Some advice on Loop

Loop is a very common and powerful coding structure when you want to execute repetitive code (might exactly the same or some items changes). The most difficult part is to generalize a repetitive procedure for each loop

One simple example of loop is iterating an array and print its value. Before we turn to loop structure, we might manually type "System.out.println()" multiple times. This could be exhausting if we have a very long array. And notice that, even though we the value or arguments of method "System.out.println()" are different, we always' call "System.out.println()". So that is when loop structure comes in.

```
int[] a={1,2,3,4};
for(int i=0;i<a.length;i++){
    System.out.println(a[i]);
}
```

In above lines of code, the repetitive procedure for each loop is to print a value and the value is not fixed in each loop.

Another example is simulating a certain process. Please recall the pandemic exercise.

```
while(totalNum<population){
    day++; //a new day begin!
    totalNum=totalNum*(infectRate+1);// update total cases
}
```

In each new day, the process of infection spread is the same mathematically. Only two items are updated.

So, before you write loop code as a beginner, please do the simulation manually on paper for multiple loops to generalize a common pattern or procedure(Just like solution design in this repo).

for loop, while-do and do-while are equivalent. It is very helpful to use all statements on the same problem as a practice.

When choosing which statement to use, I would prefer for-loop when the number of loops is very clear(it can be clearly defined by statements in for) and while-do otherwise.