

* Type Conversion:

const birthYear = "2001"

Q&A: find the year after 23 years?

cl(birthYear + 23);

↓

"2001" + 23 → "200123" ✗

* Number → string
(2001) → "2001"

string(givenNumber)
String(2001) → "2001"

* Number("123abc");
→ NaN (not a number)
typeof NaN → number

We need to convert "2001" (string) → 2001 (number)

const birthYearNum = Number(birthYear)	= parseInt(birthYear)	* Number("423.45")
= Number("2001")	= parseInt("2001")	→ 123.45
= 2001	= 2001	parseInt("123.45") → 123

- * Number ("1234abc") → NaN (when type conversions
use Number only)
 - parseInt ("1234abc") → 1234
 - parseInt ("1x23abc") → 1
 - ⇒ parseInt returns the number until 1st non numeric character.
-

* Type Coercion : Automatic Type Conversion by JS

- eg: "I am" + 22 + " years old"
- * S + N only for "+" ① "I am" + 22 (string) + (number)
S + S
- * S - S → N - N
S - N → N - N
any operator except "+" (S) → (N)
- ② "I am 22"
+ " years old"
⇒ "I am 22 years old"
- auto conversion → Type Coercion
- "I am" + "22" (string) + (string)
⇒ "I am 22"

$$\textcircled{1} \quad \underbrace{\text{'23'}}_{\text{string}} + \text{10} + \text{5}$$

a. $\text{'23'} + \text{10}$ (string) + (number)

$$\text{'23'} + \text{"10"} \Rightarrow \text{'2310'}$$

b. $\text{'2310'} + \text{5}$ (string) + (number)

$$\text{'2310'} + \text{"5"} \Rightarrow \text{'23105'}$$

$$\text{"23"} + \text{10} + \text{5}$$

$$\swarrow \quad \downarrow$$

$$\text{'2310'} + \text{5}$$

$$\swarrow \quad \downarrow$$

$$\text{'23105'}$$

$$\textcircled{2} \quad 5 + \text{10} + \text{'23'}$$

a. $5 + 10 = 15$

b. $15 + \text{'23'}$ (number) + (string)

$$\text{'15'} + \text{"23"} \Rightarrow \text{'1523'}$$

$\textcircled{4} \quad \text{'23'} \text{ } \begin{smallmatrix} \text{II} \\ \text{O} \end{smallmatrix} \text{ } \begin{smallmatrix} \text{II} \\ \text{O} \end{smallmatrix} \text{ } \begin{smallmatrix} \text{II} \\ \text{O} \end{smallmatrix} \text{ } \begin{smallmatrix} \text{L} \rightarrow \text{R} \\ \text{O} \end{smallmatrix} \text{ } 5$

a. $\text{'23'} - \text{"10"}$

$$23 - 10 = 13$$

b. $13 + 5 = 18$

$$\textcircled{3} \quad 5 + \text{'23'} + \text{10}$$

a. $5 + \text{'23'}$

$$\text{'5'} + \text{'23'} \Rightarrow \text{'523'}$$

$$\textcircled{5} \quad \text{'23'} * 2$$

$\text{'23'} * 2$

$$23 * 2 = 46$$

b. $\text{'523'} + \text{10}$

$$\text{'523'} + \text{"10"} \Rightarrow \text{'52310'}$$

* precedence :

$$\begin{array}{c} L \rightarrow R \\ || \quad || \\ 93 \ominus 10 \oplus 5 \end{array}$$

Eg:

$$\textcircled{1} \quad 23 - 10 = 13$$

$$\textcircled{2} \quad 13 + 5 = 18$$

* Always try to use Brackets to avoid confusion

$$\begin{array}{c} \cancel{\textcircled{1}} \quad \cancel{-10 + 5} = -5 \\ \cancel{\textcircled{2}} \quad \cancel{23 - 5} = 18 \end{array}$$

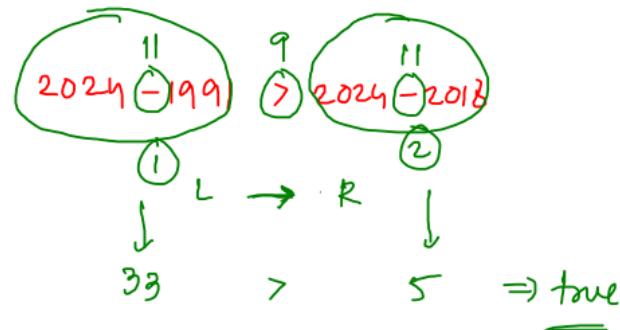
Eg:

$$2024 - 1991 > 2024 - 2019$$

$$33 > 2024 - 2018$$

$$\begin{array}{c} \textcircled{2} \\ \text{let } num = 5 \\ \textcircled{2} \\ L \leftarrow R \end{array}$$

$$\begin{array}{c} \text{false} - 2018 \\ \text{false} \\ 0 - 2018 \\ = -2018 \end{array}$$



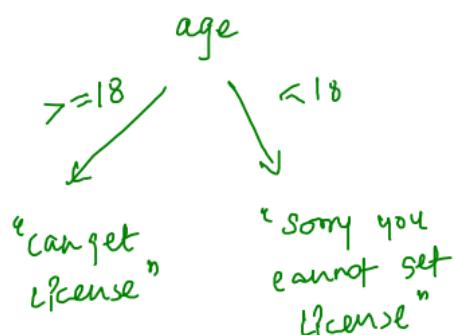
$$\begin{array}{c} \textcircled{1} \\ 2024 - 1991 \\ \textcircled{2} \\ 2024 - 2019 \end{array} >$$

$$\begin{array}{c} \textcircled{3} \\ 33 \\ \textcircled{4} \\ 5 \end{array} >$$

\Rightarrow true

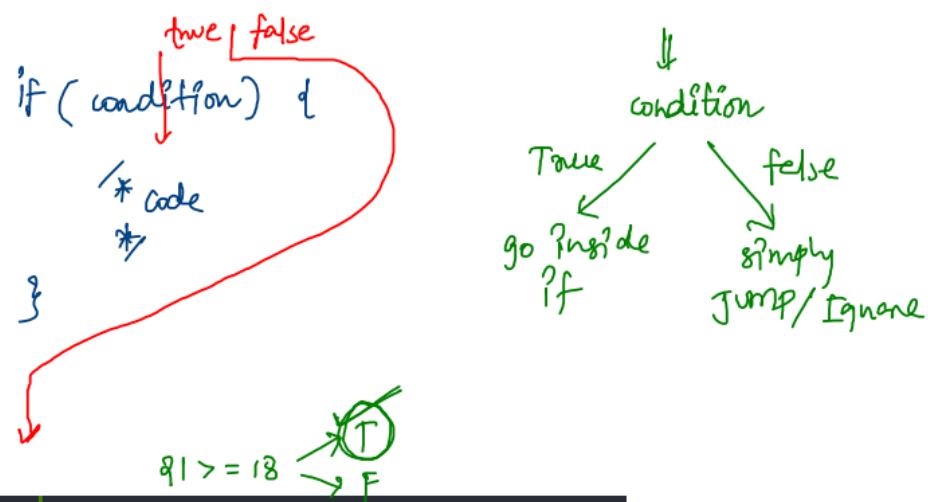
1. Identify operators, assign precedence
2. Evaluate the ones from highest \rightarrow lowest
3. when equal precedence follow associativity.

* If - else statements :



Q : Can you write single else without any if ? NO

always else is paired with If statement. But you can write multiple If without any else.



```

261 const age = 21;
262 console.log("before IF");
263 if (age >= 18) {
264     console.log("I can get drivers license");
265 }
266 console.log("After If");
  
```

```

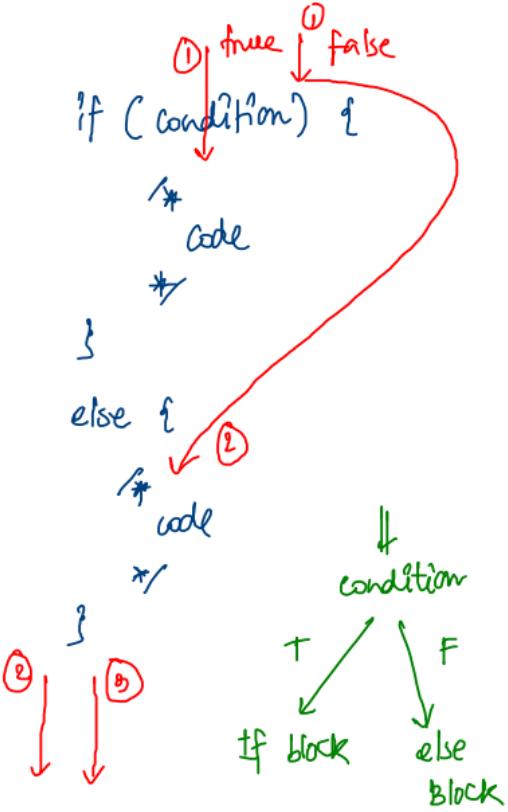
261 const age = 16;
262 console.log("before IF");
263 if (age >= 18) {
264     console.log("I can get drivers license");
265 }
266 console.log("After If");
  
```

op: before If

I can get . . .
After If

op: before If

After If



```

const age = 21;
console.log("before If else");

if (age >= 18) {
  console.log("I can get driver's license");
} else {
  console.log("Sorry you cannot take driver's license");
}

console.log("After If else");
  
```

Handwritten annotations: $age >= 18$ is circled with 'T' above and 'F' below. The output 'I can get driver's license' is circled with 'T'.

OP : before If else
I can get driver's license
After If else

```

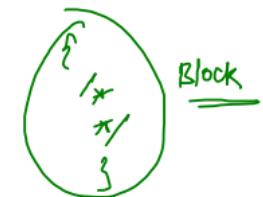
const age = 16;
console.log("before If else");

if (age >= 18) {
  console.log("I can get driver's license");
} else {
  console.log("Sorry you cannot take driver's license");
}

console.log("After If else");
  
```

Handwritten annotations: $age >= 18$ is circled with 'F' above and 'T' below. The output 'Sorry you cannot take driver's license' is circled with 'F'.

OP : before If else
Sorry you cannot take driver's license
After If else



* Experimenting If - else :

①

```
367 const day = "wednesday";
368 if (day == "monday") {
369   console.log("I have to go for a doctor appointment");
370 }
371 if (day == "monday") {
372   console.log("I have to go for shopping");
373 }
374 if (day == "tuesday") {
375   console.log("I have an exam");
376   console.log("I have a weddding to attend");
377 } else {
378   console.log("I dont know what to do"); ✓✓
379 }
```

378

③

```
367 const day = "monday";
368 if (day == "monday") {
369   console.log("I have to go for a doctor appointment");
370 } else {
371   console.log("I dont know what to do");
372 }
373 if (day == "monday") {
374   console.log("I have to go for shopping");
375 }
376 if (day == "tuesday") {
377   console.log("I have an exam");
378   console.log("I have a weddding to attend");
379 }
```

369, 374

②

```
367 const day = "monday";
368 if (day == "monday") {
369   console.log("I have to go for a doctor appointment");
370 }
371 if (day == "monday") {
372   console.log("I have to go for shopping");
373 }
374 if (day == "tuesday") {
375   console.log("I have an exam");
376   console.log("I have a weddding to attend");
377 } else {
378   console.log("I dont know what to do");
379 }
```

④

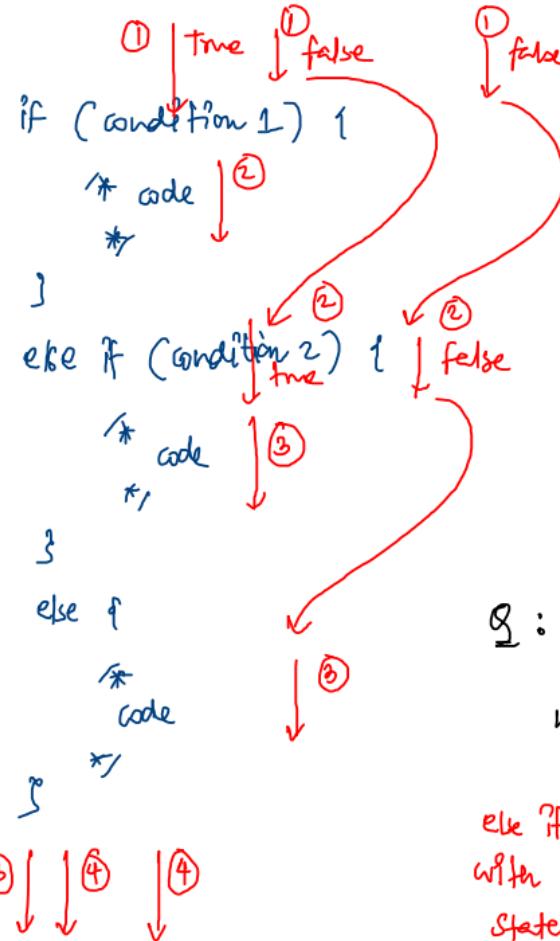
```
367 const day = "tuesday";
368 if (day == "monday") {
369   console.log("I have to go for a doctor appointment");
370 } else {
371   console.log("I dont know what to do");
372 }
373 if (day == "monday") {
374   console.log("I have to go for shopping");
375 }
376 if (day == "tuesday") {
377   console.log("I have an exam");
378   console.log("I have a weddding to attend");
379 }
```

371, 377, 378

* else if statement :

```
284 const day = "abcd"; // thursday  
285 if (day == "monday") {  
286     console.log("Plan course structure");  
287 } else if (day == "tuesday") {  
288     console.log("Prepare for exams");  
289 } else if (day == "wednesday") {  
290     console.log("Write examples for coding lectures");  
291 } else if (day == "thursday") {  
292     console.log("Watch recordings");  
293 } else if (day == "friday") {  
294     console.log("solve assignments");  
295 } else if (day == "saturday") {  
296     console.log("Revise all notes");  
297 } else if (day == "sunday") {  
298     console.log("attempt contest");  
299 } else {  
300     console.log("Please enter a valid day");  
301 }  
302 }
```

op: please enter a valid day



Q : can you write
single else if
without if ?

NO

else if will paired
with previous if
statement.

* $= =$ \neq $== =$:

① $1 == 1 \rightarrow \text{true}$

② $1 == "1" \rightarrow \text{true}$

③ $1 === 1 \rightarrow \text{true}$

④ $1 === "1" \rightarrow \text{false}$
number string

⑤ $1 == \text{true} \rightarrow \text{true}$

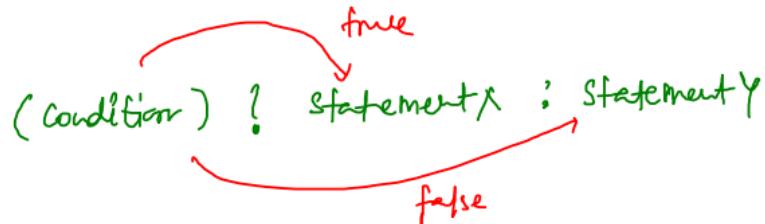
⑥ $1 === \text{true} \rightarrow \text{false}$

$==$ only checks the value (loose checking)

$== =$ checks both value and
their data types (strict checking)

* Ternary Operator :

(short hand if)



```
305 const age = 18;  
306 if (age >= 21) {  
307   console.log("Can drink alcohol");  
308 } else {  
309   console.log("Cannot drink alcohol");  
310 }  
311  
312 age >= 21  
313   ? console.log("Can drink alcohol")  
314   : console.log("Cannot drink alcohol");
```

* useful in React .