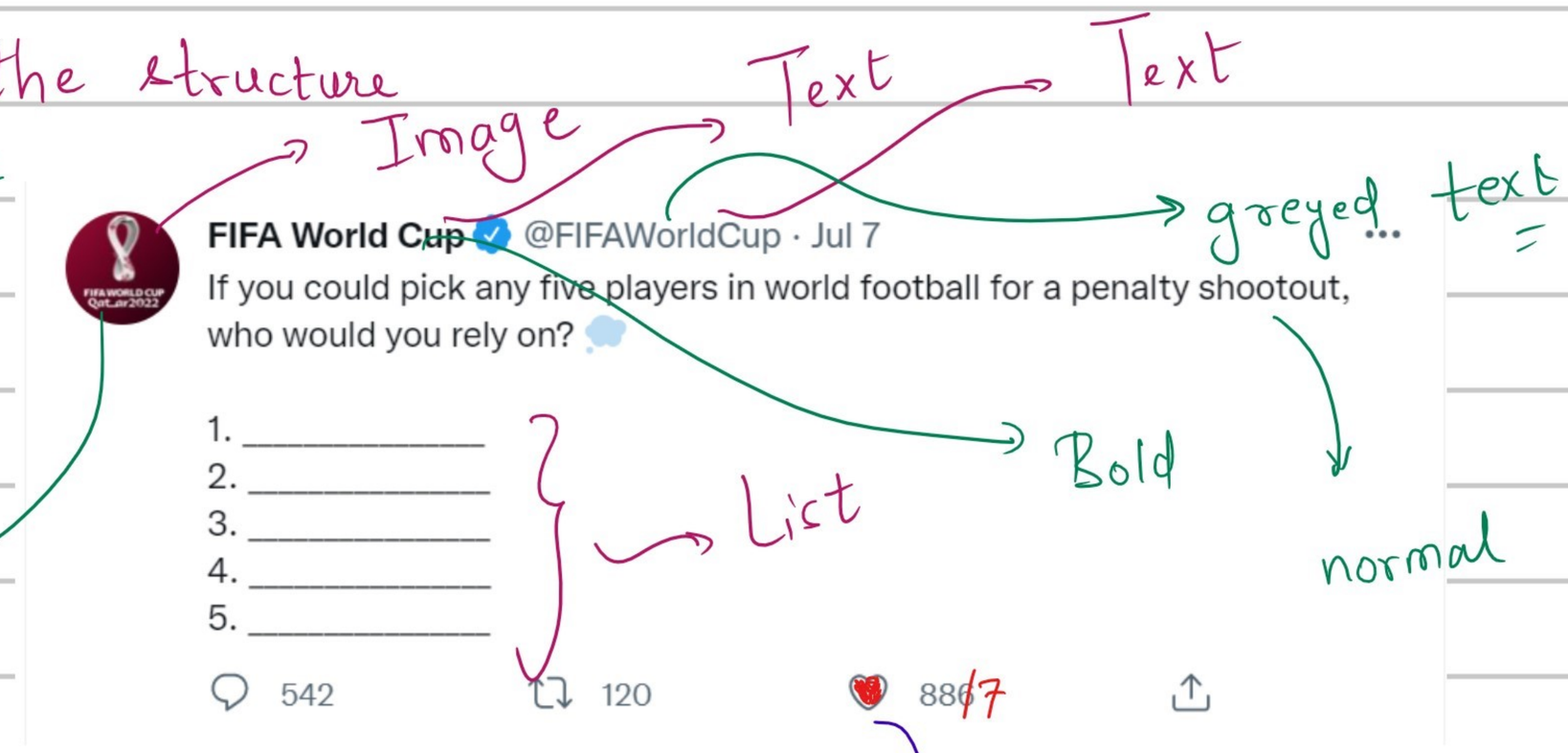
HTML, CSS & Bootstrap

Learning Path

HTML → create the structure

CSS → style the structure

JS → actions



HTML → Hyper Text Markup Language → Markup Language

CSS → Cascading Style Sheet → Styling Language

JS → JavaScript → Programming Language

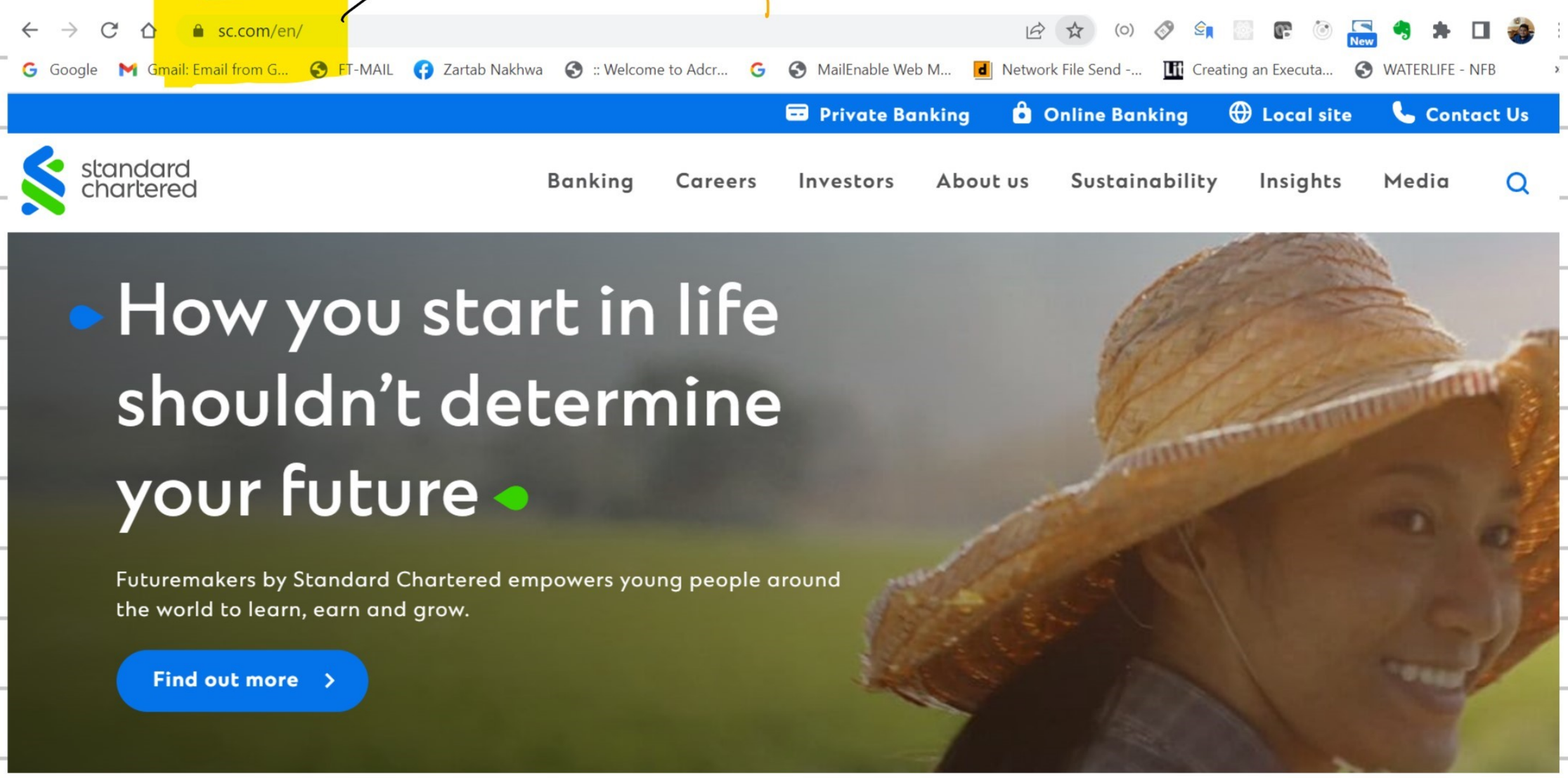
IHU → I Have Understood

RM → Revive Me

How Web Works?

Makes a request for a resource

URL → Uniform Resource Locator



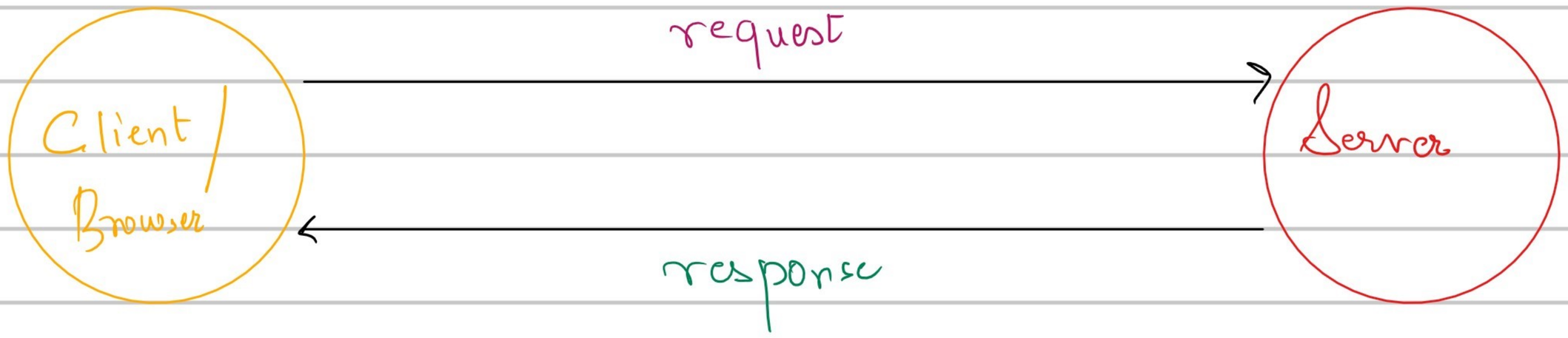
Structure Of URL

protocol used for communication

https://www.sc.com/resource

Unique address for a website

html
image
video
font
folder
css
js

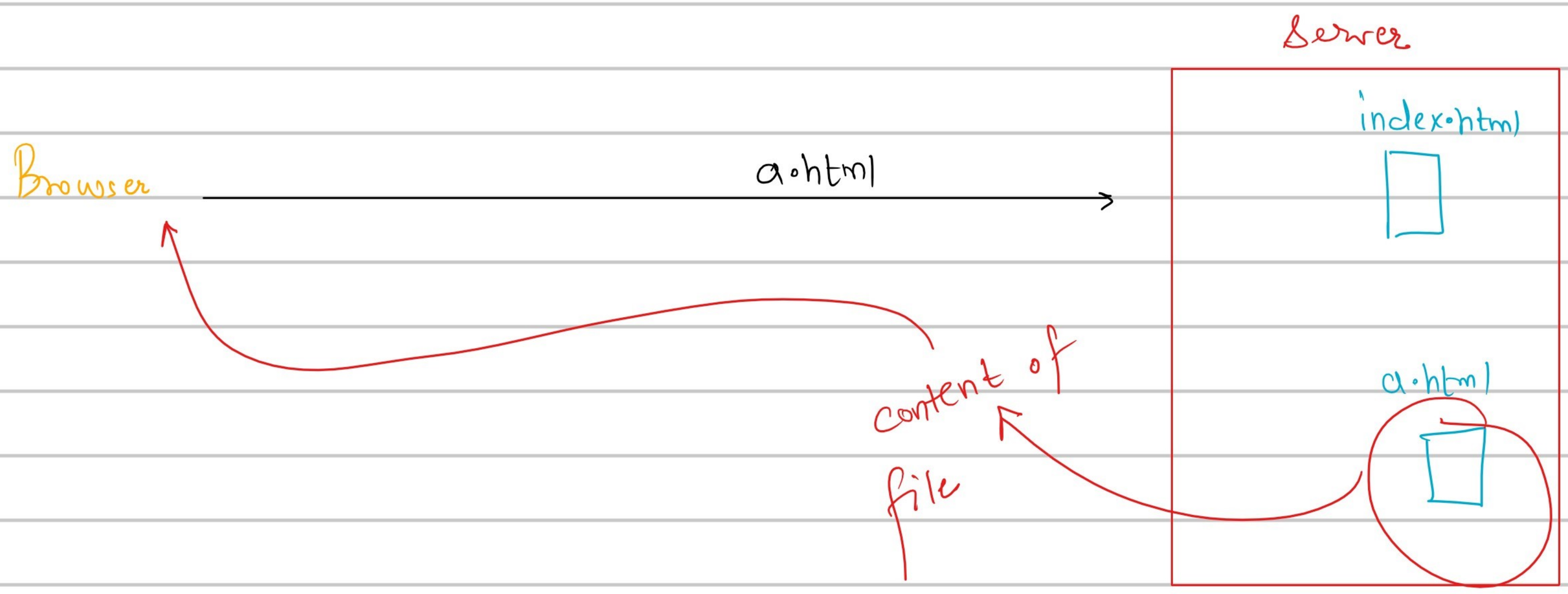


HTTP

Hyper Text Transfer Protocol

HTTPS

HTTP + Encryption



HTTP REQUEST

GET
POST

GET /index.html HTTP/1.1

resource

under what protocol

HOST: www.xc.com

from where

Accept Language: en-us

language

HTTP RESPONSE

HTTP/1.1 200 OK

RESPONSE STATUS CODE

Date: 1 Jan 2022 10:00

Timestamp

Content-type: text/html

MIME

<DOCTYPE ---->
<HTML>
</HTML>

HTML Content

▽ → space

HTML

<tag ▽ attribute = value ▽ attribute = value>

children

</tag>

Self Closing

<tag />

<html>

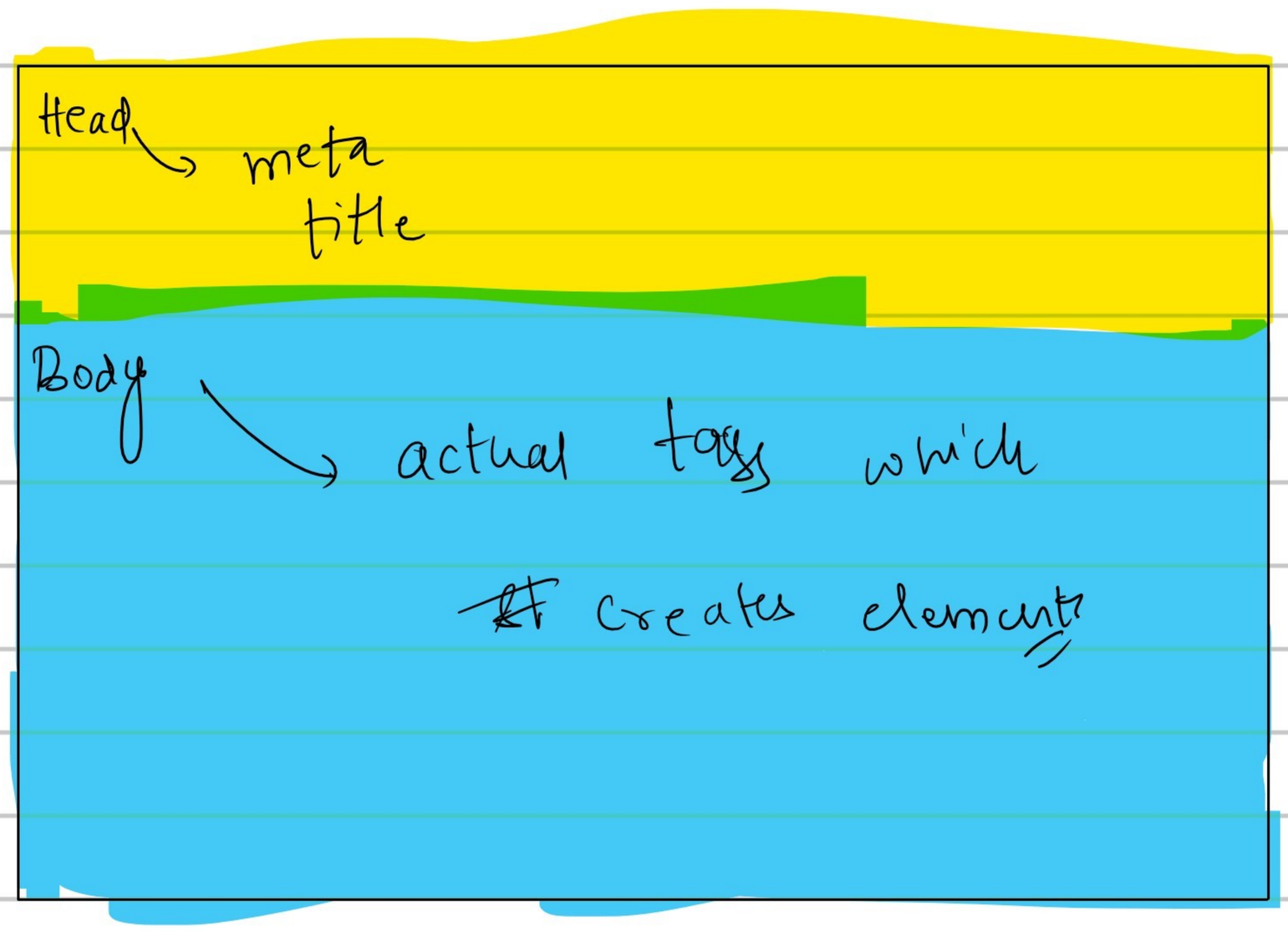
<head>

</head>

<body>

</body>

</html>



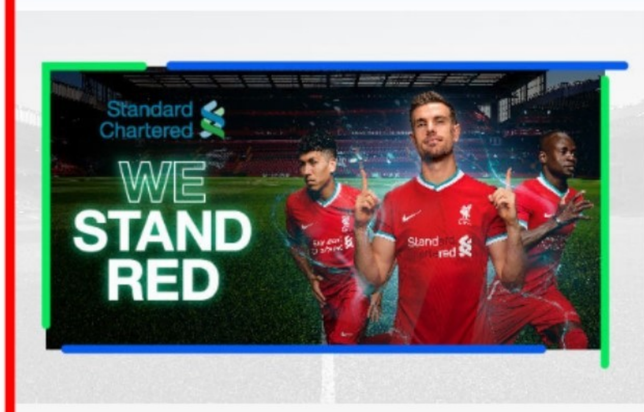
HTML Page

containing

Be fraud alert

We are aware of a number of scams and attempted frauds, including by companies posing as us, or individuals impersonating our staff

Read more >



Live Red, Breathe Red, Stand Red

Standard Chartered has been the Main Sponsor of Liverpool FC since 2010. Join us as we create a host of unique experiences for our clients around the world

#StandRed >

SC Ventures reports first quarter as separate segment

With the recent release of the bank's financial results, SC Ventures reports first quarter out as a separate segment.

Learn more >

div

Block Element

Inline Element

span

block element

span & style seperately

in line element

table

thead

row → <tr>

<th>

id	name	age	gender
1 → <td>	Tom	25	M
2	Alex	26	M
3	mike	27	M

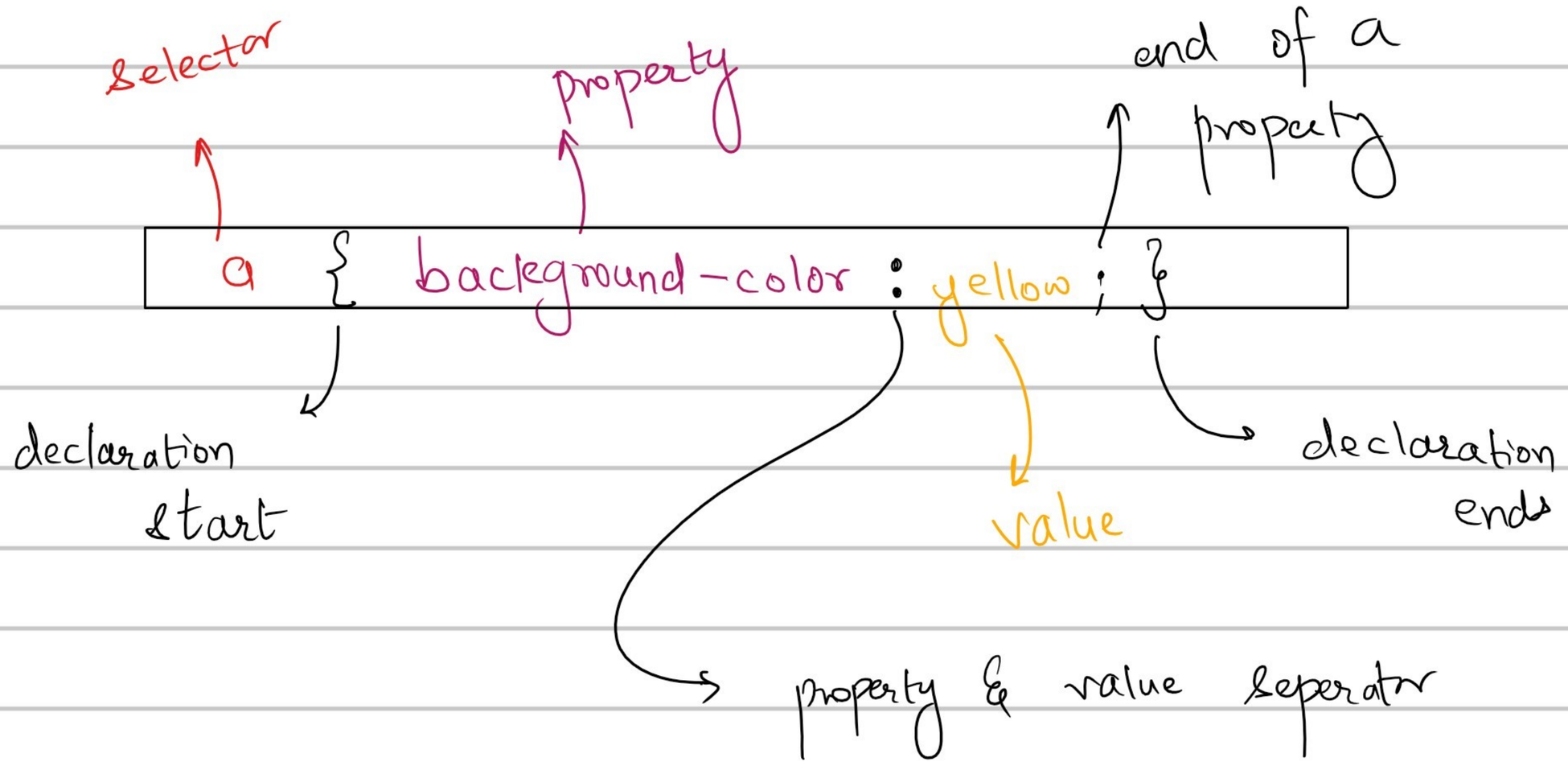
tbody

CSS

↳ Cascading Style Sheet

→ it is not a programming
→ it is a styling language
→ layouts & designing

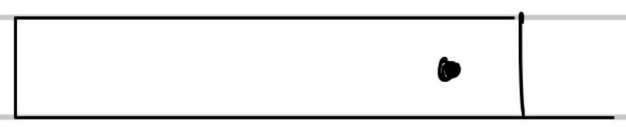
CSS Selectors



CSS can be used in 3 ways.

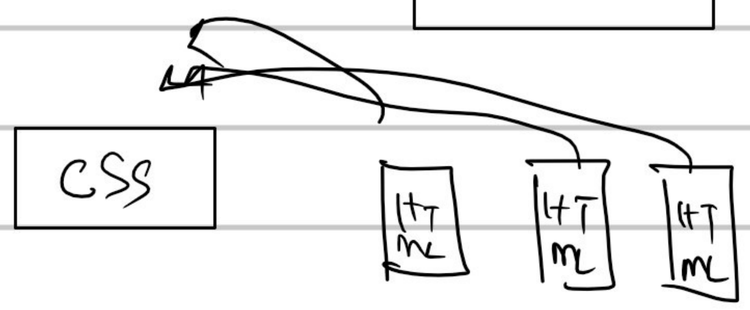
① Inline CSS → directly applied inside the style attribute of HTML element

↳ NO!!



② Internal CSS → use the <style> tag for CSS

③ External CSS → link an html to CSS file



CSS Selectors

1. Tag
2. Id
3. Class
4. Attribute
5. Wild card Selector.

Tag

```
<html>
  <head> </head>
    <body>
      :
    </body>
</html>
```

CSS

```
body{
    background-color: red;
}
```

Id

```
<body>
  <p id="p1" >
  </p>

  <p id="p2" >
  </p>
</body>
```

id has to be unique across the page

CSS

```
#p1{
    background-color: black;
    color: white;
}

#p2{
    color: black;
    font-weight: bold;
}
```

Class

```
<body>
  <div class="product">  ——  </div>
  <div class="product">  ——  </div>
  <div class="review">  ——  </div>
  <div class="review">  ——  </div>
```

CSS

```
.product{
    background-color: white;
    border: 1 px
}

.review{
    background-color: blue;
    border: 2 px
}
```

Attribute

```
<a href="——" > — </a>

<a href="——"  target="_blank" > — </a>

<a href="——"  target="_parent" > — </a>
```

CSS

```
a{
  color: purple;
}
a[target]{
  color: yellow;
}
a[target="_blank"]{
  color: green;
}
```

Wild Card

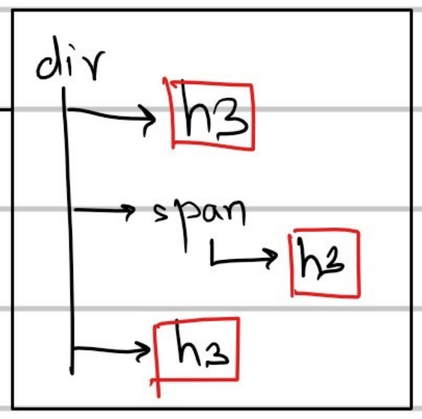
```
<body>
  <p> ——— </p>

  <hr>
  <p> ——— </p>

</body>
```

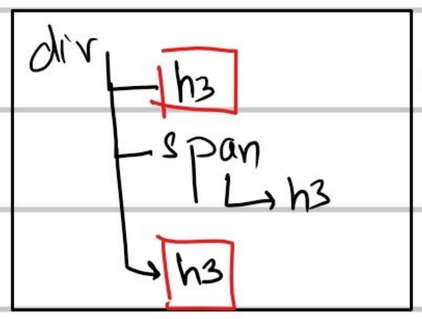
CSS

```
*{
  font-family: 'Arial'
}
```

Combinator

Selector	Icon	CSS		

Descendant	space	div h3 {
		color: red;
		}
				every occurence of the tag under the main tag

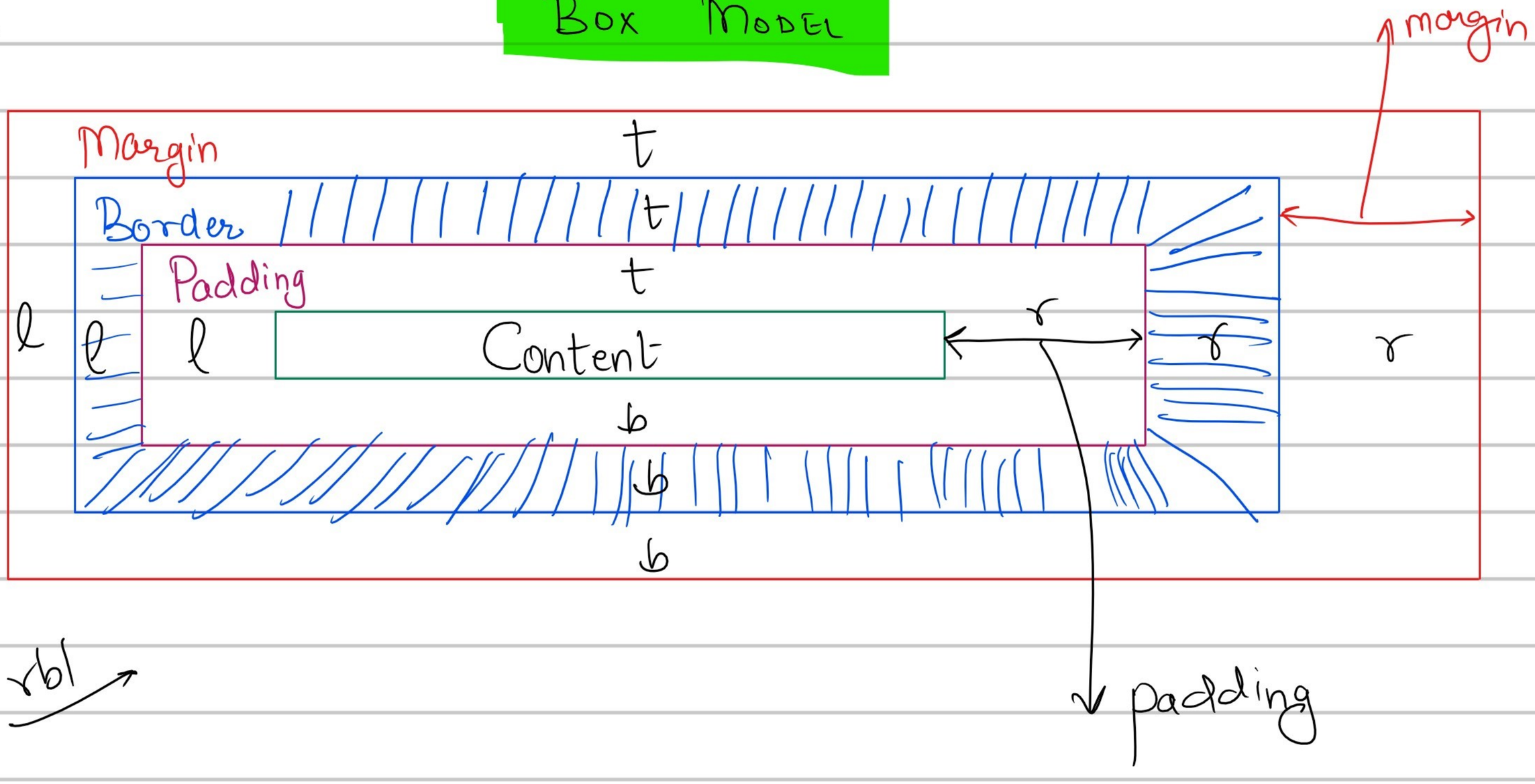
Child	>	div > h3 {
		color: red;
		}
				every direct occurrence of the tag

Adjacent Sibling	+	div + h3 {
		color: red;
		}
			
			<h3>
			<h3>
			<h3>
				→ only the adjacent tag will be affected

General Siblings	~	div ~ h3 {
		color: red;
		}
			
			<h3>
			<h3>
			<h3>
				→ all occurence of the tags after main tag

Box Model

trbl



trbl

Display Elements

none → removes the element completely

inline → displays an element like inline (no width & height)

inline-block → display an element with inline-block. (w & h)

block → display an element like a block

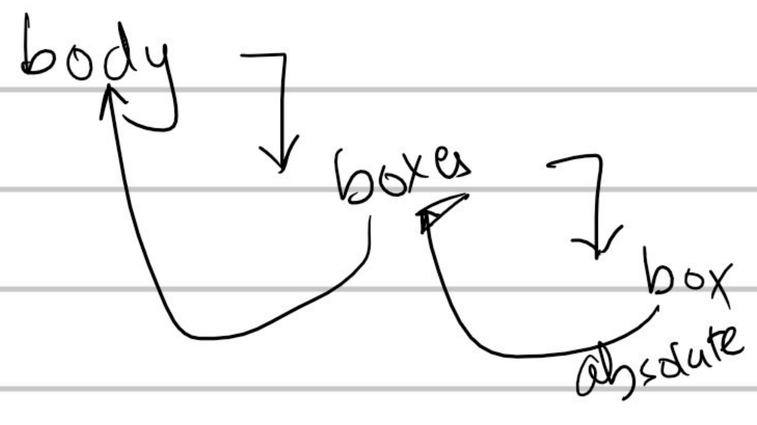
Positions

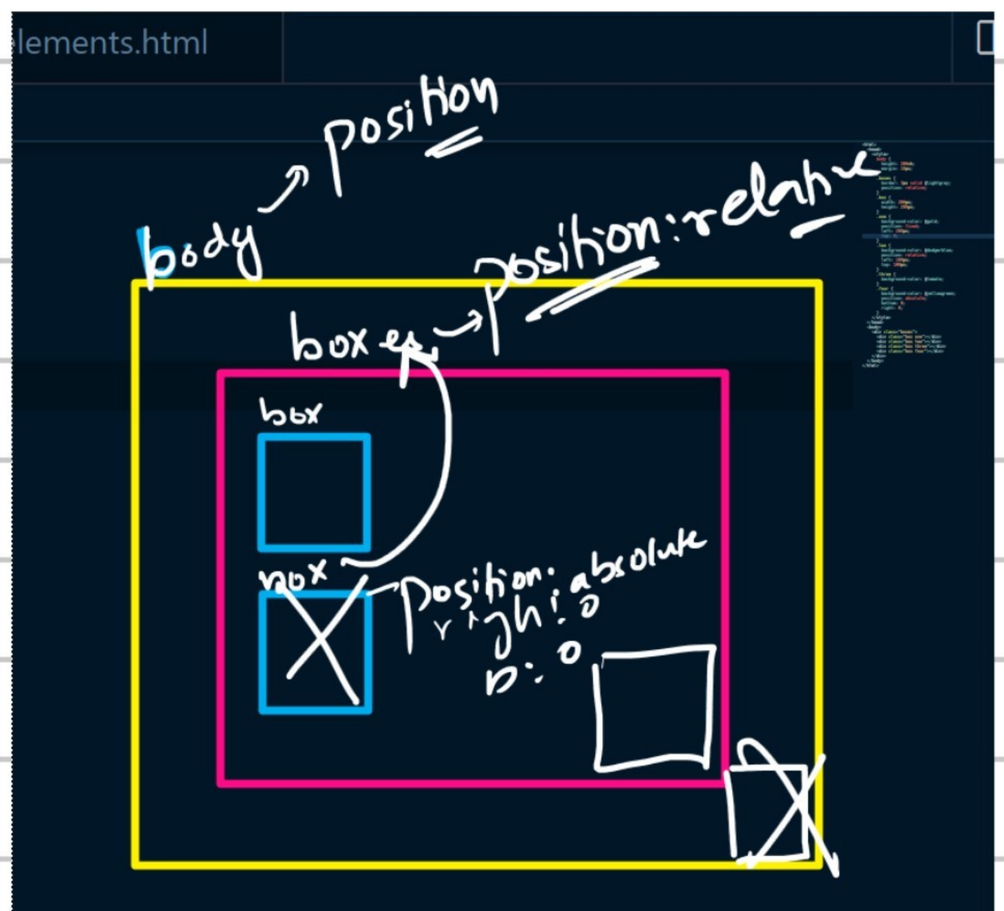
static → default value → all the elements are in the order as they appear

relative → element is positioned relative to it's normal position

absolute → element is positioned absolutely to it's first positioned parent.

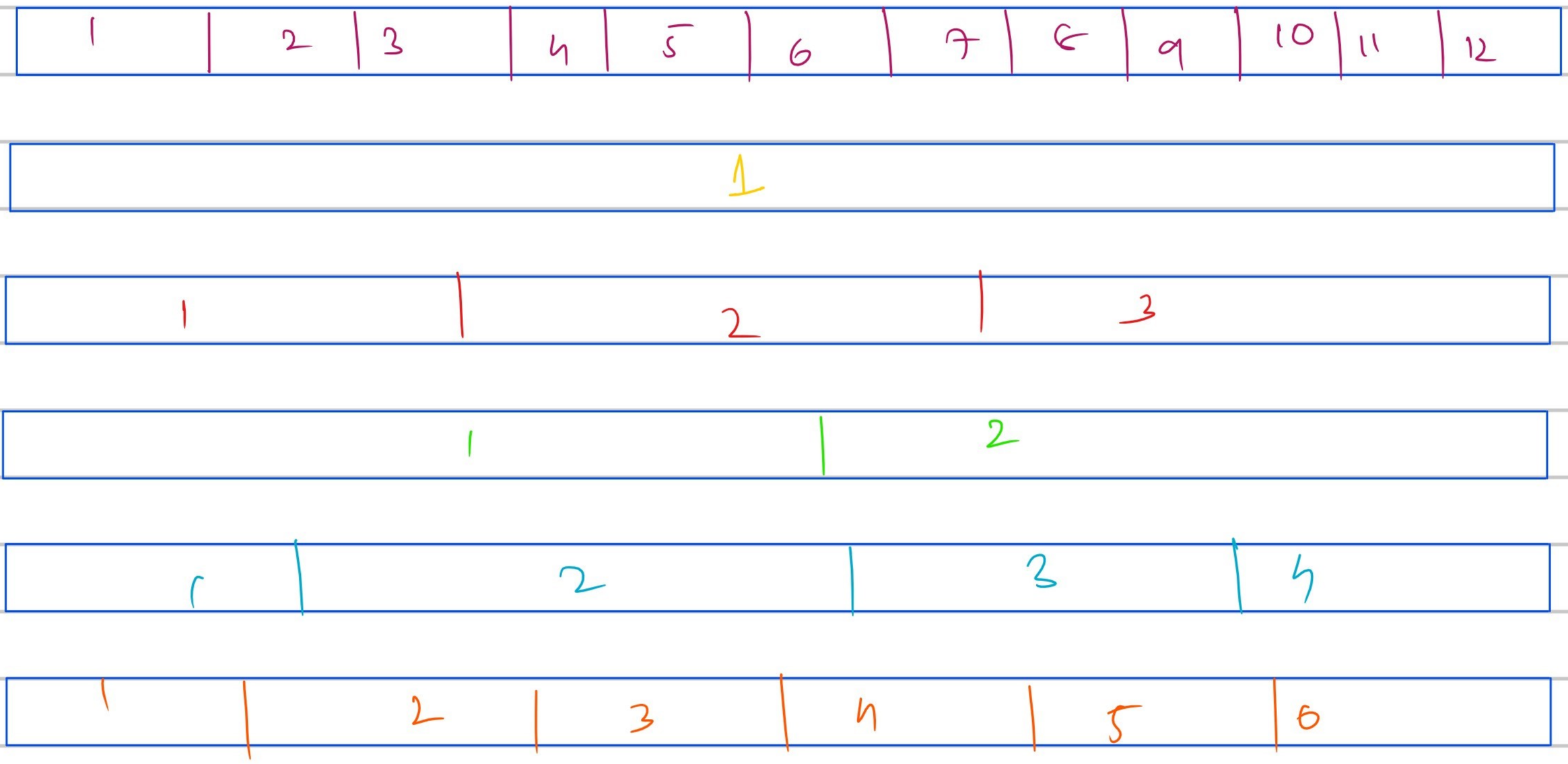
fixed → element is fixed in context to browser window





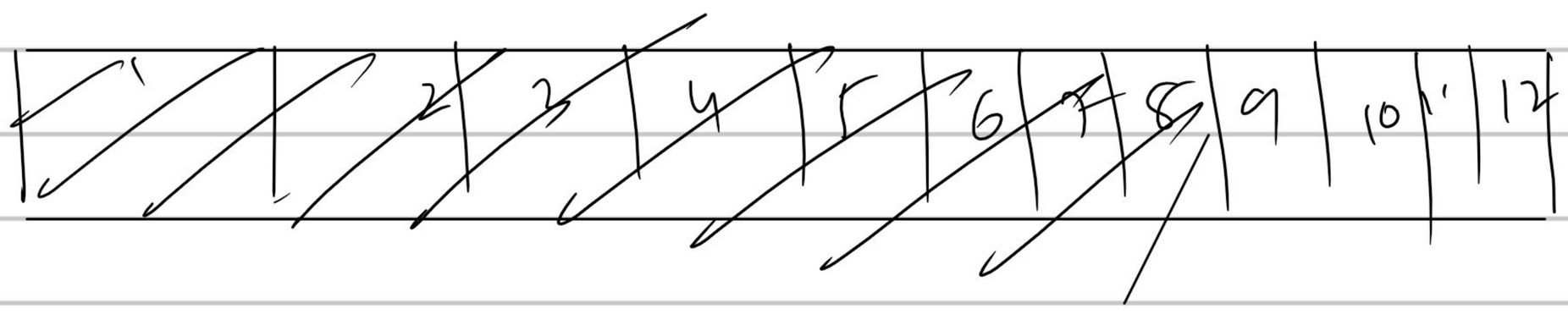
Bootstrap

Grid System



Responsive Breakpoints

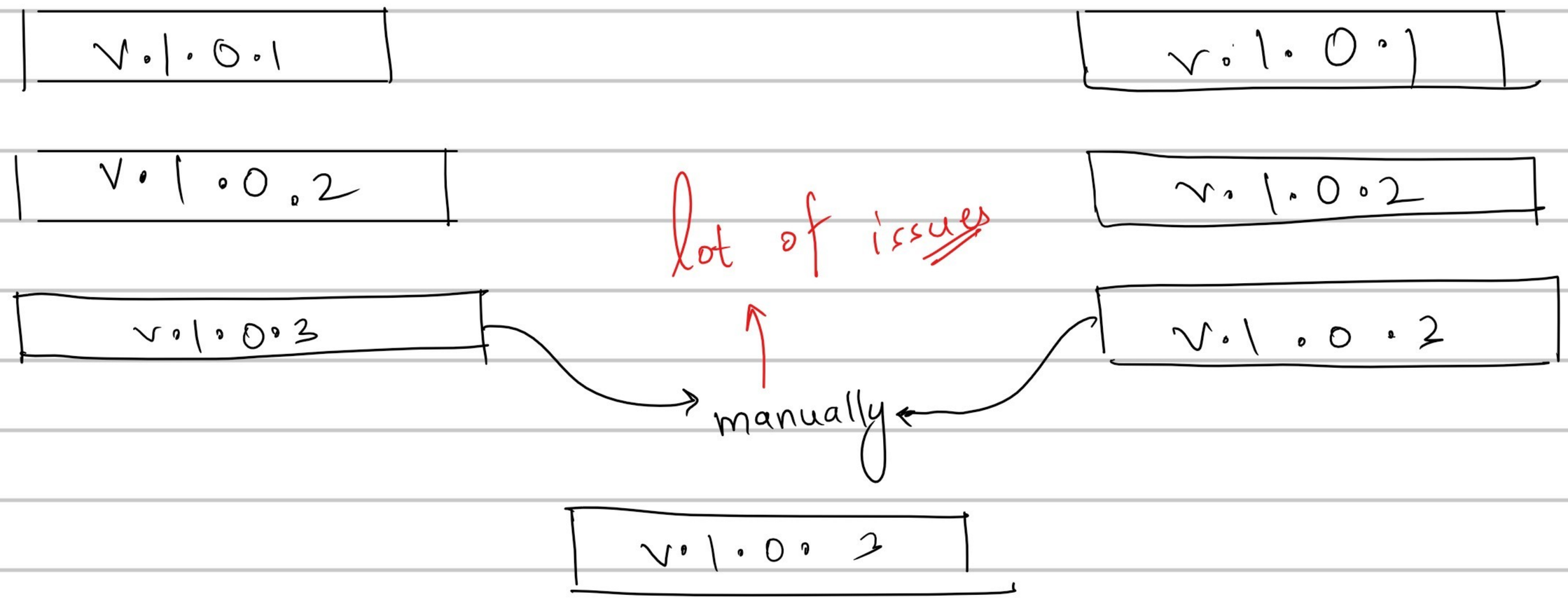
	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
Max container width	None (auto)	540px	720px	960px	1140px
Class prefix	`.col-`	`.col-sm-`	`.col-md-`	`.col-lg-`	`.col-xl-`
# of columns	12				
Gutter width	30px (15px on each side of a column)				
Nestable	Yes				
Column ordering	Yes				



Git → Version Control System.

Tom

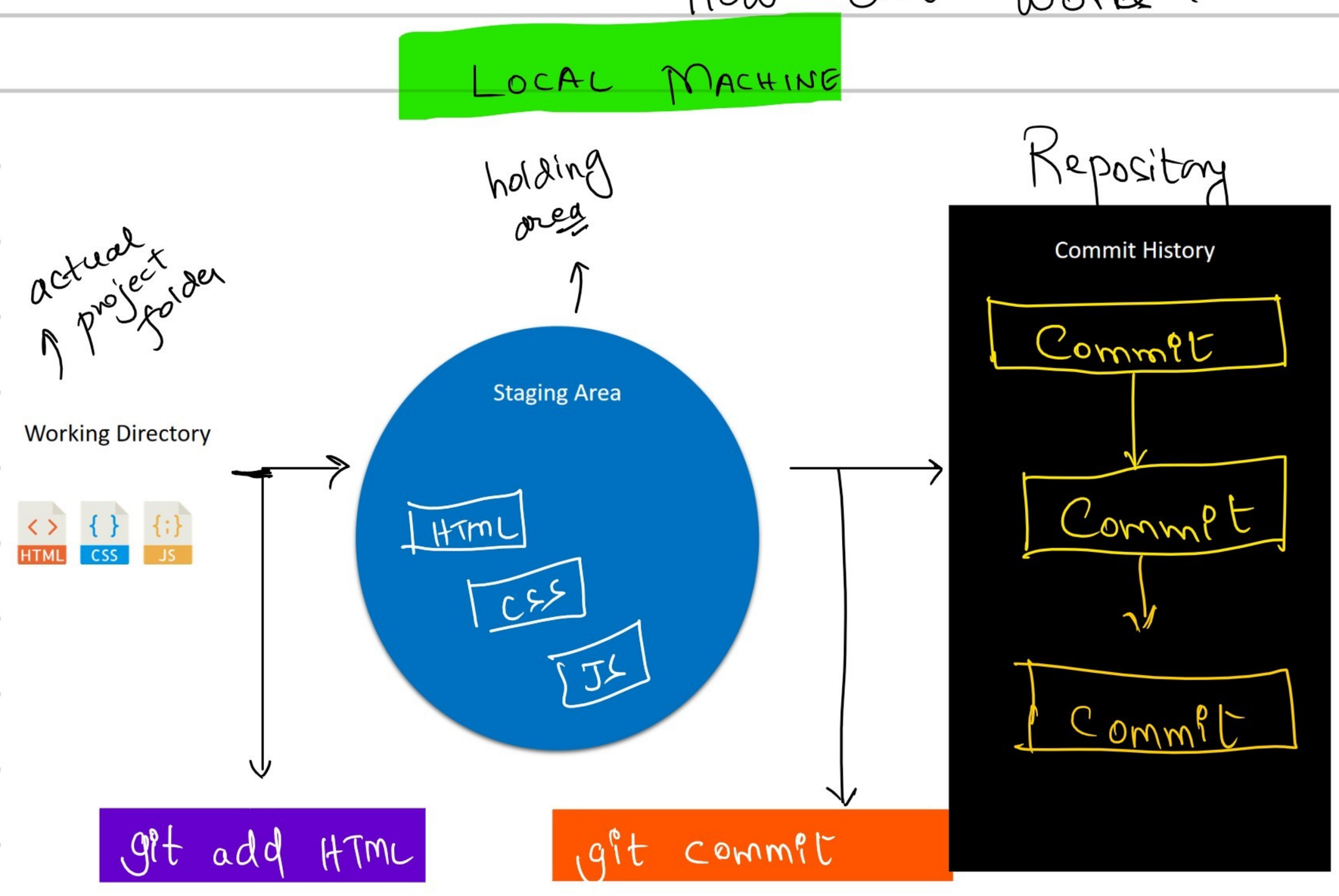
Elizabeth

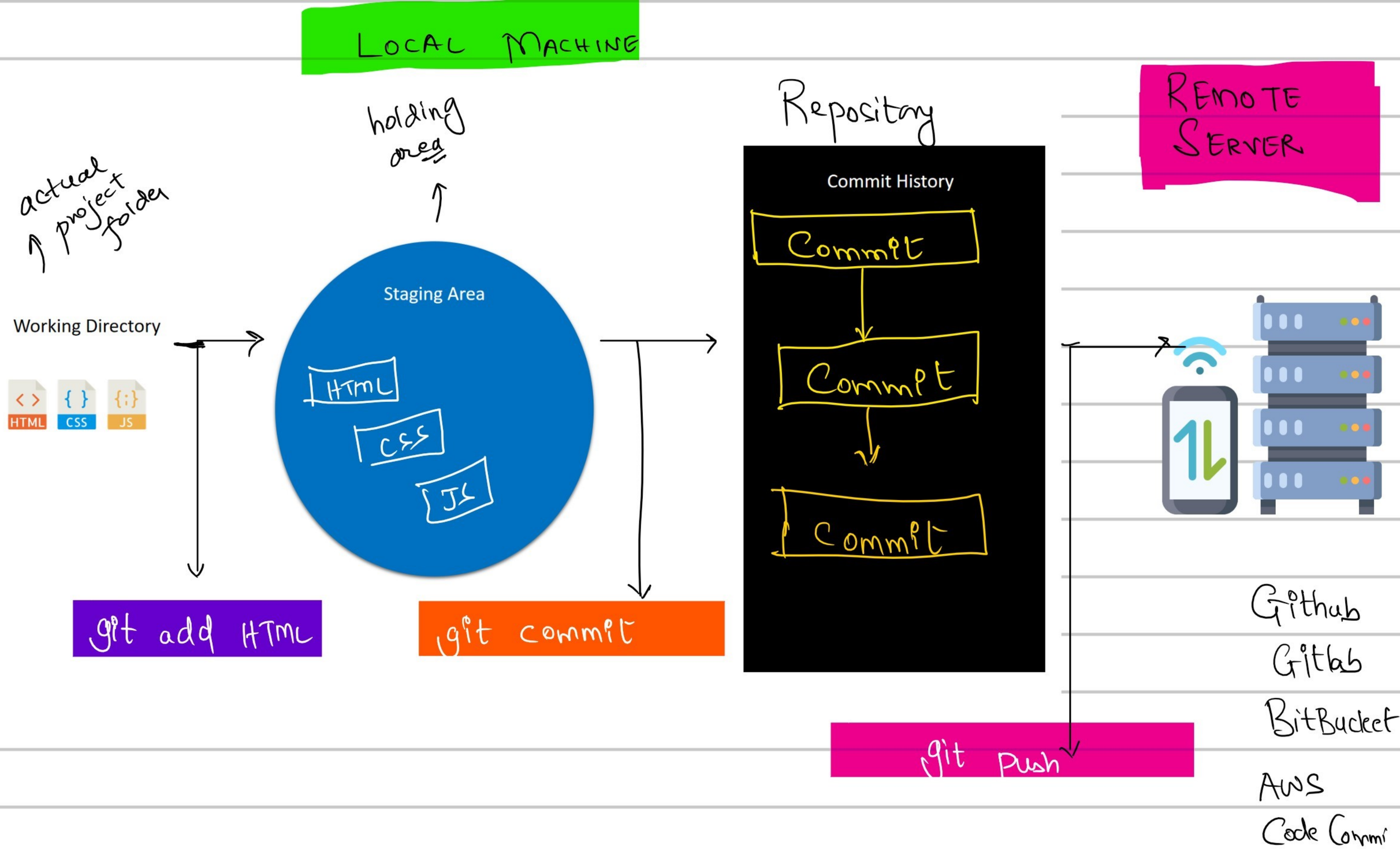


Version Control System.

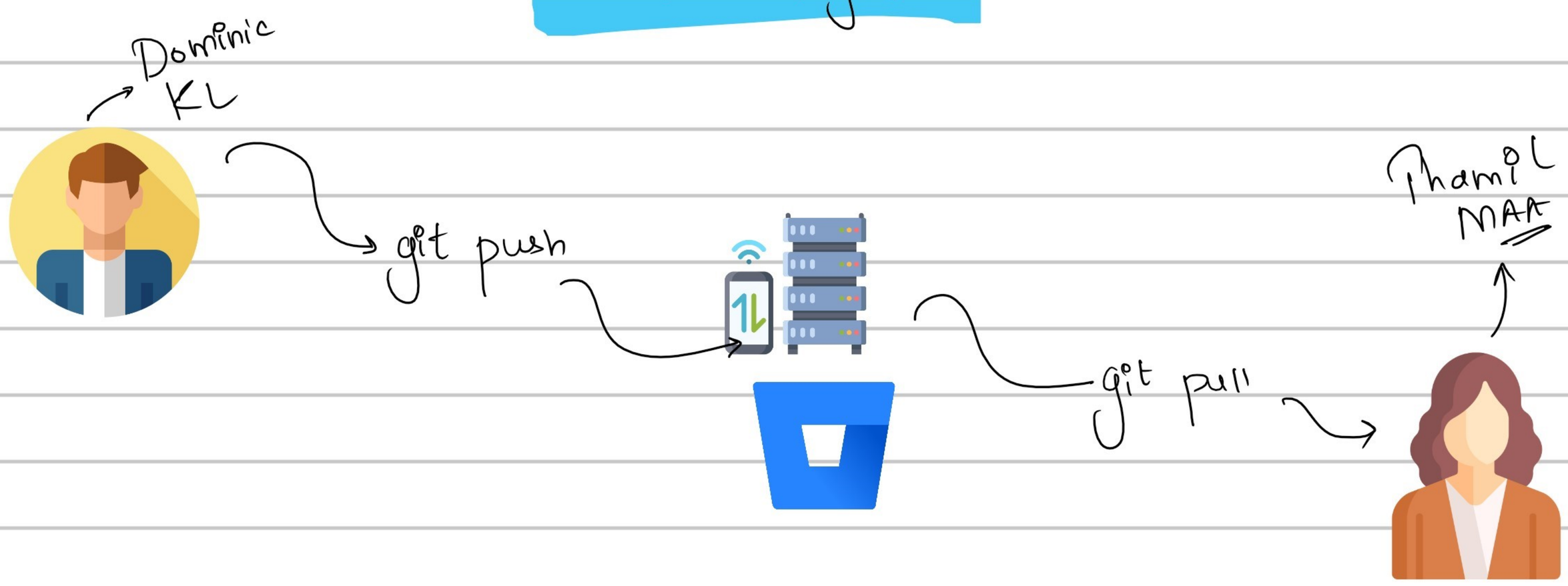
- Source Code Management
- a system which maintains your codebase
- Track History
- Work Together

How Git works ?





Work Together



Why Git ?

* Free & Open Source
* Super Fast
* Scalable
* Cheap Branching & Merging

Configure Git

1. Name
2. Email
3. Default Editor
4. UI Colors

SYSTEM → All users

GLOBAL → All the repositories of current user

LOCAL → The current repository

Configuring Git

MINGW64:/c/Users/Zartab Nakhwa

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ git config --global user.name "Zartab Nakhwa"

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ git config --global user.email "zartab@codewithz.com"

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ git config --global core.editor "code"

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ git config --global color.ui auto

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$
```

.gitconfig × | Release Notes: 1.69.1

C: > Users > Zartab Nakhwa > .gitconfig

```
[user]
    name = Zartab Nakhwa
    email = zartab@codewithz.com
[core]
    editor = code
```

Checking all config

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ git config -l
credential.helper=manager-core
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=openssl
http.sslcainfo=C:/Program Files/Git/mingw64/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.symlinks=false
pull.rebase=false
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
user.name=Zartab Nakhwa
user.email=zartab@codewithz.com
core.editor=code
color.ui=auto
```

Switch to Project directry

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ d:
bash: d:: command not found

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 ~
$ cd d:

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d
$ cd SCB/2022/Bootcamp\ July\ 2022/Git/myproject/

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproje
ct
$
```

① Initiallze the Repositry

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproje
ct
$ git init .
Initialized empty Git repository in D:/SCB/2022/Bootcamp July 2022/Git/myproject
/.git/

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproje
ct (master)
$ ls -a
./  ../  .git/  index.html  styles/

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproje
ct (master)
$
```

② Add some/all files to Staging Area

```
nothing added to commit but untracked files present (use "git add" to track)

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add index.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   index.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        styles/
```

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   index.html
        new file:   styles/style.css

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
```

③ Commit the files to repositry

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git commit -m "Initial Commit"
[master (root-commit) b4b31aa] Initial Commit
 2 files changed, 21 insertions(+)
 create mode 100644 index.html
 create mode 100644 styles/style.css
```

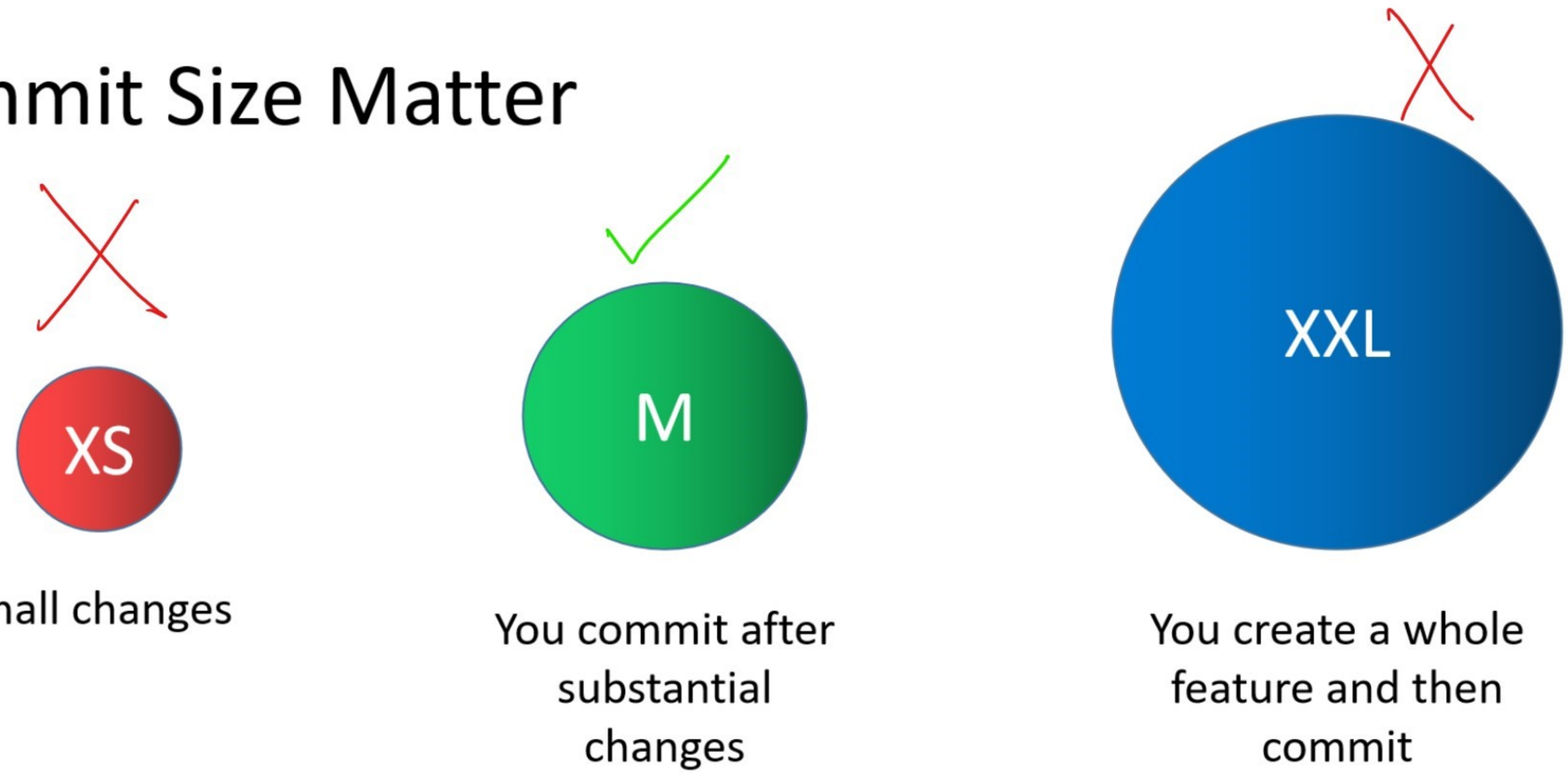
To check commit history

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log
commit b4b31aa25d2bfd7b2aeab4b1bab52cadf221259a (HEAD -> master)
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 11:45:13 2022 +0530

    Initial Commit
```

Give meaningful commit messages

Commit Best Practices

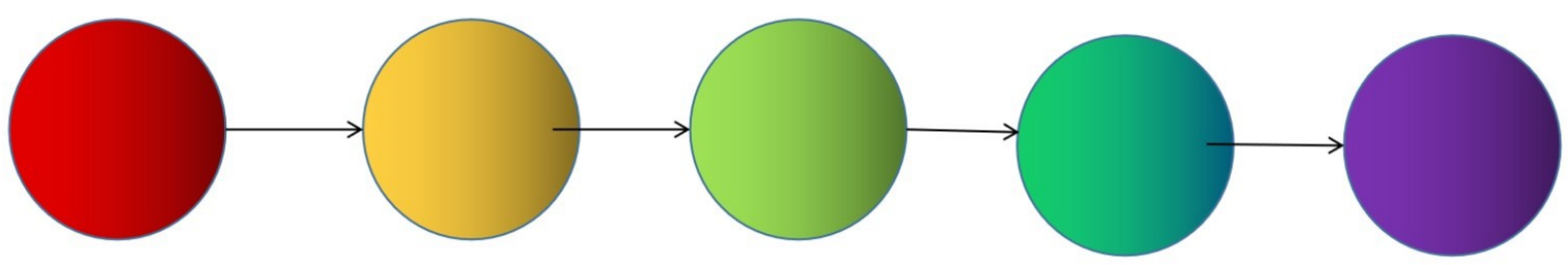
Commit Size Matter



Commit Best Practices

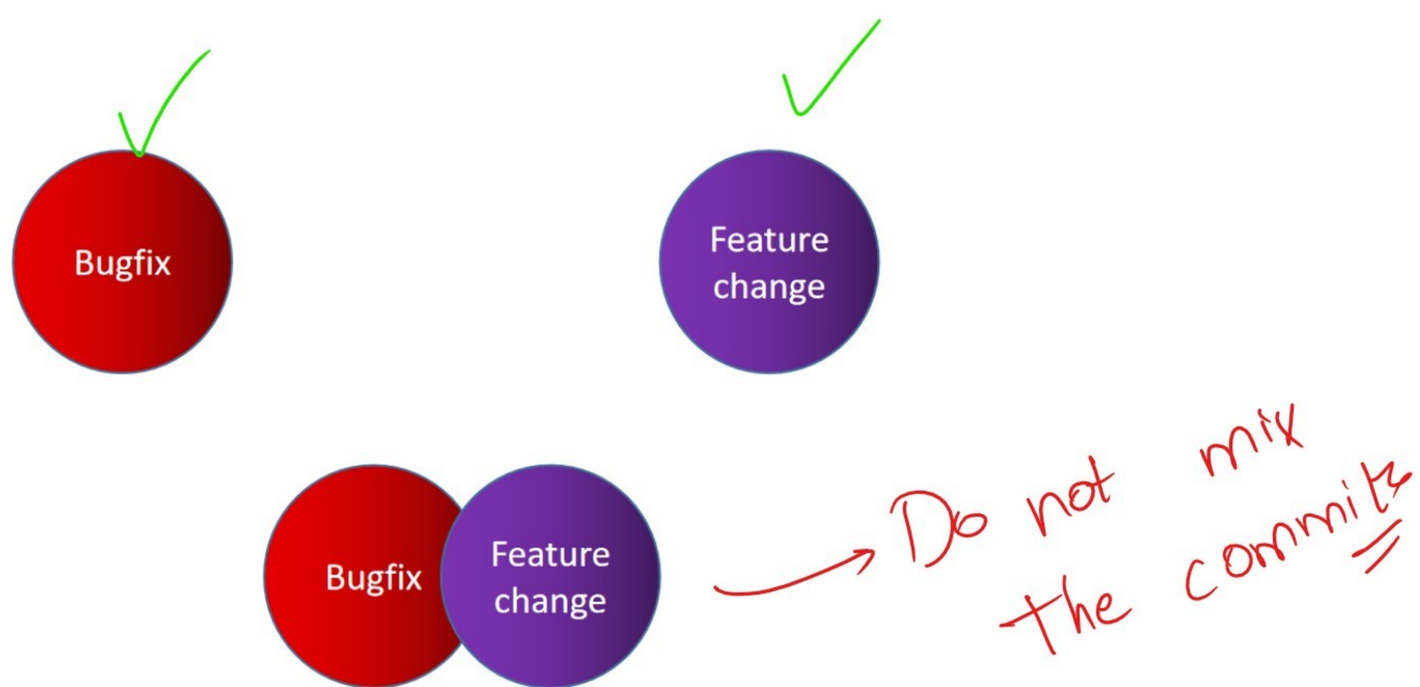
Commit Often -

As you reach a state you want to RECORD then make a commit



Commit Best Practices

Don't mix different types of commit:



Made changes in html & git status

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html

no changes added to commit (use "git add" and/or "git commit -a")
```

Add modified file to SA & commit

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git commit -m "Updated the title in index.html"
[master 7d08c1b] Updated the title in index.html
 1 file changed, 1 insertion(+), 1 deletion(-)

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log
commit 7d08c1b309f6a3002a1363c1cb4818b284f35437 (HEAD -> master)
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 11:58:05 2022 +0530

    Updated the title in index.html

commit b4b31aa25d2bfd7b2aeab4b1bab52cadf221259a
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 11:45:13 2022 +0530

    Initial Commit

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
```

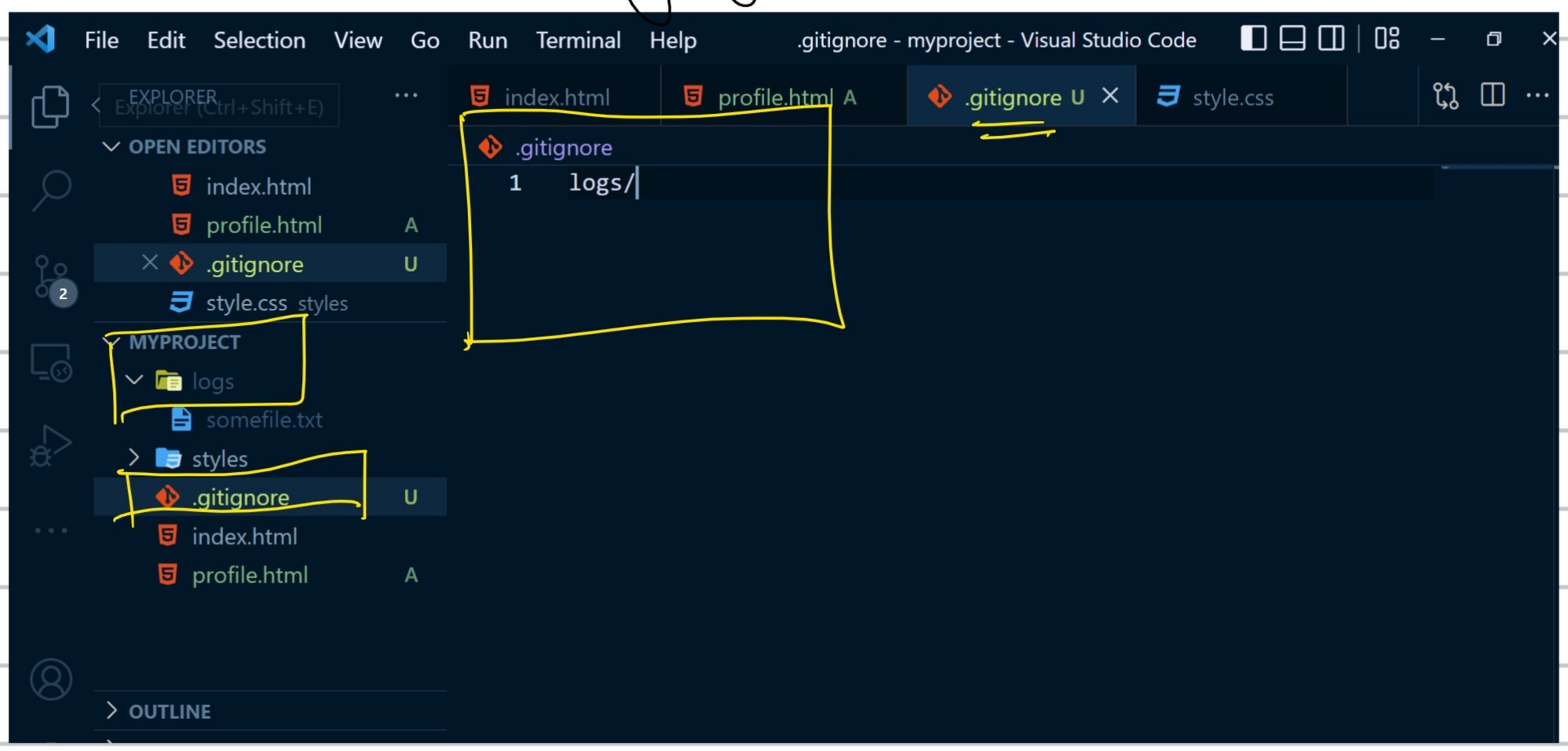
Checking for files in Staging Area

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        profile.html

nothing added to commit but untracked files present (use "git add" to track)

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git ls-files
index.html
profile.html
styles/style.css

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

Ignoring the files

In working directory → log
→ compiled source code

→ .gitignore




```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   profile.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore


Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .gitignore

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git commit -m "Added .gitignore"
[master cd81f08] Added .gitignore
 2 files changed, 6 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 profile.html
```

Status Short Hand

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status -s
 M index.html
?? product.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status -s
M  index.html
A  product.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

(M) - Modified
(??) - Untracked
Red → unstaged

(M)
(A) - Added
Green → staged

Viewing Difference in Working Directory & Staging Area

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git diff
diff --git a/index.html b/index.html
index 0980b44..065abdd 100644
--- a/index.html
+++ b/index.html
@@ -14,6 +14,7 @@
        </p>
        <h2>Description</h2>
        <p>Lorem ipsum dolor sit amet.</p>
+       <p>Lorem ipsum dolor sit amet.</p>
      </div>
    </body>
  </html>

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

Viewing difference in Staging Area & Repository

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git diff --staged
diff --git a/index.html b/index.html
index 94441dc..0980b44 100644
--- a/index.html
+++ b/index.html
@@ -13,6 +13,7 @@
          veritatis nulla quisquam maxime.
        </p>
        <h2>Description</h2>
+       <p>Lorem ipsum dolor sit amet.</p>
      </div>
    </body>
  </html>
```

Checking the history

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log
commit bc58150278de5f5b5ac05f0457d0b2104fe5e442 (HEAD -> master)
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 12:15:42 2022 +0530

    Updated product and index

commit cd81f08f4acb68108ec208c625903bbbd9d6ef5e
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 12:09:26 2022 +0530

    Added .gitignore

commit 7d08c1b309f6a3002a1363c1cb4818b284f35437
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 11:58:05 2022 +0530

    Updated the title in index.html

commit b4b31aa25d2bfd7b2aeab4b1bab52cadf221259a
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 11:45:13 2022 +0530

    Initial Commit
```

Commit id

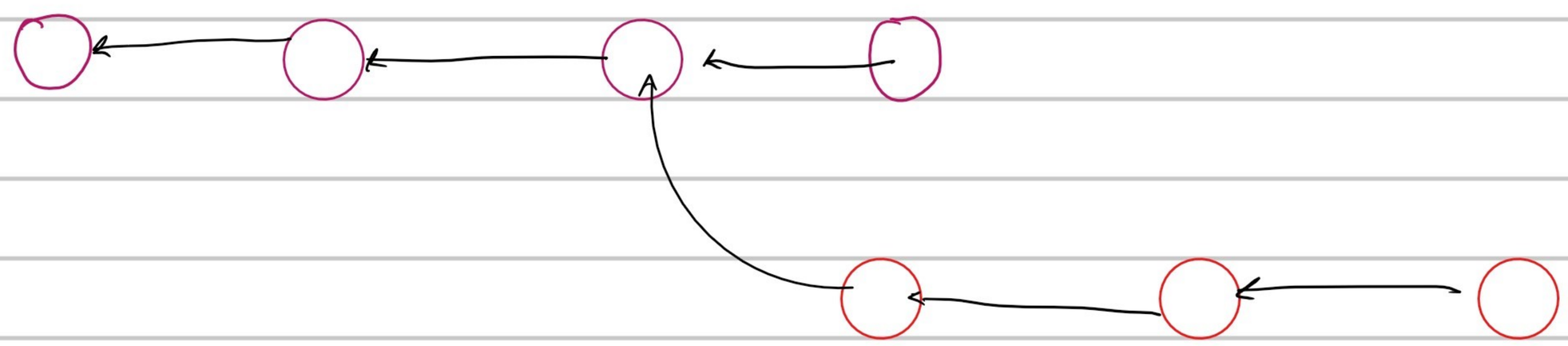
Commit message

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --oneline
bc58150 (HEAD -> master)  Updated product and index
cd81f08 Added .gitignore
7d08c1b Updated the title in index.html
b4b31aa Initial Commit
```

Unstage a file

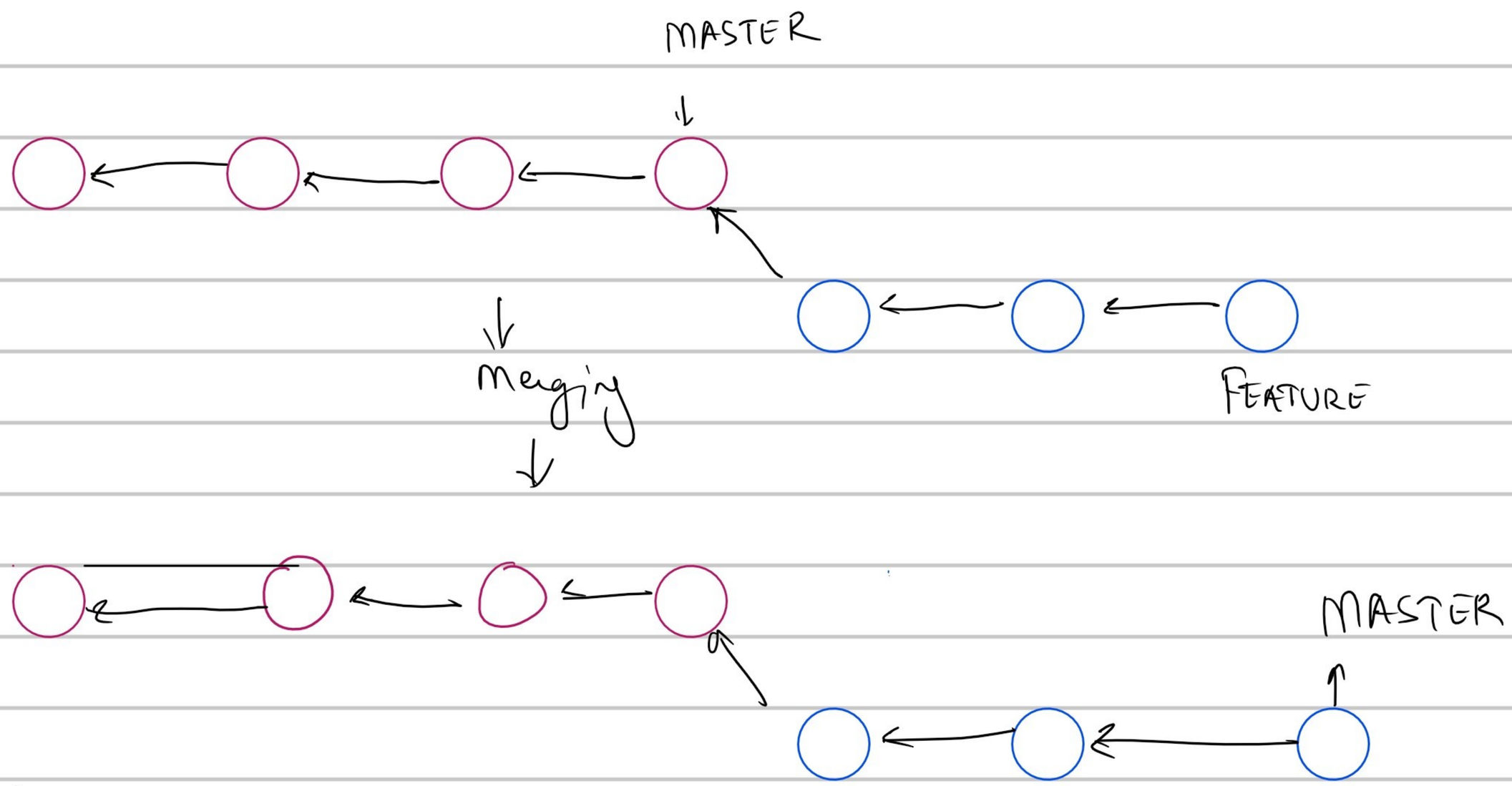
```
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   index.html

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html


Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git restore --staged index.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html

no changes added to commit (use "git add" and/or "git commit -a")

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

Branching



allows us to diverge from the main line of work & work on something else

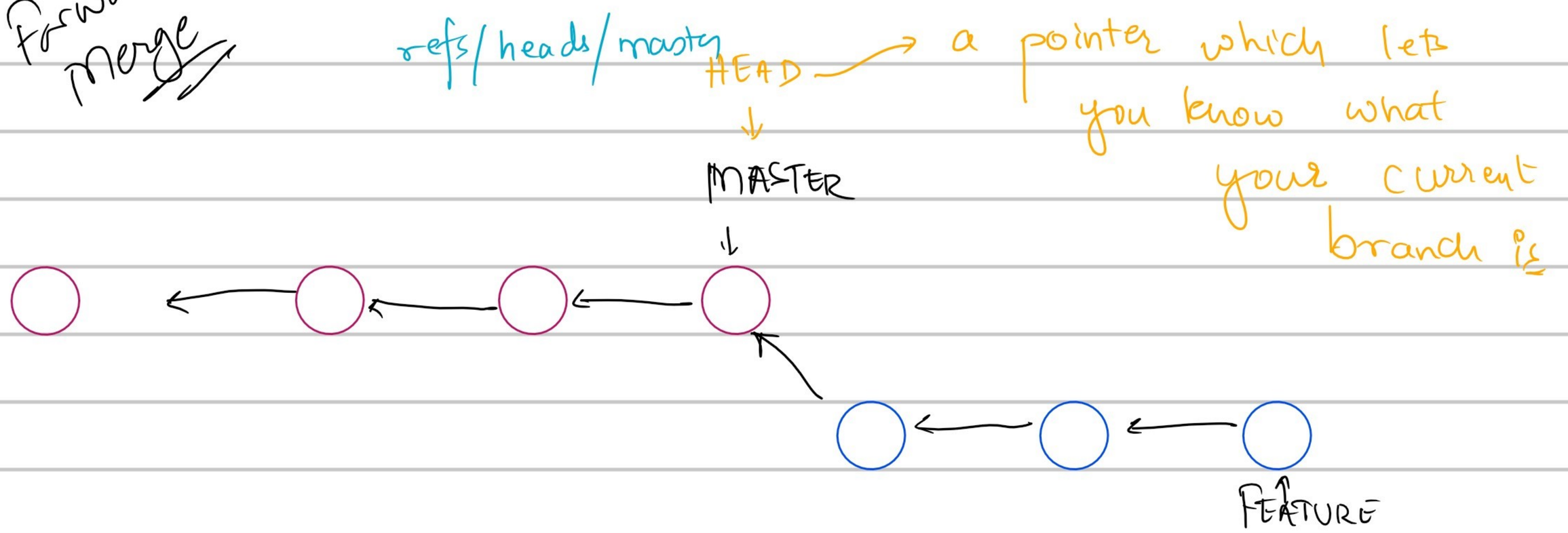
Branching



fast forward merge

refs/heads/master

HEAD → a pointer which lets you know what your current branch is



refs/heads/feature

Creating a Branch

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject

You're sharing this screen

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git branch feature-signup

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git branch
  feature-signup
* master

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

(list the branches)

Switching in the branches

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git checkout feature-signup
Switched to branch 'feature-signup'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-si
gnup)
$
```

git switch feature-signup

`git checkout` is a bit of a swiss army knife in that has several unrelated uses.

If you modify a file but haven't staged the change, then `git checkout <filename>` will reverse the modifications... a quick and easy way to cancel changes to a file. You remain in the same branch.

`git checkout <branchname>` (as you noted) switches branches.

Two completely different purposes, which could lead to confusion if a file name and a branch name are similar.

Having it as two commands is clearer.

Switched to new branch; added a file; commited; checked log; switched back to master; checked log

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git switch feature-signup
Switched to branch 'feature-signup'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-si
gnup)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-si
gnup)
$ git commit -m "Added the signup form"
[feature-signup 0b094eb] Added the signup form
 1 file changed, 7 insertions(+)
 create mode 100644 signup.html
```

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-si
gnup)
$ git switch master
Switched to branch 'master'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git status
On branch master
nothing to commit, working tree clean

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --online
fatal: unrecognized argument: --online

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --oneline
6c34732 (HEAD -> master) Version 1
bc58150  Updated product and index
cd81f08 Added .gitignore
7d08c1b Updated the title in index.html
b4b31aa Initial Commit
```

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git switch feature-signup
Switched to branch 'feature-signup'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-si
gnup)
$ git log --oneline
0b094eb (HEAD -> feature-signup) Added the signup form
6c34732 (master) Version 1
bc58150  Updated product and index
cd81f08 Added .gitignore
7d08c1b Updated the title in index.html
b4b31aa Initial Commit
```

To check history of all the branches

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --all --oneline
0b094eb (feature-signup) Added the signup form
6c34732 (HEAD -> master) Version 1
bc58150  Updated product and index
cd81f08 Added .gitignore
7d08c1b Updated the title in index.html
b4b31aa Initial Commit
```

Compare the branches

MINGW64:/d/SCB/2022/Bootcamp July 2022/Git/myproject You're sharing this screen

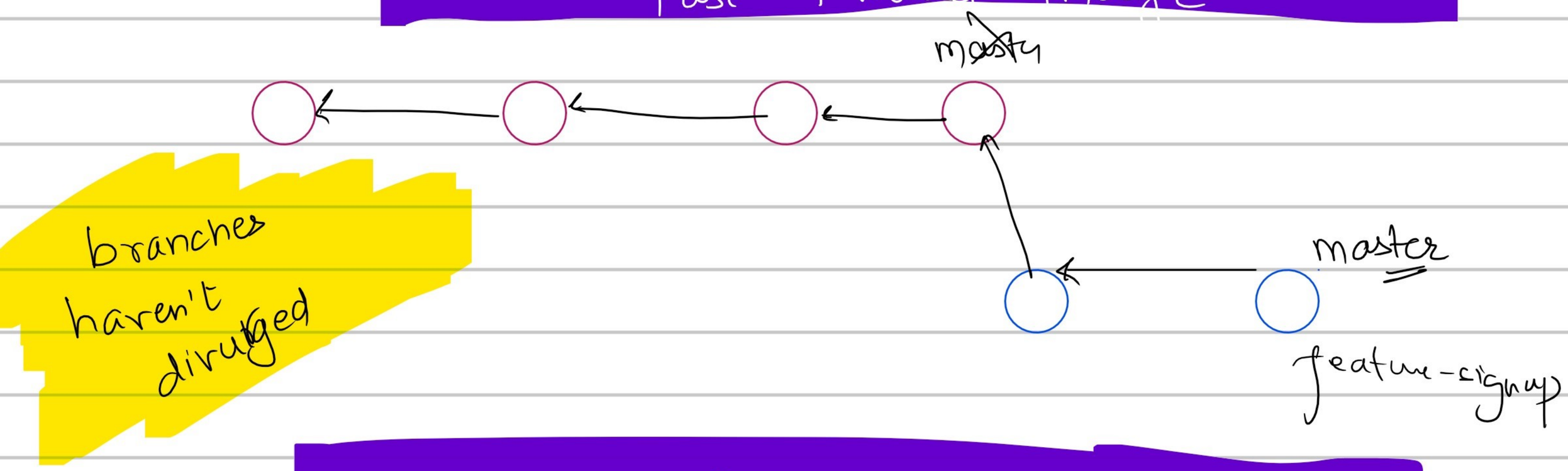
```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log master..feature-signup
commit 0b094eb9289ee7923a8f03eabe6175f69154888f (feature-signup)
Author: Zartab Nakhwa <zartab@codewithz.com>
Date:   Wed Jul 13 12:52:46 2022 +0530

    Added the signup form

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git diff master..feature-signup
diff --git a/signup.html b/signup.html
new file mode 100644
index 0000000..30dc094
--- /dev/null
+++ b/signup.html
@@ -0,0 +1,7 @@
+<html>
+  <body>
+    <form action="">
+      <label for="">Sign Up</label>
+    </form>
+  </body>
+</html>
```

Merging

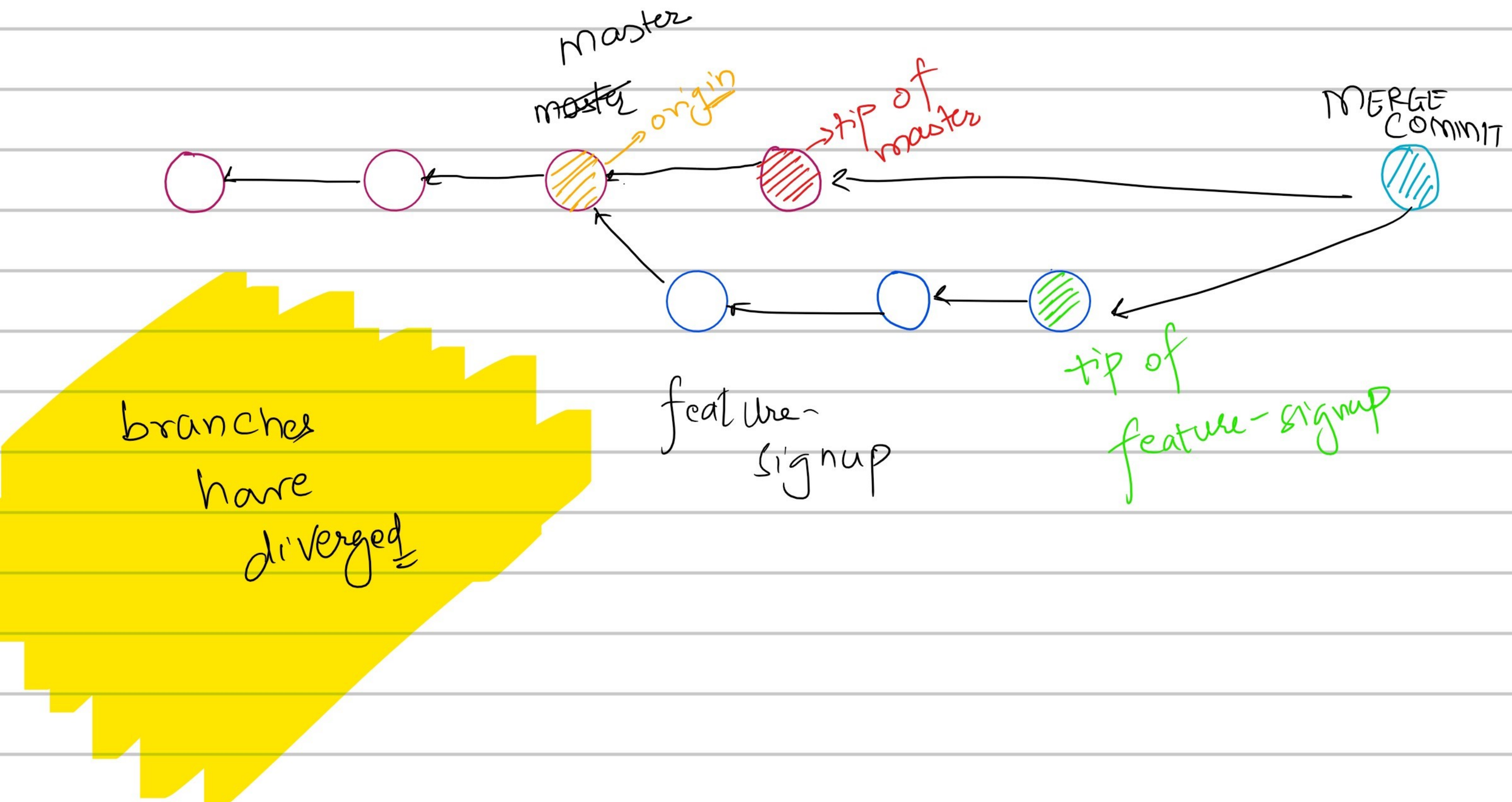
1. Fast Forward Merge
2. 3-way Merge

Fast Forward Merge

Fast Forward Merge



3-Way Merge



Merge

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --all --oneline --graph
* 0b094eb (feature-signup) Added the signup form
* 6c34732 (HEAD -> master) Version 1
* bc58150  Updated product and index
* cd81f08 Added .gitignore
* 7d08c1b Updated the title in index.html
* b4b31aa Initial Commit

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git switch master
Already on 'master'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git merge feature-signup
Updating 6c34732..0b094eb
Fast-forward
 signup.html | 7 +++++++
 1 file changed, 7 insertions(+)
 create mode 100644 signup.html
```

After Merge

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --all --oneline --graph
* 0b094eb (HEAD -> master, feature-signup) Added the signup form
* 6c34732 Version 1
* bc58150  Updated product and index
* cd81f08 Added .gitignore
* 7d08c1b Updated the title in index.html
* b4b31aa Initial Commit
```

Once merge is done; branch should be deleted

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git branch -d feature-signup
Deleted branch feature-signup (was 0b094eb).

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

Merging with --no-ff

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git branch feature-login

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git switch feature-login
Switched to branch 'feature-login'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-lo
gin)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-lo
gin)
$ git commit -m "Login Page Added"
[feature-login 122dc61] Login Page Added
 1 file changed, 5 insertions(+)
 create mode 100644 login.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-lo
gin)
$ git switch master
Switched to branch 'master'
```

```
* 122dc61 (feature-login) Login Page Added
* 0b094eb (HEAD -> master) Added the signup form
* 6c34732 Version 1
* bc58150  Updated product and index
* cd81f08 Added .gitignore
* 7d08c1b Updated the title in index.html
* b4b31aa Initial Commit

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git merge --no-ff feature-login
Merge made by the 'ort' strategy.
 login.html | 5 +++++
 1 file changed, 5 insertions(+)
 create mode 100644 login.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --oneline --all --graph
*   3d2d3fe (HEAD -> master) Merge branch 'feature-login'
|\
| * 122dc61 (feature-login) Login Page Added
|/
* 0b094eb Added the signup form
```

Merge Conflict

both branches make changes to index.html

index.html
feature-CP committed

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git branch feature-change-password

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git switch feature-change-password
Switched to branch 'feature-change-password'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-ch
ange-password)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-ch
ange-password)
$ git commit -m "Changed title for CP"
[feature-change-password e06f327] Changed title for CP
 1 file changed, 1 insertion(+), 1 deletion(-)

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-ch
```

index.html
master committed

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git commit -m "Changed Title for Master Page"
[master bc6296b] Changed Title for Master Page
 1 file changed, 1 insertion(+), 1 deletion(-)

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

When trying to merge

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git merge feature-change-password
Auto-merging index.html
CONFLICT (content): Merge conflict in index.html
Automatic merge failed; fix conflicts and then commit the result.

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master|MER
GING)
$
```

The file which has merge conflict looks like

when resolving merge conflict

do not add new changes

signup.html | login.html | index.html !

index.html > html > body > div > ?

```
1   <html>
2     <head>
3       <title>Welcome to SCB</title>
4       <link rel="stylesheet" href="styles/style.css" />
5     </head>
6     <body>
7       <div>
    Accept Current Change | Accept Incoming Change | Accept Both Changes | Compare Changes
8   <<<<<<< HEAD (Current Change)
9         <h1>Standard Chartered Bank - Master Page</h1>
10  =======
11        <h1>Standard Chartered Bank - Change Password</h1>
12  >>>>>>> feature-change-password (Incoming Change)
13        <p>
14          Lorem ipsum dolor, sit amet consectetur adipisicing elit
15          vero provident velit porro. Sint maiores facere, sequi n
16          nesciunt inventore cumque necessitatibus provident, cons
17          veritatis nulla quisquam maxime.
18        </p>
```

options from VS Code

Evil Commit

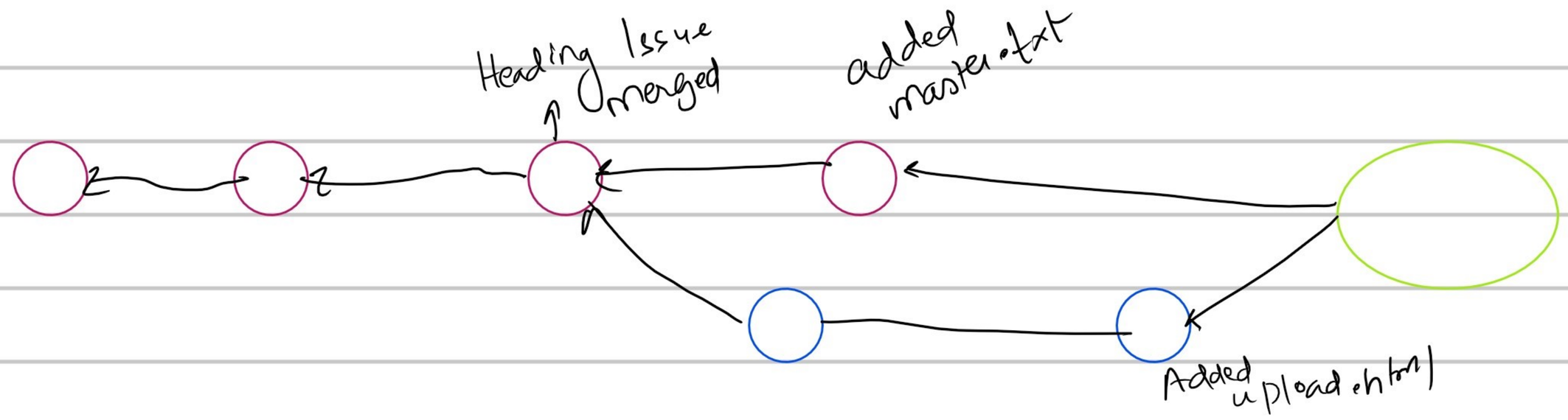
Once file is fixed

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master|MERGING)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master|MERGING)
$ git commit -m "Heading Issue Merged"
[master e6a27e0] Heading Issue Merged

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$
```

3-way-merge

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git branch -C feature-upload

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git switch feature-upload
Switched to branch 'feature-upload'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-upload)
$ # We added a new file by name of upload.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-upload)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-upload)
$ git commit -m "Added upload.html"
[feature-upload 5815b5e] Added upload.html
 1 file changed, 6 insertions(+)
 create mode 100644 upload.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-upload)
$
```

```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (feature-up
load)
$ git switch master
Switched to branch 'master'

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git add .

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git commit -m "Added master.txt"
[master 05e5b86] Added master.txt
 1 file changed, 1 insertion(+)
 create mode 100644 master-data.txt

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --oneline --all --graph
* 05e5b86 (HEAD -> master) Added master.txt
| * 5815b5e (feature-upload) Added upload.html
|/
*   e6a27e0 Heading Issue Merged
```




```
Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git merge feature-upload
Merge made by the 'ort' strategy.
 upload.html | 6 ++++++
 1 file changed, 6 insertions(+)
 create mode 100644 upload.html

Zartab Nakhwa@WINDOWS-L1BB9SS MINGW64 /d/SCB/2022/Bootcamp July 2022/Git/myproject (master)
$ git log --oneline --all --graph
*   3f25cdb (HEAD -> master) Merge branch 'feature-upload'
|\
| * 5815b5e (feature-upload) Added upload.html
* | 05e5b86 Added master.txt
|/
*   e6a27e0 Heading Issue Merged
|\
| * e06f327 Changed title for CP
* | bc6296b Changed Title for Master Page
|/
*   3d2d3fe Merge branch 'feature-login'
|\
| * 122dc61 Login Page Added
```

Stashing

JavaScript

* JavaScript is a dynamic, weakly typed programming language, which can be compiled at runtime.

var x = 10; ✓

x = "Zautab"; ✓

x = [1, 2, 3]; ✓

float f = 3.14f; ✓

strongly typed

f = "Zautab"; ✗

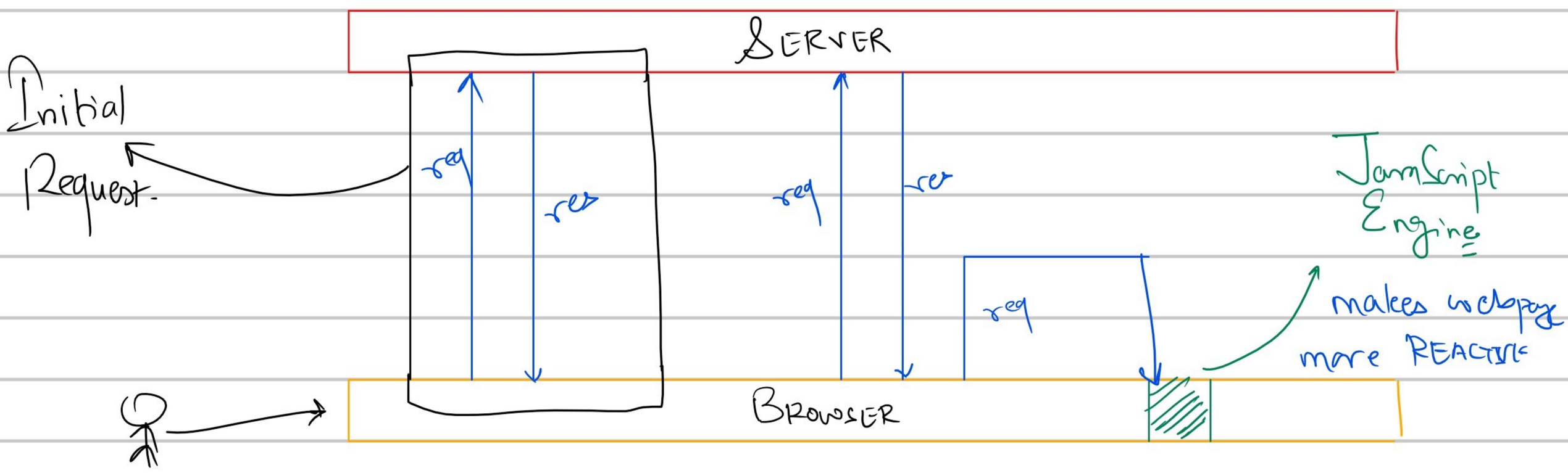
JavaScript can be executed as a part of web-page in a browser or on any machine.

JavaScript → makes the page dynamic

→ change the content of the page directly from the browser.

JavaScript → LiveScript

Java & JavaScript are completely independent



How JavaScript works.

Computer doesn't understand JavaScript but BROWSER does

↓

JavaScript Engine

program that executes JavaScript code

* What can JavaScript do

① Access the DOM elements

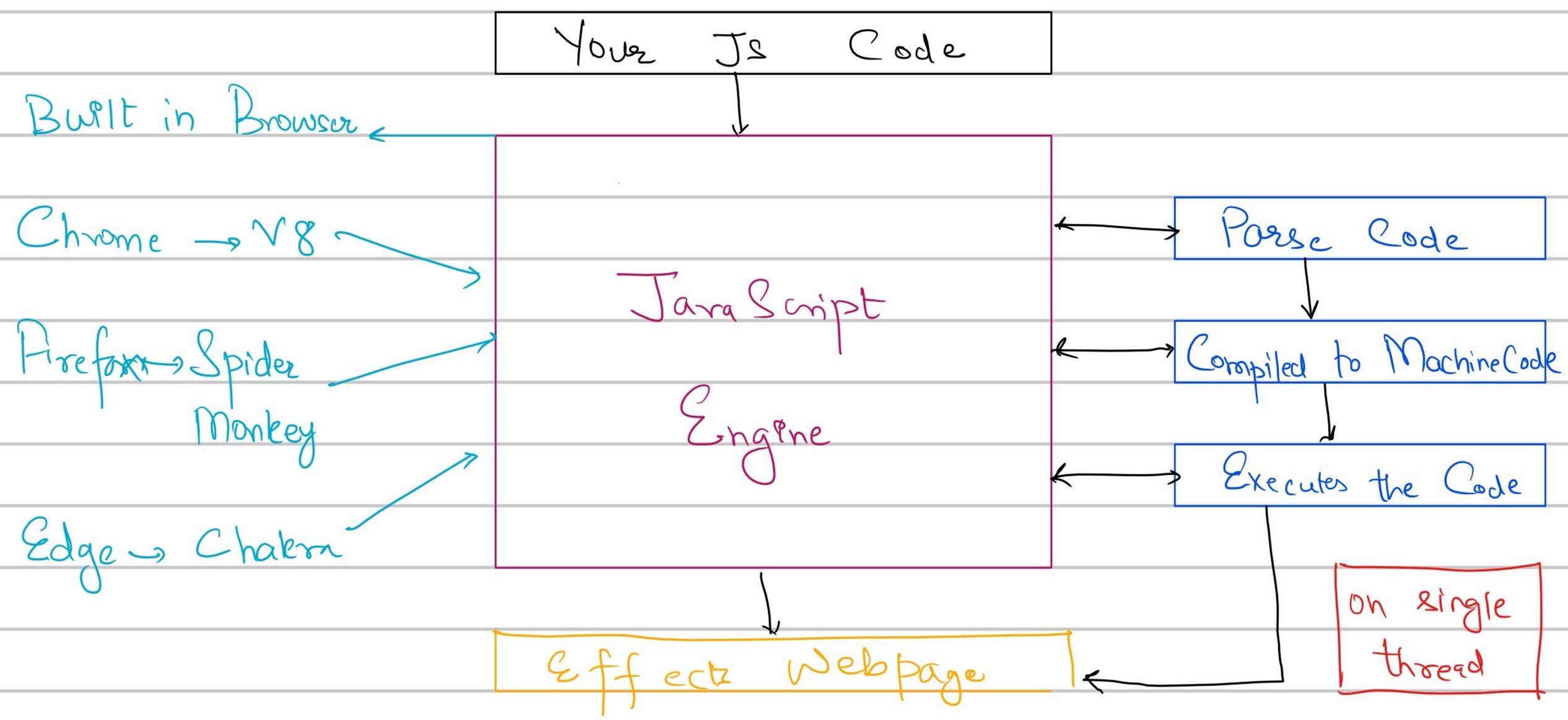
② Network Requests

③ Event Handling

↳ Mouse or Keyboard events

JavaScript Engine

↳ a program written in C++;
it goes through all the JavaScript code line by line & transforms it into something computer can understand.



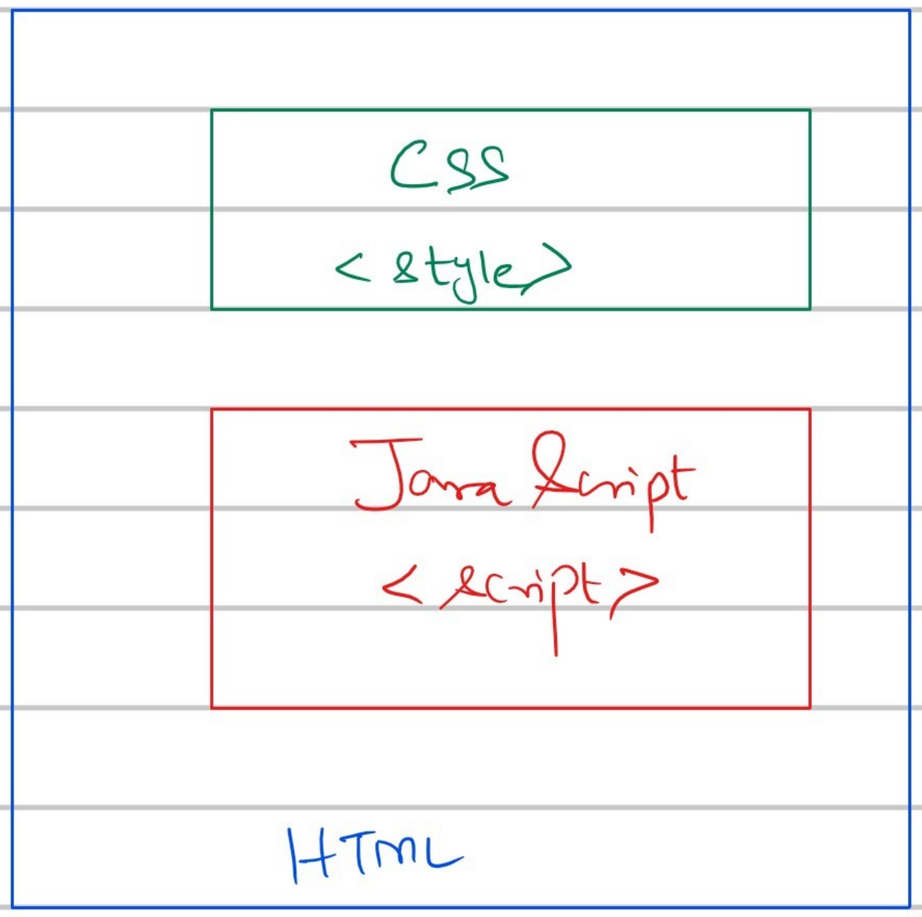
2008 → Google open sourced V8

2009 → Ryan Dahl → Node.js using V8

{ it made JS available for server side }

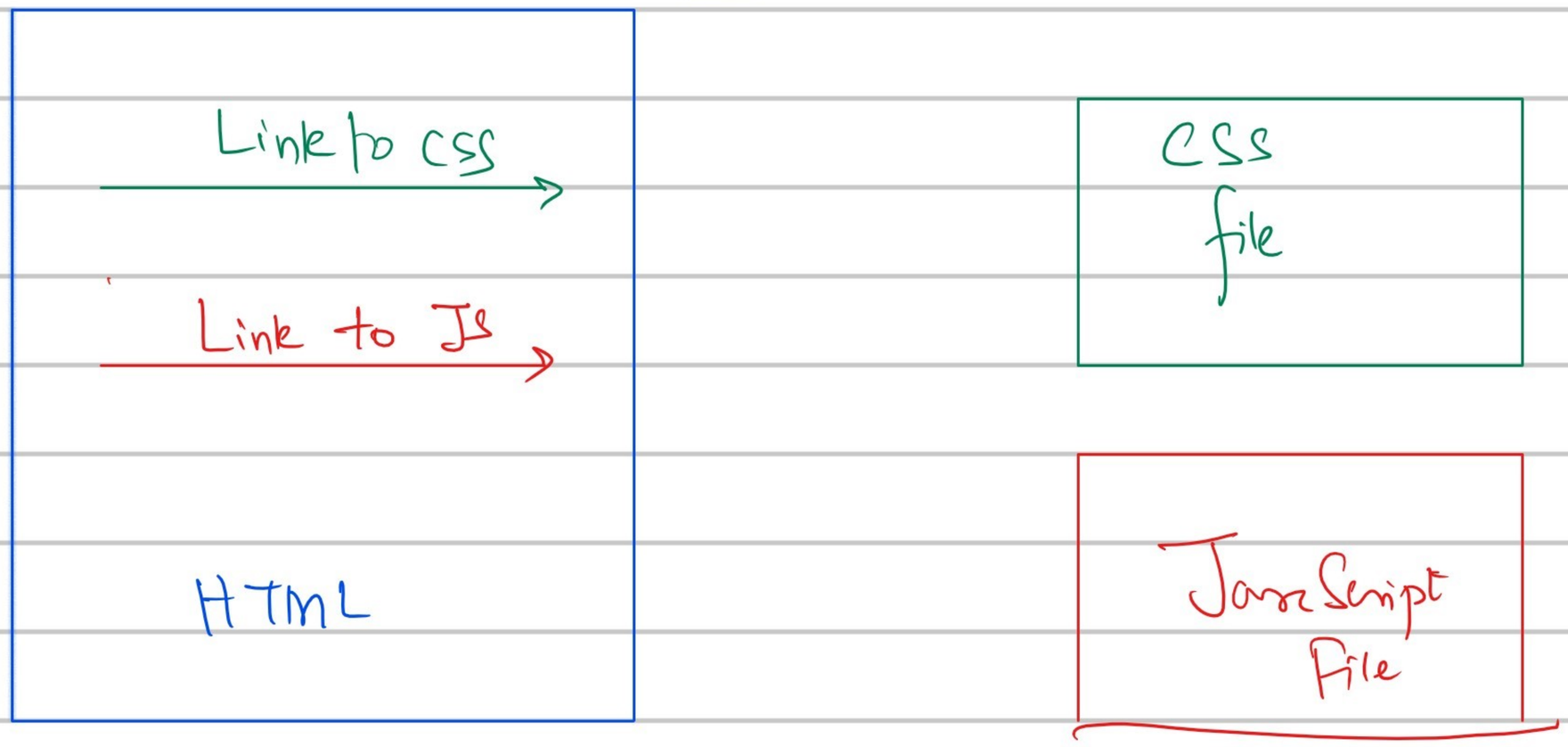
a runtime environment for JS outside the browser.

How JavaScript fit in with HTML



Can be done; but not a good approach

Seperation of Concerns



Data Types in JavaScript

number	2, -3, 23.45	→ calculations
string	'Hi', "Hi", `Hi`	→ display the output
boolean	true, false	→ dealing with conditions
object	{name: 'Zartab', age: 31}	→ grouping/organizing the data
array	[1, 2, 3, 4]	→ listing the elements

Important things to know before coding JS programs

var x;

typeof → what is the data-type of x

undefined

→ default value for uninitialized variable

→ Never assign undefined manually

null

→ Never assumed by default

→ can be assigned explicitly ↓ reset/clear

Not Entirely Equal

Variables → a container that holds the value which can vary.

var x = somevalue

let

const

```
let username = "Codewithz";
username = "zartab", ✓
```

A data container / data storage where the value can change

```
const totalCandidates = 20;
totalCandidates = 15; ✗
```

A data container / data storage where a value cannot change.

Functions

'CODE ON DEMAND'

collection of statements which needs to work together to achieve a specific task

DEFINE A FUNCTION

```
function greetUser(name){
    alert("Hello" + user);
}
```

for a function to execute it always has to be invoked

CALL A FUNCTION

```
greetUser('Zantab');
greetUser("Tom");
```

Syntax of a function

```
function nameOfFunction( parameter ) {
    ...
    return someValue;
}
```

- function → keyword
- nameOfFunction → unique Identifier
- parameter → optional
- ... → statements
- return someValue; → optional

If a function wants to return something; last statement should be a return.

define

```
function square(num){
    return num*num;
}
```

call

```
let sq = square(4);
```

Functions are like first class passengers in JS

* Function Expressions *

→ a function can be assigned to a variable

```
const cube = function (num) {
                return num*num*num;
                }

cube(3);
```

Scopes inside a function / program

global variable

local variable

```
var x;
function f1() {
    var x1;
    }
function f2() {
    var x2;
    }
```

Array → JavaScript

Array in JavaScript can hold any type of data

let a = [Tom, Alex, Mike, John]

Length → 4

Index →	0	1	2	3
	Tom	Alex	Mike	John

Index [0 ——— length-1]

Splice function

```
splice(start, deleteCount, item1, item2, itemN)
```

0 | 0

elements which will be added

Parameters

`start`

The index at which to start changing the array.

If greater than the length of the array, `start` will be set to the length of the array. In this case, no element will be deleted but the method will behave as an adding function, adding as many elements as items provided.

If negative, it will begin that many elements from the end of the array. (In this case, the origin `-1`, meaning `-n` is the index of the `n` th last element, and is therefore equivalent to the index of `array.length - n`.) If `start` is `-Infinity`, it will begin from index `0`.

`deleteCount` Optional

An integer indicating the number of elements in the array to remove from `start`.

If `deleteCount` is omitted, or if its value is equal to or larger than `array.length - start` (that is, if it is equal to or greater than the number of elements left in the array, starting at `start`), then all the elements from `start` to the end of the array will be deleted. However, it must not be omitted if there is any `item1` parameter.

If `deleteCount` is `0` or negative, no elements are removed. In this case, you should specify at least one new element (see below).

`item1, item2, ...` Optional

a, b, c

1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7

numbers.splice(2, 0, 'a', 'b', 'c')

Higher Order Functions

function which takes another function as an input or return a function from itself.

1, 2, 3, 4, 5

```
array.forEach( function() {
                          } )
```

1, 2, 3, 4, 5

```
array.forEach( function( item, index) {
                                      } );
```

pass each element

```
array.filter( function( item, index) {
                                      } )
```

true / false

return a boolean value

1, 2, 3

```
array.map( function( item, index) {
                                  return something;
                                  } )
```

* String Interpolation *

```
let s1 = "SCB"

let s2 = 'SCB'

let s3 = `SCB`
```

```
let name = "Ajay"
let company = "SCB"
let bankId = 12345
```

```
let line = name + " works as " + company + " his bank id is " + bankId;

let line = `${name} works at ${company} his bank id ${bankId}`
```

0 →	0	1	2	3	4	5	6	7
	S	t	a	n	d	a	r	d
1 →	1	2	3	4	5	6	7	8

0 based

1 based

slice (begin, end)

(2, 5)

Objects in JavaScript

→ group various values into a single object

```
let objName = {
    key : value,
    key : value,
    key : value,
    key : value,
    key : value,
}
```

key → string

value → can be of any type.

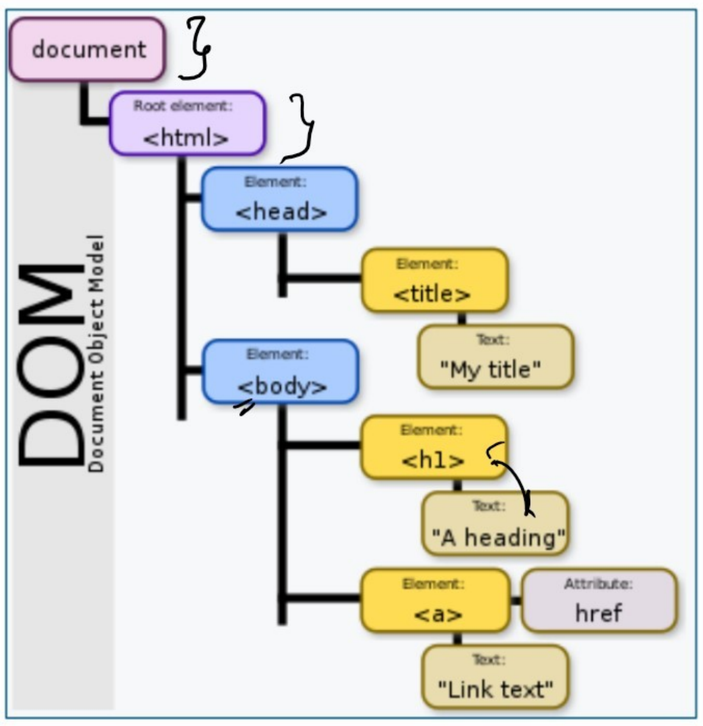
it can also be a function

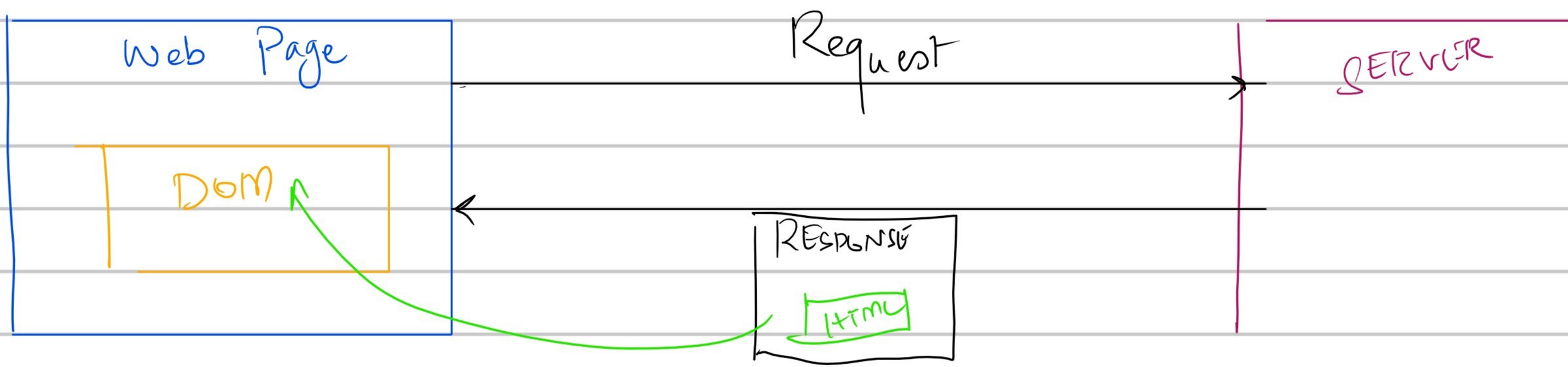
DOM

→ Document Object Model

object which represents a web-page in a way in which elements are structured in a web page

```
<html>

<head>
    <title>My Title</title>
</head>
<body>
    <h1>A heading</h1>
    <a href="#">Link Text</a>
</body>

</html>
```





document

getElement
By Id
By Tag
By class name

getElements

querySelector

querySelectorAll

Arrow Functions

=> ↳ cleaner way of creating traditional JS functions

```
(parameter1, parameter2, ....., parameterN) => {
    statement(s)
}
```

Arrow functions are either assigned to a variable or they are used as arguments to be passed to some function.

Class & Object

Class → a template or a blue print which is used to describe an object

Object → instance of a class

Human (class) → Mary, Tom, Alex (objects)

Casing

1. camelCasing → oneTwoThreeFour → variable / functions

2. Parcal Casing → OneTwoThreeFour → class