/Day 16/25   (Advent of code)

Left graph (nodes with flow rates):

- AA 0
- DD 20
- II 0
- BB 13
- JJ 21
- CC 2
- EE 3
- FF 0
- GG 0
- HH 22

Edges labeled 1 connecting AA→DD, AA→II, AA→BB (1), DD→EE, etc.
CC ← 1, JJ 1, BB 1

FF 0 —1— GG 0 —1— HH 22 ← flow/minute

minutes

How to incorporate 30
minutes into graph?

"Contract"
graph ⟹

Right graph:

Start
AA 0 —1— BB 13   End   29·13
AA 2— JJ 21   28·21
AA 1 DD 20   29·20
JJ 2
DD —1— EE 3   28·3
DD 1
EE 3 —1— ... CC 2   28·2
BB —1— CC 2
EE 3— HH 22   25·22

⇓
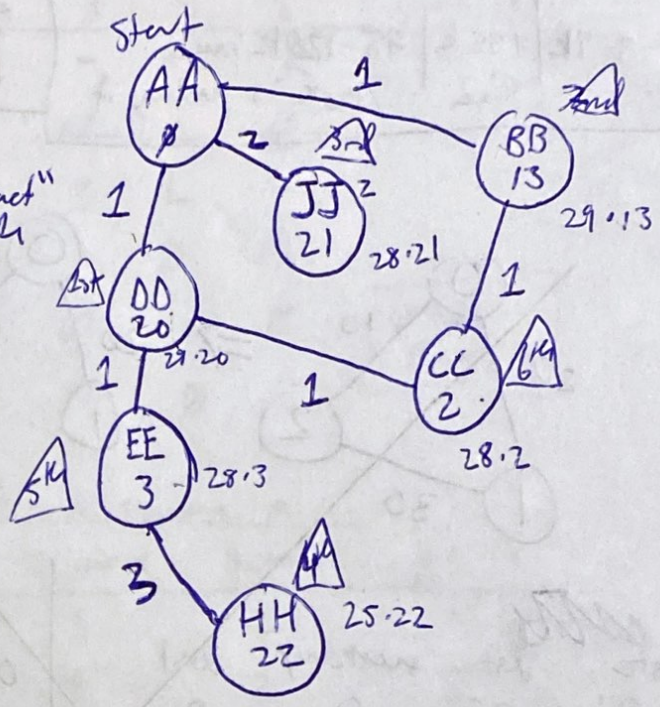
Can we just be greedy?
↳ If so, just pursue this
for part 1   try
↳ part 2 probably makes greedy approach
fail
↳ No!! Greedy
doesn't work.
what about top
N candidates?
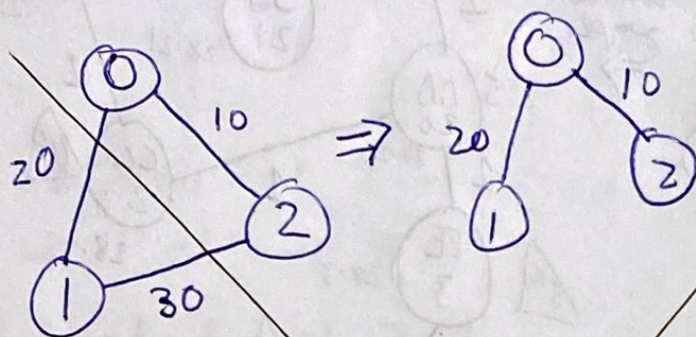
src   dst   next-hop   dist

0:   0:   0   0
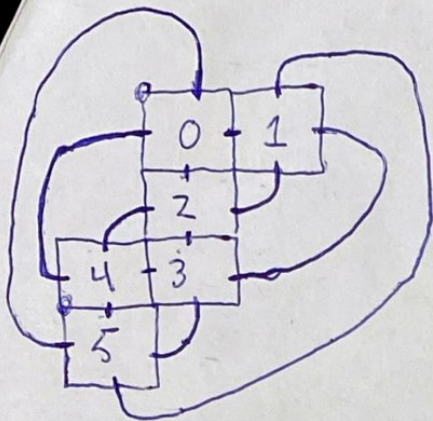   1:   1   20
     2:   2   10

1:   0:   0   20
     1:   1   0
     2:   2   30

2:   0:   0   10
     1:   1   30
     2:   2   0

0:   0:   0   0
     1:   1   20
     2:   2   10

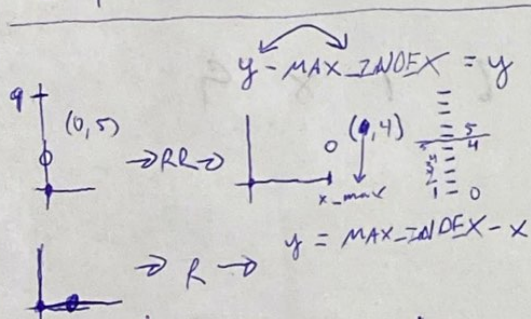1:   0:   0   20
     1:   1   0
     2:   0   30

2:   0:   0   10
     1:   0   30
     2:   2   0

Direction Change

Going from	0	1	2	3	4	5	Going to
0	-	∅	∅	-	RR	R	
1	∅	-	R	RR	-	∅	
2	∅	L	-	∅	L	-	
3	-	RR	∅	-	∅	R	
4	RR	-	R	∅	-	∅	
5	L	∅	-	L	∅	-	

∅ = no change
− = not possible

Direction Change

Transforms

L
R
RR
I

$$y - MAX\_INDEX = y$$

(0,5) → RR → o (9,4) $\frac{=5}{4}$

x_max   1 = 0

→ R → $y = MAX\_INDEX - x$

Leaving side from a square on...

On side	x_min	x_max	y_min	y_max
0	4	1	2	5
1	0	3	2	5
2	4	1	3	0
3	4	1	5	2
4	0	3	5	2
5	0	3	1	4

→ L → $x = MAX\_INDEX - y$

Position Change

Δ = Identity

Going from:

	0	1	2	3	4	5
0	-	Δ	Δ	-		
1	Δ	-			-	Δ
2	Δ		=	Δ		-
3	-		Δ	-	Δ	
4		-		Δ	-	Δ
5		Δ	-		Δ	-

[7, -1, 4] 7 -1 4 7 -1 4 7 -1 4

[-1, 7, 4]

① -1 7 4

② -1 4 7

③ ~~7 4 -1~~ -1 7 4   2 3 4 | -1 2 3 4

④ 4 7 -1 -1 4 7   2 3 -1 4

⑤ 4 -1 7   -1 7 4

⑥   -1 4 7   [4 | -2 5 6 7 8 9]

⑦   -1 7 4   0 1 2 3 4 5 6

                         4 5 6 7 8 9

[1 2 3 -10 5 6]

① 1 2 -10 3

② 1 -10 2 3

③ -10 1 2 3 5 6

④

⑤

Circular
linked list
so confusing °°‸

end