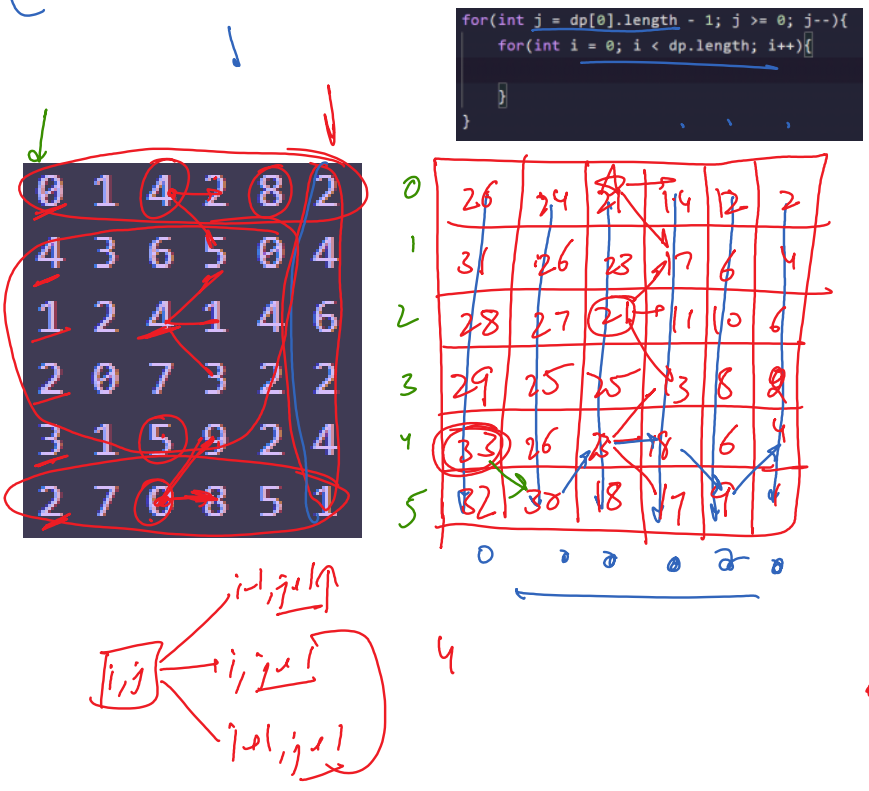
Lecture of 3rd March 2022

Thursday, March 3, 2022 9:10 PM

1. Climb Stairs with Min Moves
2. Goldmine
3. Target Sum Subset
4. CC Comb
5. CC Perm
6. Zero-One KS
7. Unbounded KS
6. Fractional KS

→ DP



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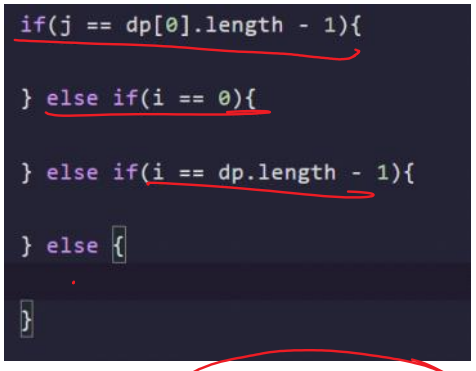


d1
d2
d3

9:45 to 9:55

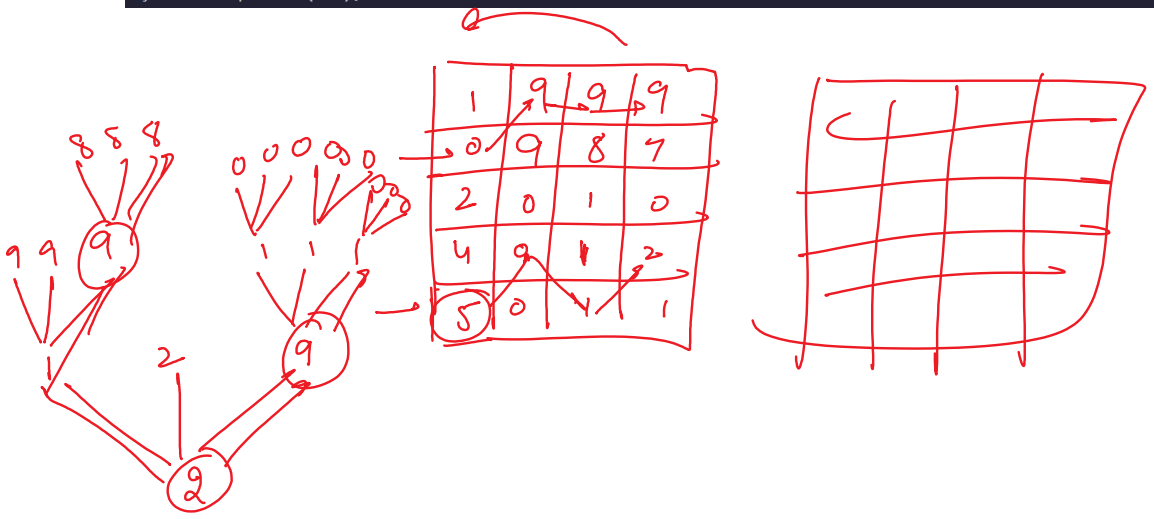
table

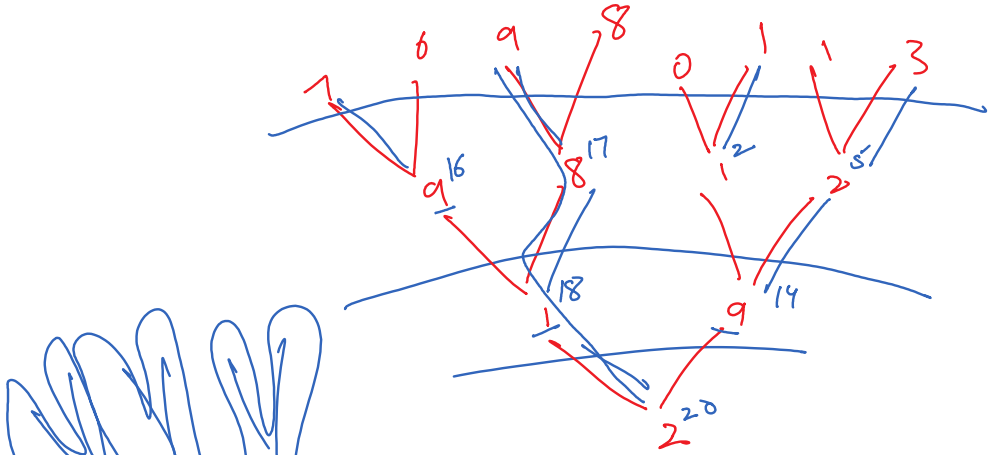
```java
int[][] dp = new int[costs.length][costs[0].length];
for(int j = dp[0].length - 1; j >= 0; j--){
    for(int i = 0; i < dp.length; i++){
        if(j == dp[0].length - 1){
            dp[i][j] = costs[i][j];
        } else if(i == 0){
            dp[i][j] = costs[i][j] + Math.max(dp[i][j + 1], dp[i + 1][j + 1]);
        } else if(i == dp.length - 1){
            dp[i][j] = costs[i][j] + Math.max(dp[i][j + 1], dp[i - 1][j + 1]);
        } else {
            dp[i][j] = costs[i][j] + Math.max(dp[i][j + 1], Math.max(dp[i - 1][j + 1], dp[i + 1][j + 1]));
        }
    }
}

int ans = dp[0][0];
for(int i = 1; i < dp.length; i++){
    if(dp[i][0] > ans){
        ans = dp[i][0];
    }
}

System.out.println(ans);
```

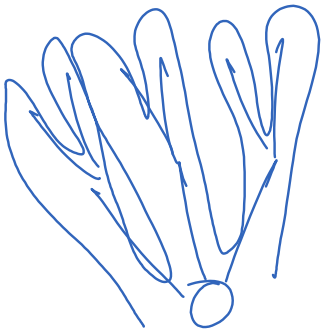
9:45 to 9:55

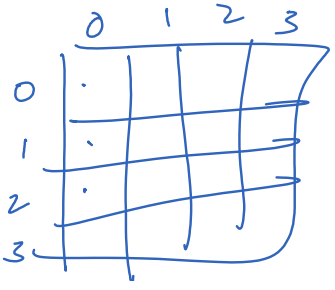
1. Fill table for code

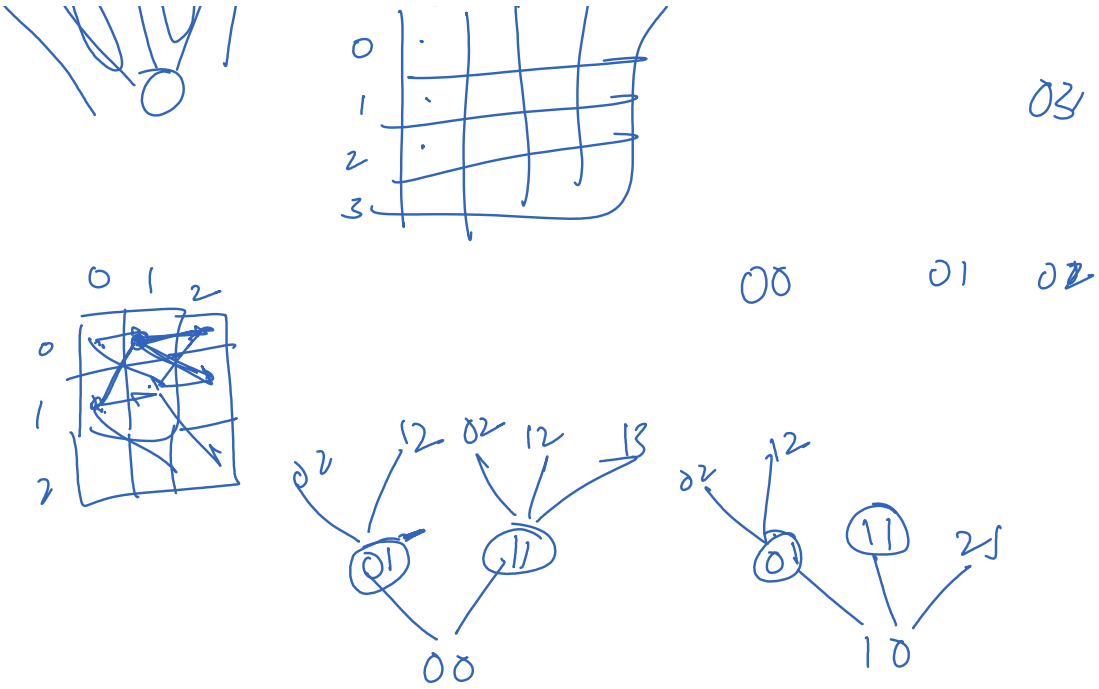
2. Try to ~~print path~~

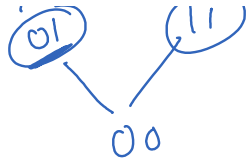


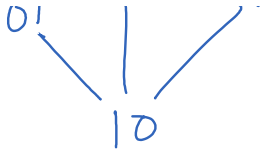


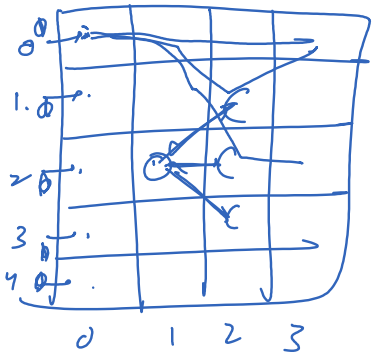




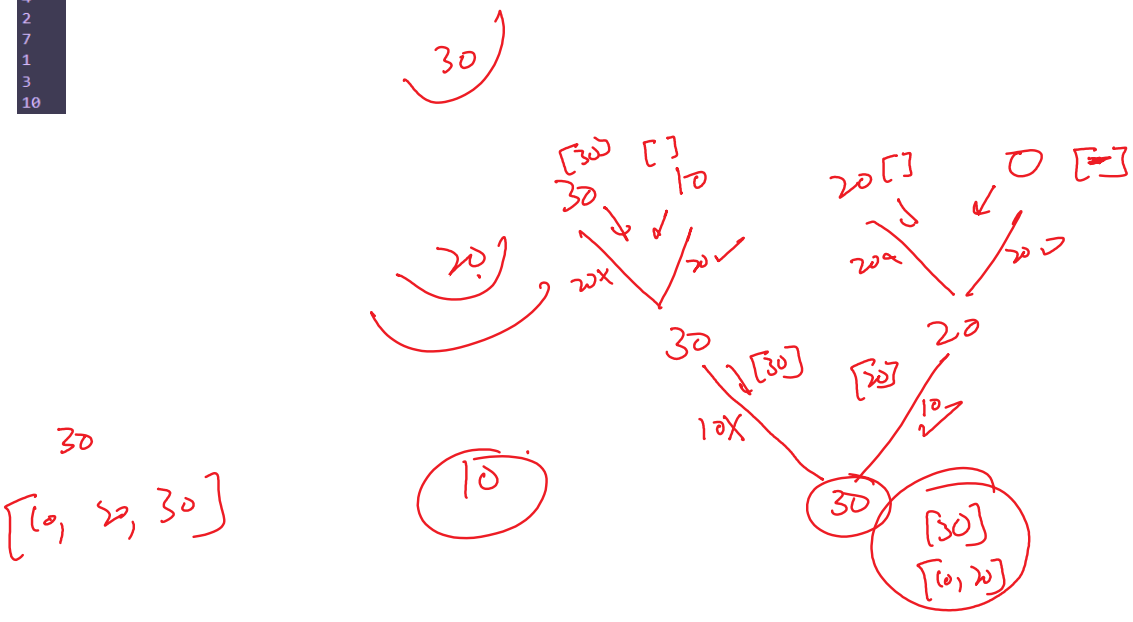






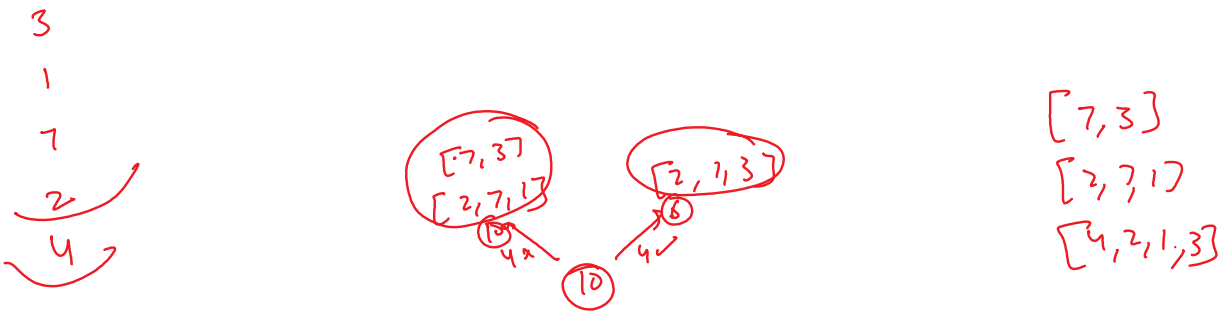


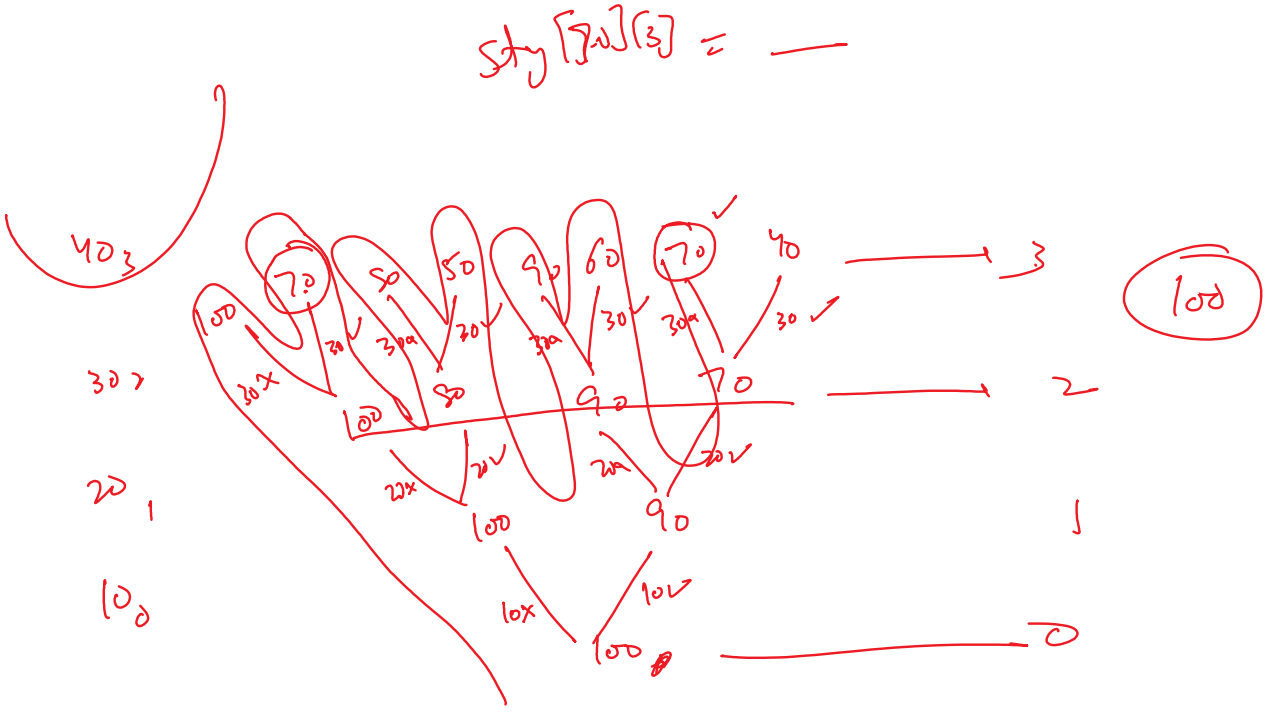

```
5
4
2
7
1
3
10
```

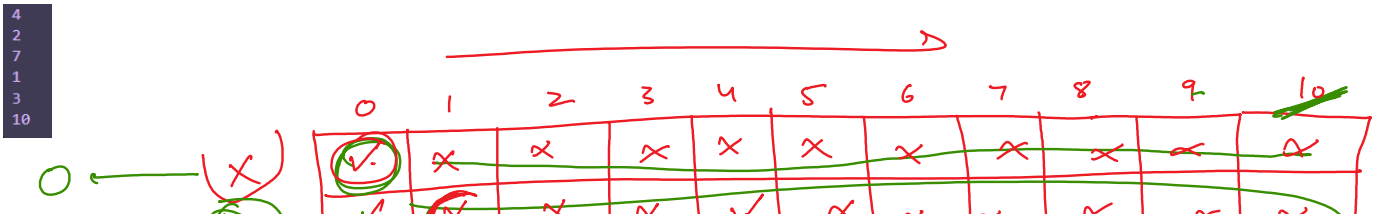


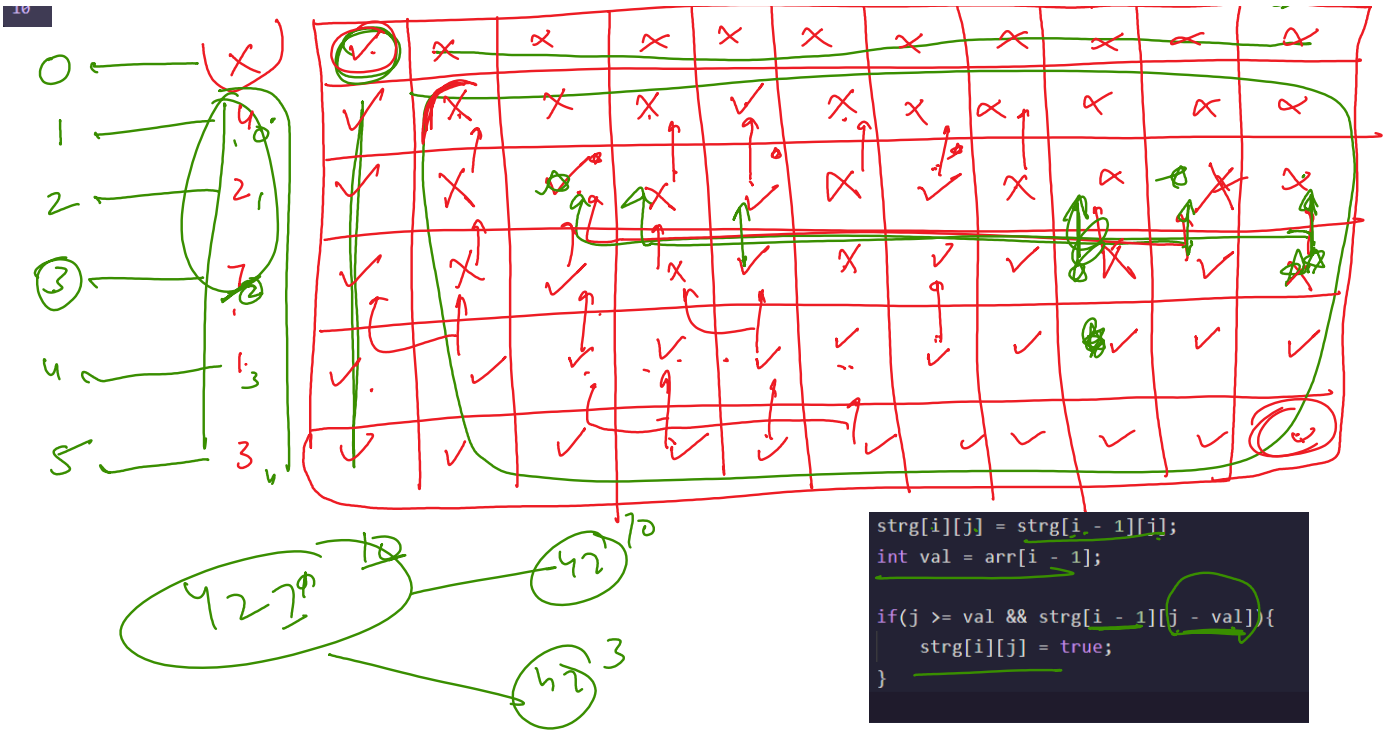

```
ArrayList<String> excluders = giveAllSubsetsOfSumX(arr, idx + 1, tar);
```

```java
ArrayList<String> excluders = giveAllSubsetsOfSumX(arr, idx + 1, tar);
ArrayList<String> includers = giveAllSubsetsOfSumX(arr, idx + 1, tar - arr[idx]);

ArrayList<String> myRes = new ArrayList<String>();
myRes.addAll(excluders);
for(String set: includers){
    myRes.add(set + " " + arr[idx]);
}
```









```
strg[i][j] = strg[i - 1][j];
int val = arr[i - 1];

if(j >= val && strg[i - 1][j - val]){
    strg[i][j] = true;
}
```