Data structure :-

Software

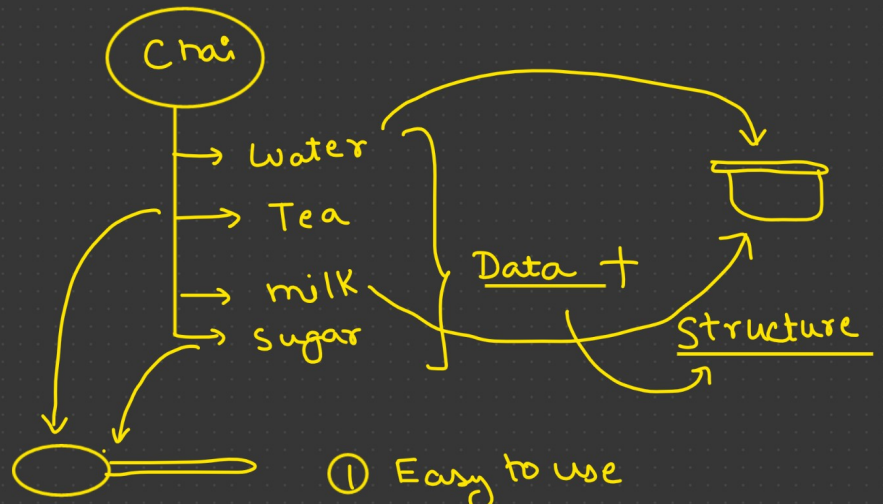
↓

Add 2 number

↳ (2 no.)

Data + Variable

int, float, double



① Easy to use
② Easy to modify
③ Easy to Access

DSA → Algorithm

✓ ?

→ steps to be followed

Shirt
Shoe

Software

→ 1 → 10/-
→ 2 → 100/-
→ 3 → free
→ 4 → 1000/-

} X

① Software

100 lines code

② Software

2 lines code

```
for( int i=1 ; i<=9; i++)
{
    if ( ball[i] > wt)
        wt = ball[i];
}
```

8 times Comparision

9 balls → 8 balls wt same
→ 1 ball heavy

③ ③ ③
A B C

A == B
X
6 balls reject

C → ③ → ① ① ①

① A == B → C
② A > B → A
③ A < B → B

① Software

input

10 → 1 Sec

② Software

5 sec

1000000
X

Machine → Background

A B

```
int a[9] = {1, 1, 1, 2, 1, 1, 1, 1, 1};
int A = a[0] + a[1] + a[2];
int B = a[3] + a[4] + a[5];
int C = a[6] + a[7] + a[8];

if ( A == B)
{
    if ( a[6] > a[7])
        return a[6];
    elsif ( a[7] > a[6])
        return a[7];
    else return a[8];
}
else if ( A > B)
{

}
else
{

}
```

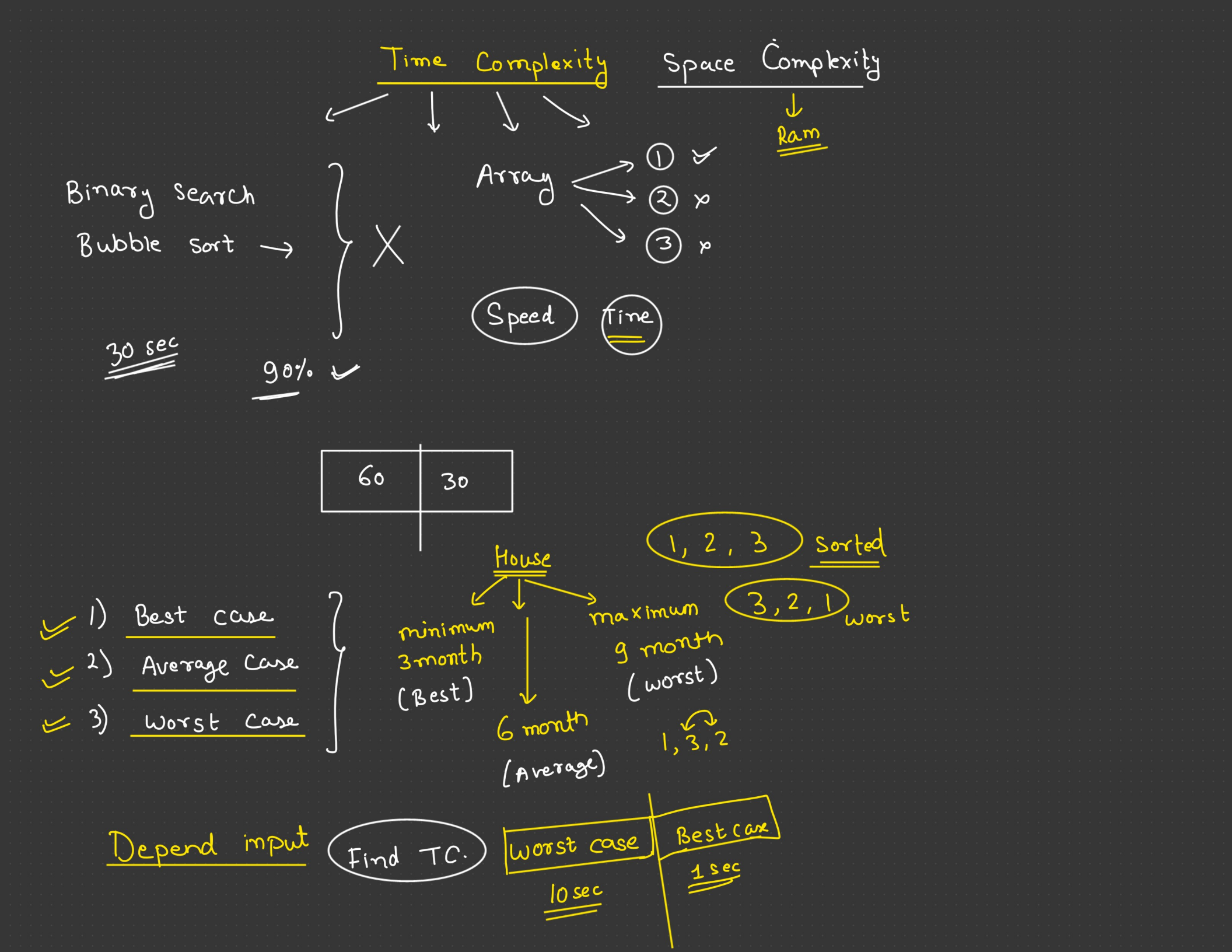
20-25 lines

① A , B
② C

2 comparison

$\frac{8}{4} = 2$

4 times Better


Time Complexity
Space Complexity
Ram
Binary Search
Bubble sort
Array
1
2
3
Speed
Time
30 sec
90%
60
30
House
1, 2, 3
Sorted
3, 2, 1
worst
minimum
3 month
(Best)
maximum
9 month
(worst)
6 month
(Average)
1, 3, 2
1) Best case
2) Average case
3) Worst case
Depend input
Find TC.
Worst case
Best case
1 sec
10 sec

length measure

m, cm, Km

milk measure:-

l, ml

Notations:-

1) Best case — Ω (omega notation)
2) Average case — θ (Theta notation)
3) Worst case — O (Big-O notation)