

- Anurag -

- BTech in Information Technology from VNR VJET, Hyderabad (2018 - 2022)
- ADP Intern 3 months (3rd yr, 2020)
 - ★ Sat - Contact, Free
- JPMC Intern 6 months (4th yr, 2022)
 - ★ Sun - Free
- JPMC FTE 1 yr (2022 - 2023)
 - Any Issues regarding program, platform issues, Batch Manager.
- AccoJob (2022 - 2024) (1.5 yrs +)
- Masters in CS at Indiana University Bloomington, United States (Aug 2023 - May 2025) (2 yrs)

- ★ 8pm - 11pm (3 hrs)
 - ★ You can ask doubts anytime in chat.
- 15 min break around 9:15 - 9:30 pm
- ★ For timings - 7pm - 10pm / 8pm - 9pm
 - ★ You can ask doubts (ask in chat, raise hand)

Goal:

1. Be Curious, learn things which you don't know

↓
don't learn
for interviews
(X)

↓
learn to be
an engineer.

↓
to solve problems

In this module,
Basic programming tools
(JS)

variable
data types
loops, conditions
functions
arrays, memory

using these
problem solving
(puzzles)



You need to code along with me! You will learn **ZERO** JavaScript skills by just sitting and watching me code. You have to code **YOURSELF!**

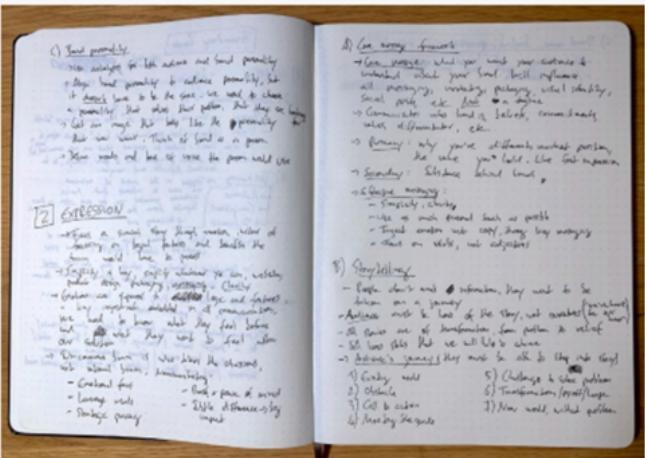
↳ practice





If you want the course material to stick, take notes. Notes on code syntax, notes on theory concepts, notes on everything!

- google doc, write paper, any other ways.



Totally non-coding... Try to understand a single word 😊



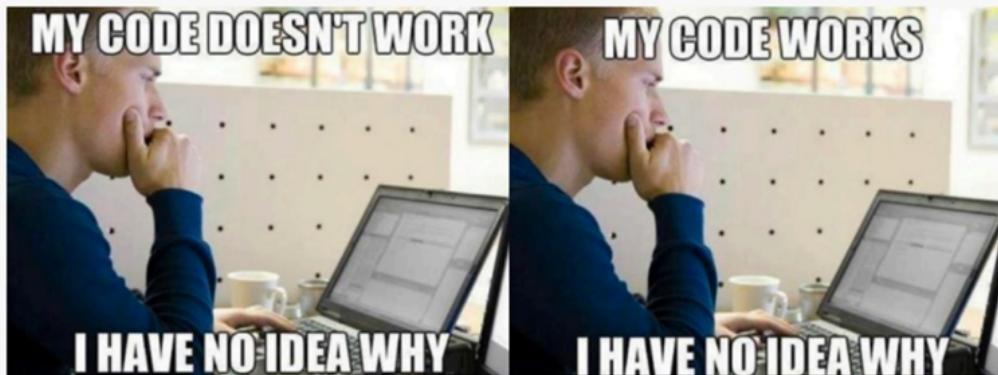


If this is your first time ever programming, please don't get overwhelmed. It's 100% normal that you will not understand everything at the beginning. *Just don't think "I guess coding is not for me"!*





In the first sections of the course, don't bother understanding **WHY** things work the way they do in JavaScript. Also, don't stress about efficient code, or fast code, or clean code. While learning, we just want to make things **WORK**. We will understand the **WHY** later in the course.



algo

Input

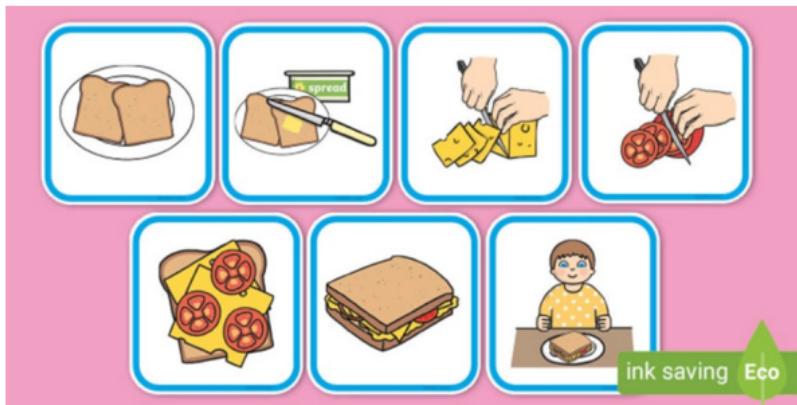
Ingredients. To make the sandwich, you need bread, peanut butter, and jelly.

Steps: The recipe (algorithm) gives you a set of clear steps to follow:

- a. Take two slices of bread.
- b. Spread peanut butter on one slice.
- c. Spread jelly on the other slice.
- d. Put the two slices together with the spreads facing each other.
- e. Press gently to make the sandwich.

Result. If you follow these steps correctly, you'll end up with a delicious peanut butter and jelly sandwich.

Output



this is an algorithm to
make a sandwich

→ Steps to solve a problem

→ Steps should be finite
(end)

What is an Algorithm?



Finding the Largest Number in a List

Inputs:

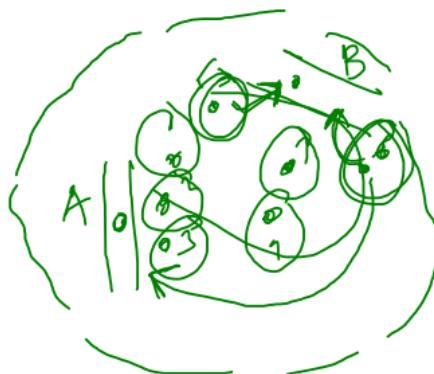
- A list of numbers.

Output:

- The largest number in the list.

Steps:

1. Start with the first number in the list and call it the "current maximum."
2. Compare the "current maximum" with the next number in the list.
3. If the next number is larger than the "current maximum," update the "current maximum" to be the next number.
4. If the next number is not larger, keep the "current maximum" as it is.
5. Repeat step 2 for each number in the list until you have compared all the numbers.
6. The "current maximum" after going through the entire list is the largest number.



In real world IP, op but Algorithm we need to think.

place order → assign to delivery boy

priority should be for delivery boy nearest to restaurant.

Steps:

1. Start with the first number in the list and call it the "current maximum."
2. Compare the "current maximum" with the next number in the list.
 - a. If the next number is larger than the "current maximum," update the "current maximum" to be the next number.
 - b. If the next number is not larger, keep the "current maximum" as it is.
3. Repeat step 2 for each number in the list until you have compared all the numbers.
4. The "current maximum" after going through the entire list is the largest number.

*** Arrays ***

Find an maximum element in a Array

Input: [12, 5, 23, 9, 18, 27, 6]

Output: largest in list \rightarrow 27 ✓

Current Maximum = ~~12~~ ²³ ~~23~~ ²⁷ ~~27~~ ^{ans} =

next Number = 5

23 9 18 27 6

If

a. next Number > current Maximum

5 > 12 (no update)

23 > 12 (update)

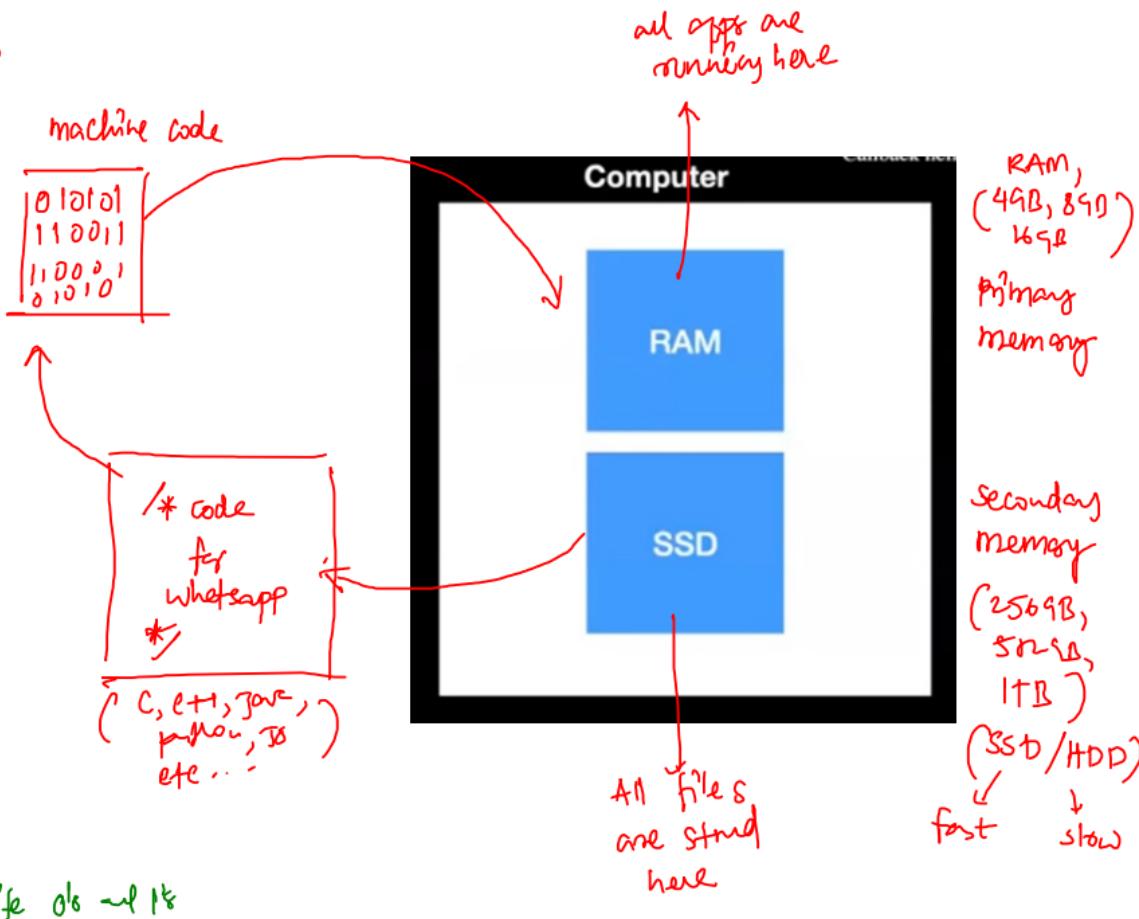
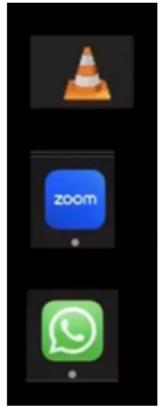
9 > 23 (no update)

18 > 23 (no update)

27 > 23 (update)

6 > 27 (no update)

Why do we need languages ?

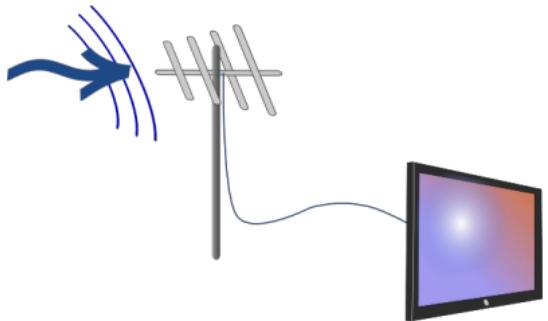


- * Computers can understand only 0's and 1's
- * hence we use english based languages as we cannot write 0's and 1's

Computers can understand only binary 0's and 1's

1.In the morning, you turn on your TV and watch news, cartoons, movies or whatever you like. Your TV receives Radio waves, that it changes to picture.

2.Your phone rings; you pick it up and start to talk with your friend, family member or colleague. During your conversation, your mobile changes your spoken words to electrical signals, that travel all the way to the receiver, and then his/her phone changes the signals to sound again, and Vice Versa.

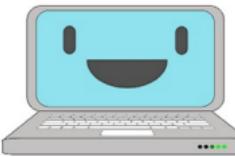


Calculate
 $25 * 25$



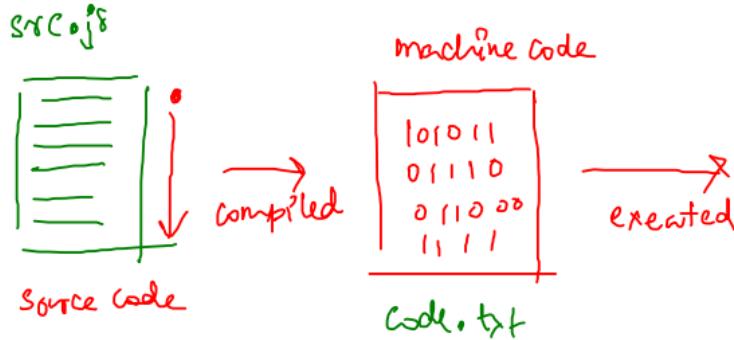
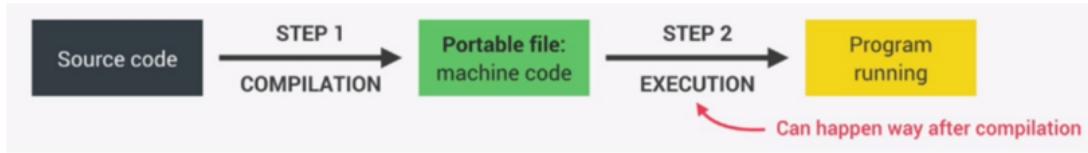
??

Calculate
 $11001 * 11001$



100110001

Compiled Language



++ → mingw

Java → JVM, JRE

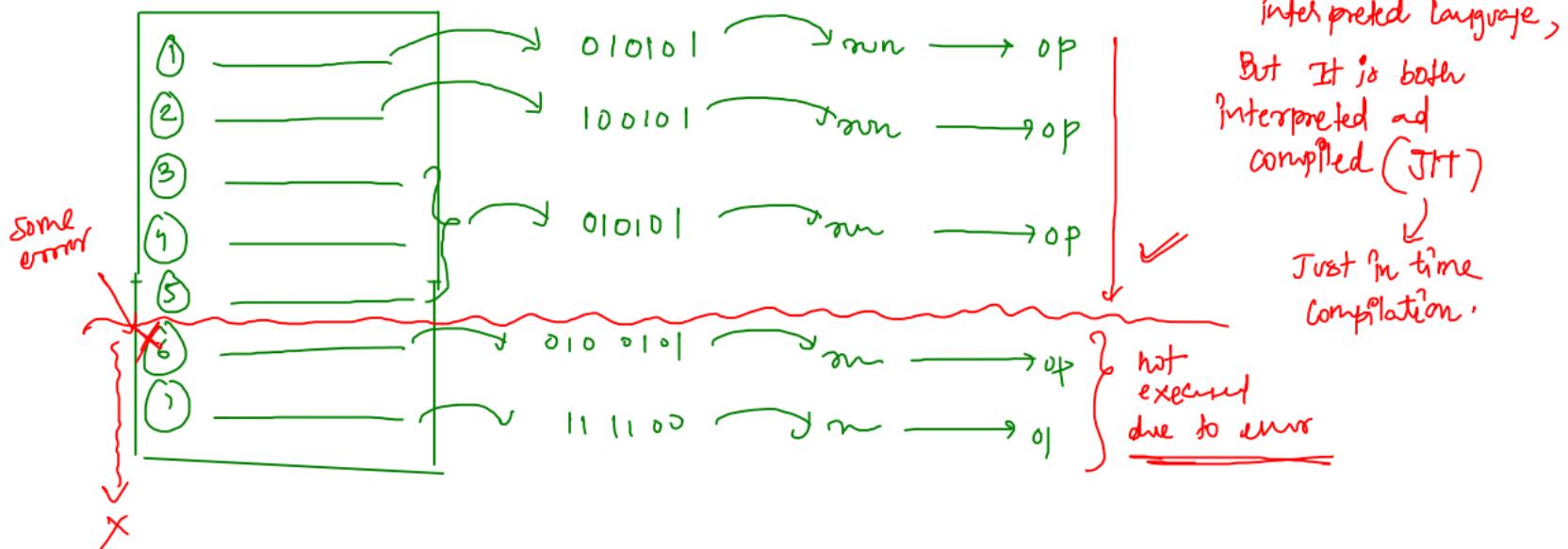
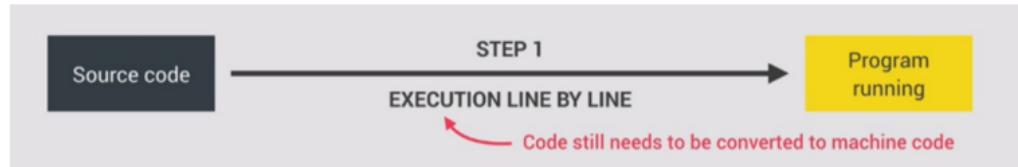
python → python

JS → JS engine *

1. Using compiler you can generate machine code and store locally (SSD)
2. You give this machine code to your friend and he can run without installing any software!

* If there are any errors in source code, errors may be syntax errors etc., compiler will not generate machine code & gives an error

Interpreted Language



* If there is any error, stopped in middle (partial run)

Compiled vs Interpreted

Let's say you want to make a cup of tea, you go to Google and search for the ingredients list, this is what you came up with:

Tea powder, Water, Sugar (optional), Milk

There are 2 ways to make the tea, the Compiler or the Interpreter way.

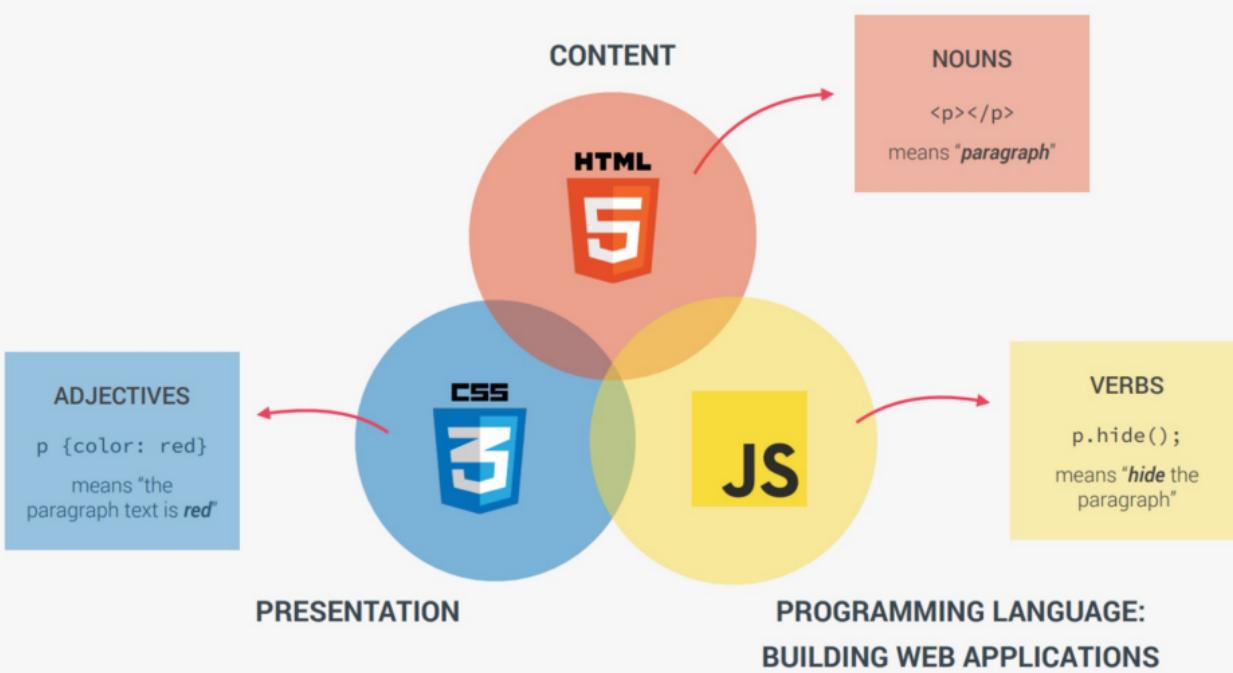
a.The compiler will first, before doing any preparation, organize all the ingredients in front of him, the specific amounts of every ingredient, only then, he will prepare using the ready components of the tea.

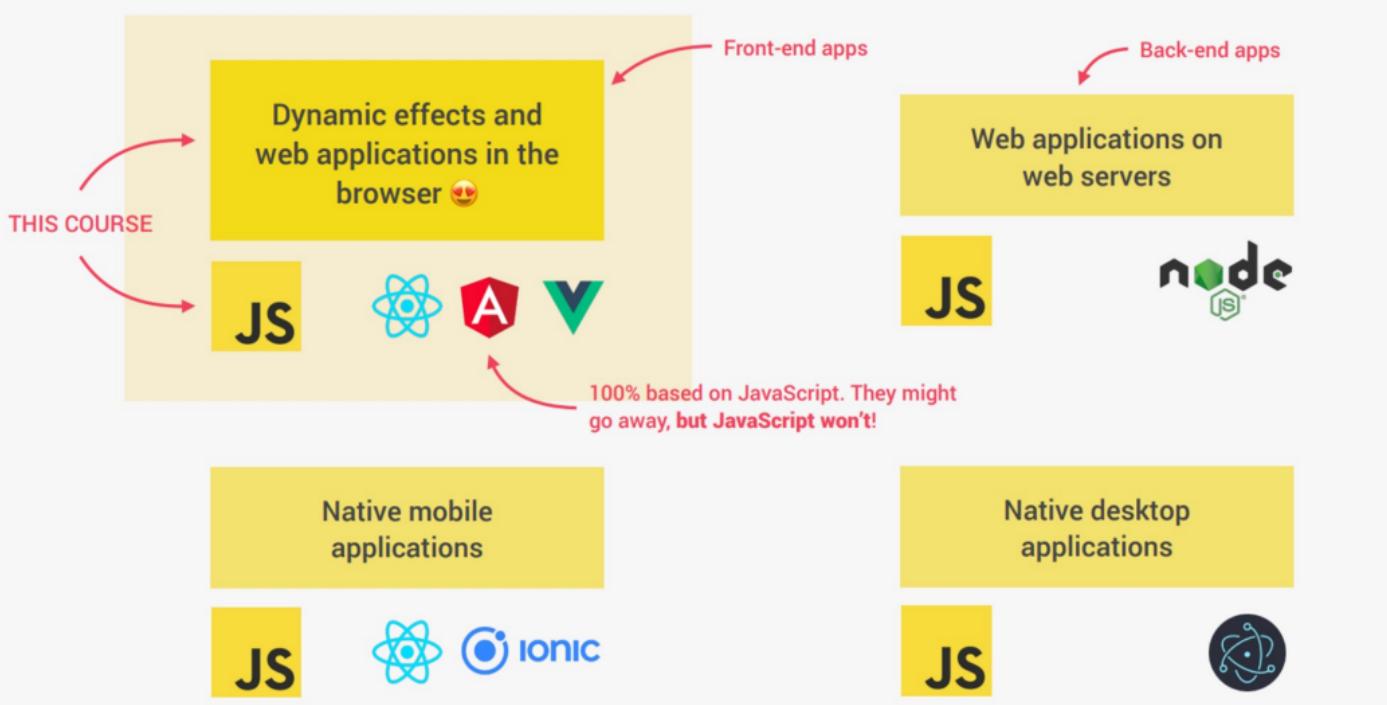
b.The interpreter will take his cup and will start by reading the ingredients, line by line. he will boil the water, add the tea powder, mix them for a few minutes, add sugar or milk if desired, and then strain the tea into the cup.

The build (preparation) time of the compiler will be longer than the interpreter's. However, the run (steeping) time will be much shorter.



THE ROLE OF JAVASCRIPT IN WEB DEVELOPMENT

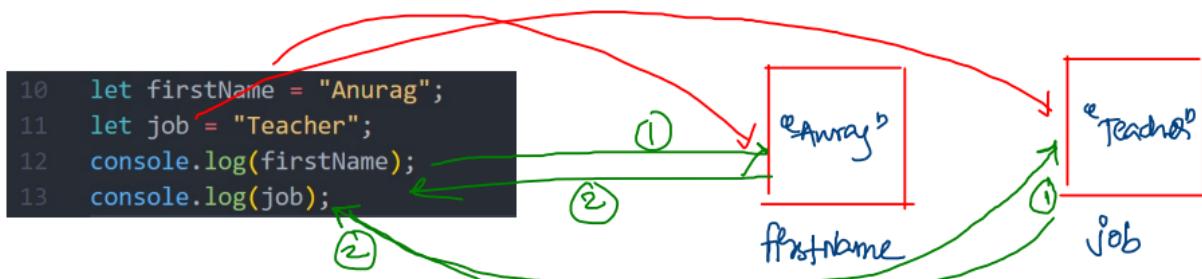




Value : Any piece of information

Variable : → Variable are used to store values.

Syntax: let givesomeName = value;



cl(firstName) ⇒ "Anurag"

1. JS will check if there
any variable with that name
in the RAM.

2. If yes get the value.

3. If not there (Reference Error: not defined) **

1. Box created in RAM

(memory is allocated in RAM)

2. Store the value inside that Box.

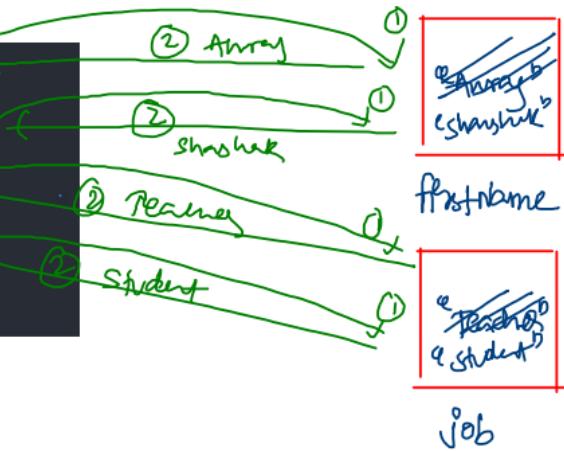
```

17 console.log(firstName);
18 firstName = "Shashank";
19 console.log(firstName);
20
21 console.log(job);
22 job = "Student";
23 console.log(job);
24
25 console.log(firstName);
26 console.log(job);

```

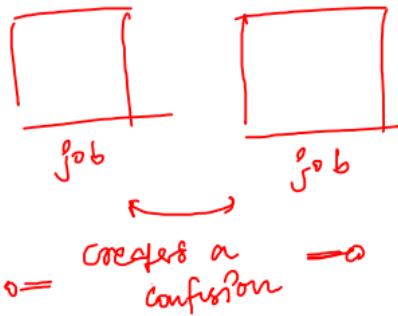
Op:

- Anvrag
- Shashank
- Teacher
- student
- Shashank
- student



let job = "teacher"
let job = ' student'
(gives an error)

→ you cannot same variable



* A variable can take any value & keeps on changing.