

COP 3502 9/17/21

① Derangements

② Upwards

③ Dance Recital

Derangements

Hat Problem

	0, 1, 2	}	how many ways to exchange hats so no one gets their own?
D1	1, 2, 0		
D2	2, 0, 1		

Alternative flavor text: White-elephant
Christmas gifts $\Rightarrow$ how many ways
redistribute the presents so no one gets
the one they brought?

Version 3: How many ways to get
0 correct on a matching quiz?

How many derangements are there of
 n objects?

④ Study Group Notes

Renamed

Sign Up if you don't
have one!

Reports - keep them
I'll have you submit
twice. (Student led
submit only)

Dance How to Store

- 0 ABC
- 1 BGI
- 2 BCF

	0	1	2	3	4	5	6	7	8	...	25
0	1	1	1	0	0	0	0	0	0	0	→
1	0	1	0	0	0	0	1	0	0	0	→
2	0	1	1	0	0	1	0	0	0	0	→



	0	1	2
0	0	1	2
1	1	0	1
2	2	1	0

$\text{cost}[i][j] =$
 # quick changes
 btw routine i and
 routine j .

example

2	0	1
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$$\begin{array}{rcccl}
 \text{cost}[2][0] & + & \text{cost}[0][1] & & \\
 2 & + & 1 & = & 3
 \end{array}$$