you are taking a snapshot

Basic commands

- git init - initialize local repository - will create a .git file in your project dir
- git add filename - add file to git index
- git status - check status of working tree - will alert if there are uncommitted changes to the file
- git commit - commit changes in git index, will open editor, where we can enter a commit message, this can be skipped by adding the -m "Comment here" attribute
- git pull - pull latest change from remote repo
- git clone url directoryToClone - clone remote repo to a local dir
- git config - - global user.name - add your name and user.email address to git
- git rm - - cached filename - remove file from index
- git add . - will add every file from dir to index
- .gitignore contains all files and dirs that should not be included to the index
- git reset - removes all currently added files from index
- git log - logs recent commits
- git remote -v - shows origin and local repo(?)
- git diff - shows changes that were made to the files
- git pull - pulls latest version from remote repo
- git push - pushes latest version from local repo to remote
- git branch - list branches or create a new branch
- git checkout branchName - switches to branch
- git add means you are "staging" the files, while commit means the changed have been saved to a new git version:
- "bag metaphor"

Internet Basics

HTTP request types

- CRUD
  - Create - Post request
  - Read - Get request
  - Update - Put request
  - Delete - Delete request

HTTP status codes

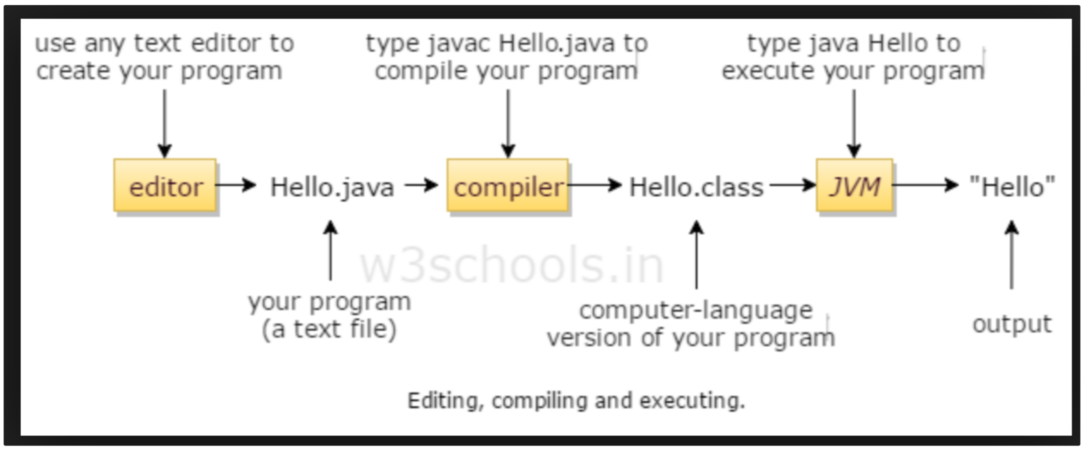
- 2** - everything's okay
- 4** - client messed up sg.
- 5** - server messed up sg.

Internet Security

- SSL - every website needs certificates to be able to use HTTPS
  - there are different levels of SSL certificates, so HTTPS does not necessarily mean it's secure

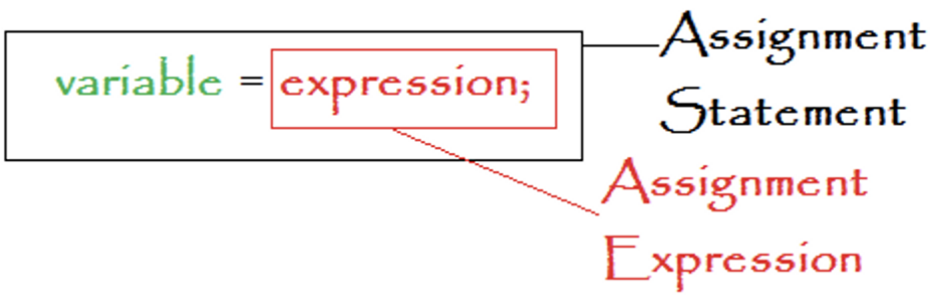
Java

- Object-oriented language
- was created in the 90's
- it's a language that needs to be compiled before it can be run
- Program is run by the JVM (Java Virtual Machine), this allows Java to be cross-platform


use any text editor to create your program
type javac Hello.java to compile your program
type java Hello to execute your program
editor
Hello.java
compiler
Hello.class
JVM
"Hello"
your program (a text file)
computer-language version of your program
output
w3schools.in
Editing, compiling and executing.

Expressions vs Statements

- statement: Statements are roughly equivalent to sentences in natural languages. A statement forms a complete unit of execution.
- expression: An expression is a construct made up of variables, operators, and method invocations, which are constructed according to the syntax of the language, that evaluates to a single value.



Ternary condition

The term `ternary` comes from a Latin word that means "composed of three parts".

These three parts are:

1. A Boolean expression
2. A single statement that gets executed if the Boolean expression is true
3. A single statement that gets executed if the Boolean expression is false

Here is an example of a ternary conditional statement:

```
int fuelLevel = 3; char canDrive = (fuelLevel > 0) ? 'Y' :
'N'; System.out.println(canDrive);
```

Java/C/C++/C#

Switch Statement

Java also provides a way to execute code blocks based on whether a block is equal to a specific value. For those specific cases, we can use the `switch` statement, which helps keep code organized and less wordy.

The switch statement is used as follows:

```
int restaurantRating = 3; switch (restaurantRating) { case 1:
System.out.println("This restaurant is not my favorite.");
break; case 2: System.out.println("This restaurant is good.");
break; case 3: System.out.println("This restaurant is
fantastic!"); break; default: System.out.println("I've never
dined at this restaurant."); break; }
```

JavaScript

The `break` statement will exit the `switch` statement after a condition is met. Without the `break`statement, Java will continue to check whether the value of `restaurantRating` matches any other cases.

The `default` case is printed only if `restaurantRating` is not equal to an `int` with the value of `1`, `2`, or `3`.