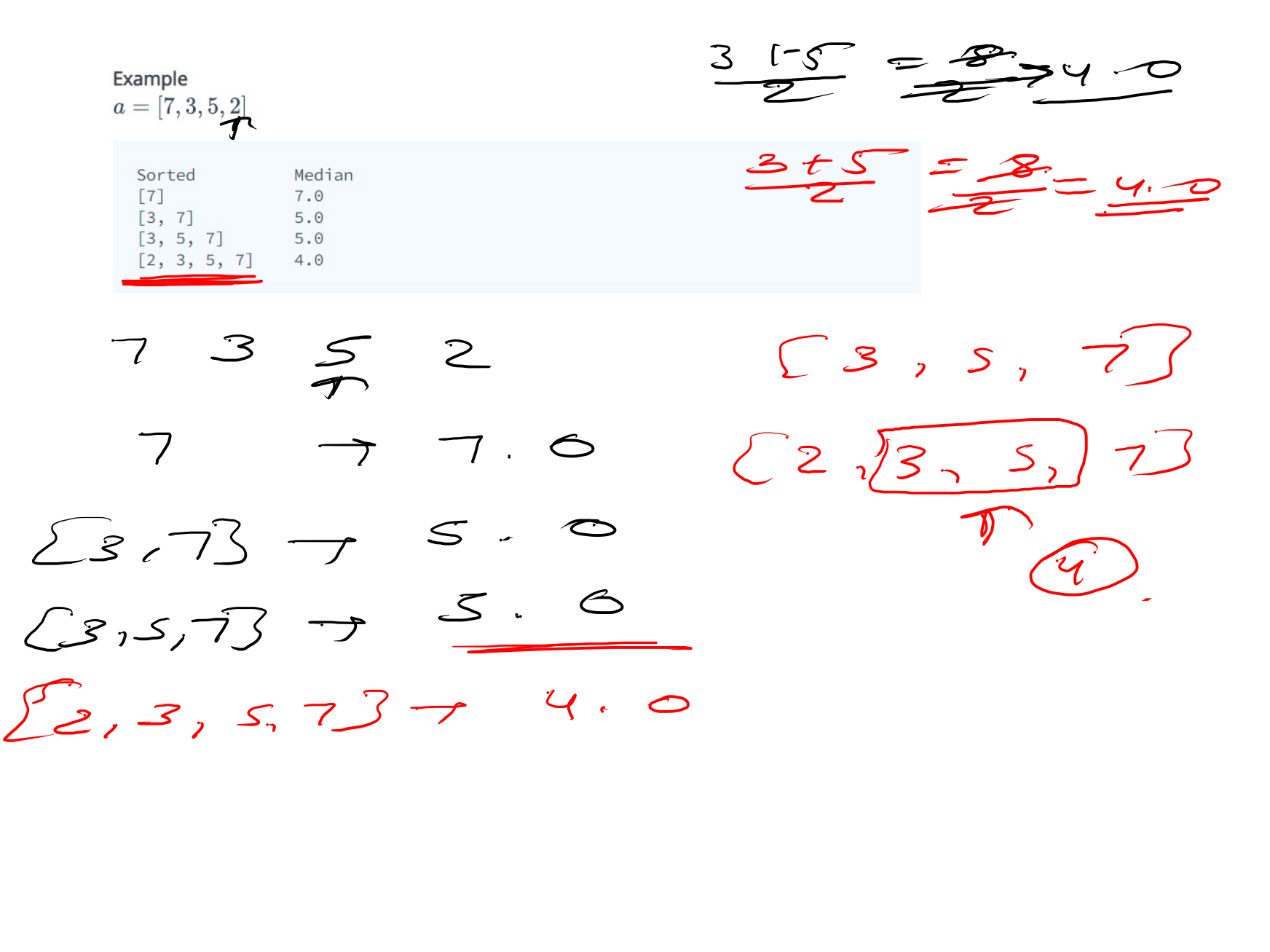
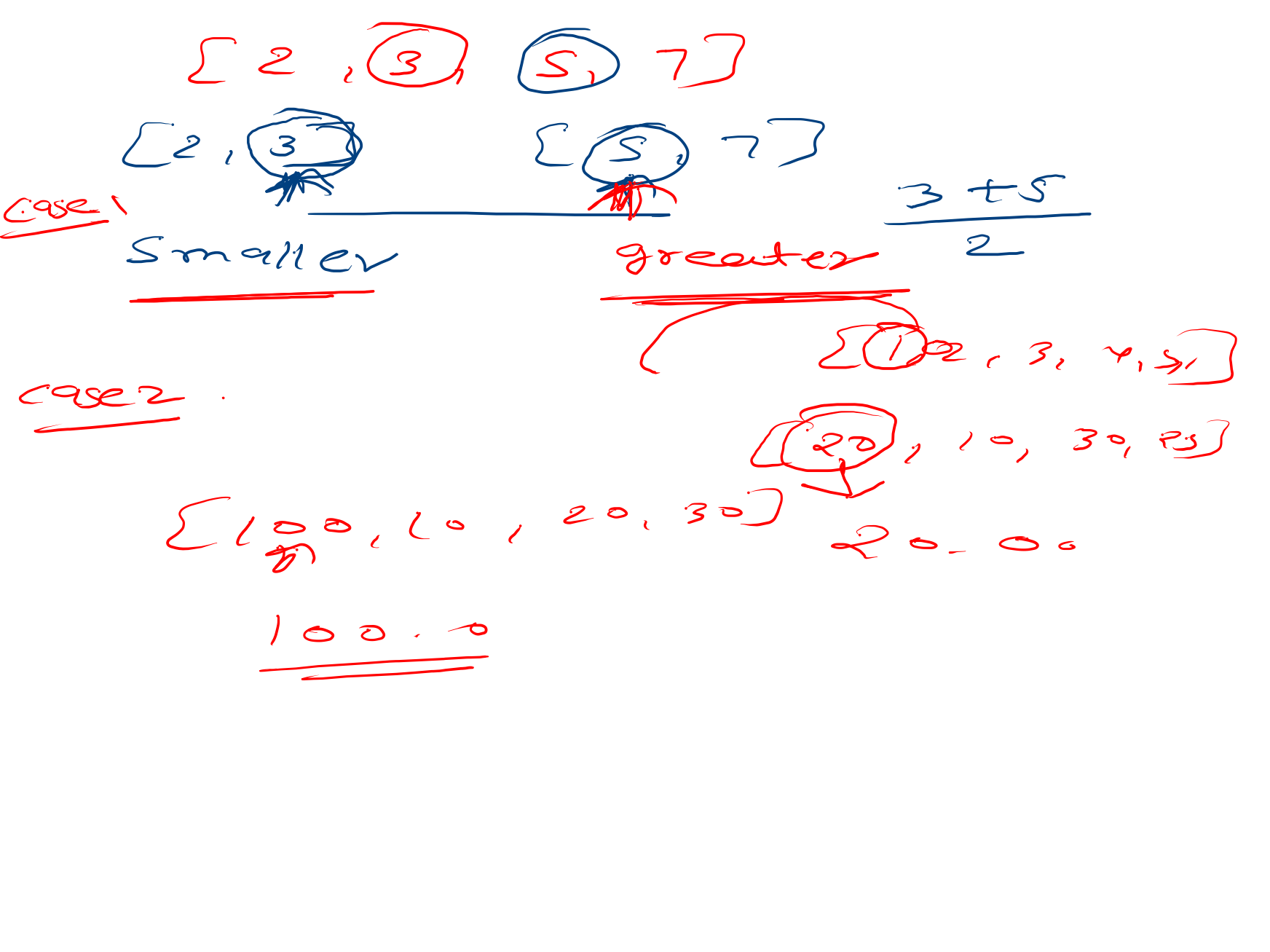
Example

$a = [7, 3, 5, 2]$

Sorted	Median
[7]	7.0
[3, 7]	5.0
[3, 5, 7]	5.0
[2, 3, 5, 7]	4.0




[2, 3, 5, 7]
[2, 3
[5, 7]
case 1
smaller
greater
3+5
2
[1, 2, 3, 4, 5]
case 2
20, 10, 30, 25]
[100, 10, 20, 30]
20.00
100.0

```
STDIN   Function
-----   --------
6       a[] size n = 6
12      a = [12, 4, 5, 3, 8, 7]
4
5
3
8
7
```

for (i = 1 ;

Collections.reverseOrder()

Smaller — ① | ② — greater

4

5

12

[12.0, 8.0, 5.0 ...]

Find the Running Median

```
List<Double> list = new ArrayList<>();
double med = a.get(0);
list.add(med);
PriorityQueue<Integer> smaller = new PriorityQueue<>(Collections.reverseOrder());
PriorityQueue<Integer> greater = new PriorityQueue<>();
smaller.add(a.get(0));
for(int i=1;i<a.size();i++){
    int x = a.get(i);
    if(smaller.size()>greater.size()){
        if(x<med){
            greater.add(smaller.poll());
            smaller.add(x);
        }else{
            greater.add(x);
        }
        med = (double)(smaller.peek()+greater.peek())/2;

    }else if(smaller.size()==greater.size()){
        if(x<med){
            smaller.add(x);
            med = (double)(smaller.peek());
        }else{
            greater.add(x);
            med = (double)(greater.peek());
        }
    }else{
        if(x>med){
            smaller.add(greater.poll());
            greater.add(x);
        }else{
            smaller.add(x);
        }
          med = (double)(smaller.peek()+greater.peek())/2;

    }
    list.add(med);

}
return list;
```

OOPS

1. OOPS → Not a programming Language

2. object is a physical entity
   + Living
   + Non Living

3. Applications.

4.

Class & Object

int [] arr = new int [5]

String [] name = new String [5]

class Emp
{

id

name

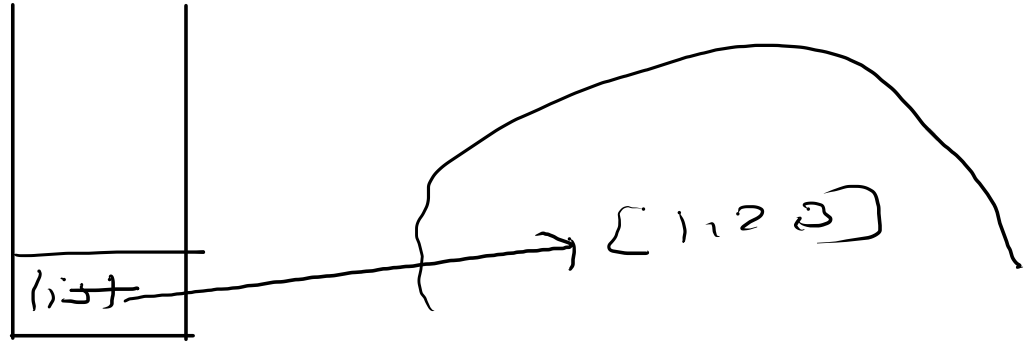
salary

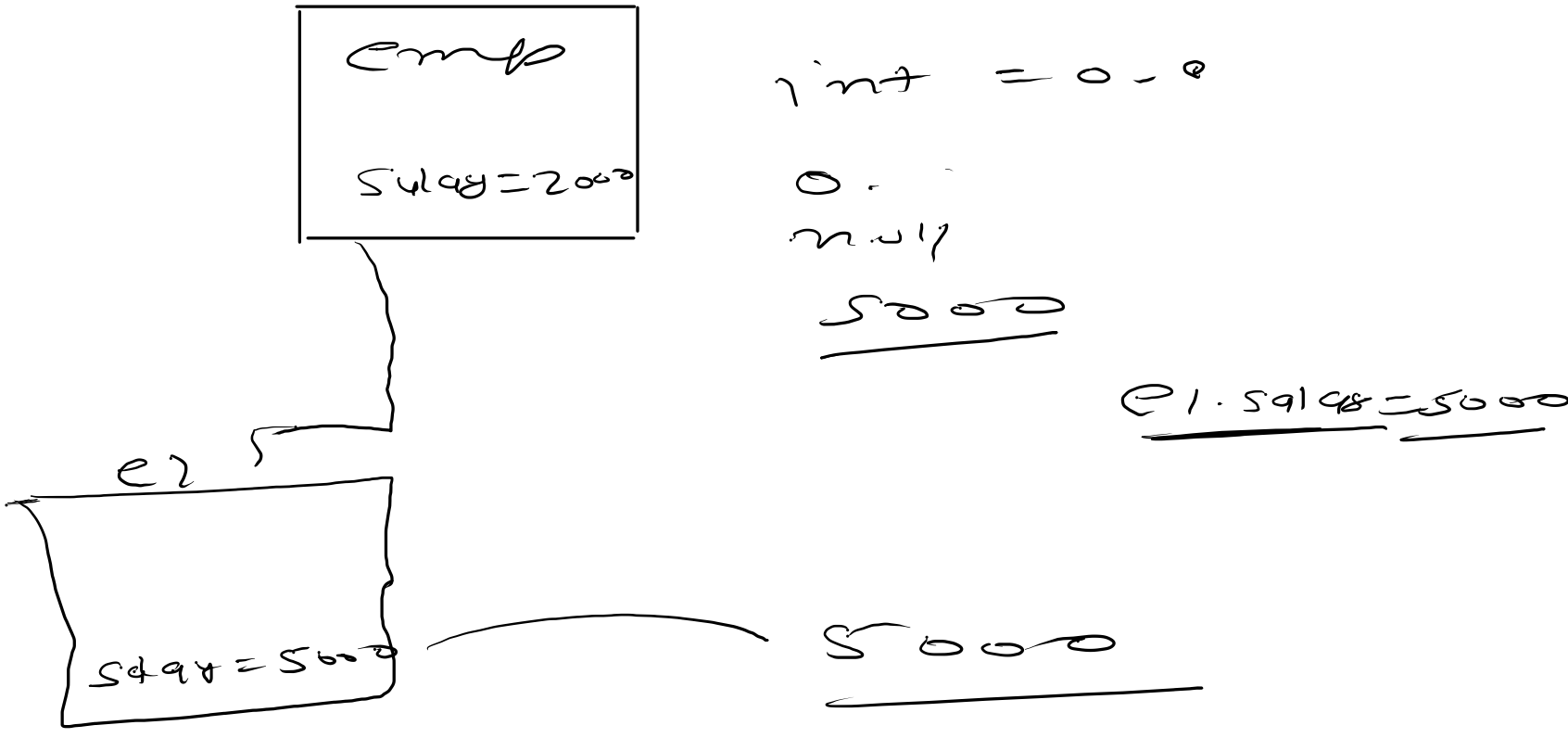
}

DMA

```
ArrayList list = new ArrayList<>();
```

Class — object — Instantiation — Initialization




emp
sal=2000
e2
sal=5000
5000
int = 0.0
0.
null
5000
e1.sal=5000

```java
public class Solution {
    static class Batman1{
        String name="Batman 1";
        int rating= 8;
        int money = 200000 ;
        int profit = 5000;
        String leadActor = "Rachel Gupta & Nikhil Chinapa";
        String leadActress = "Disha";

    }
     static class Batman2{
        String name="Batman 2";
        int rating= 9;
        int money = 500000;
        int profit = 8000;
        String leadActor = "Rannvijay Singha & Prince Narula";
        String leadActress = "Neha Dhupia";

    }
     static class Batman3{
        String name="Batman 3";
        int rating= 10;
        int money = 700000;
        int profit = 6000;
        String leadActor = "Rachel Gupta & Prince Narula";
        String leadActress = "Neha Dhupia";

    }
```

```
public static void main(String[] args) {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named S
    Batman1 bt1 = new Batman1();
    Batman2 bt2 = new Batman2();
    Batman3 bt3 = new Batman3();

     // System.out.println(bt1.name);
     System.out.println(bt1.rating);
     System.out.println(bt1.money);
     System.out.println(bt1.profit);
     System.out.println(bt1.leadActor);
     System.out.println(bt1.leadActress);
     // System.out.println(bt2.name);
     System.out.println(bt2.rating);
     System.out.println(bt2.money);
     System.out.println(bt2.profit);
     System.out.println(bt2.leadActor);
     System.out.println(bt2.leadActress);
     // System.out.println(bt3.name);
     System.out.println(bt3.rating);
     System.out.println(bt3.money);
     System.out.println(bt3.profit);
     System.out.println(bt3.leadActor);
     System.out.println(bt3.leadActress);

}
```

Class: A class is a named group of properties and functions.