

CS 0011 SEC 1020

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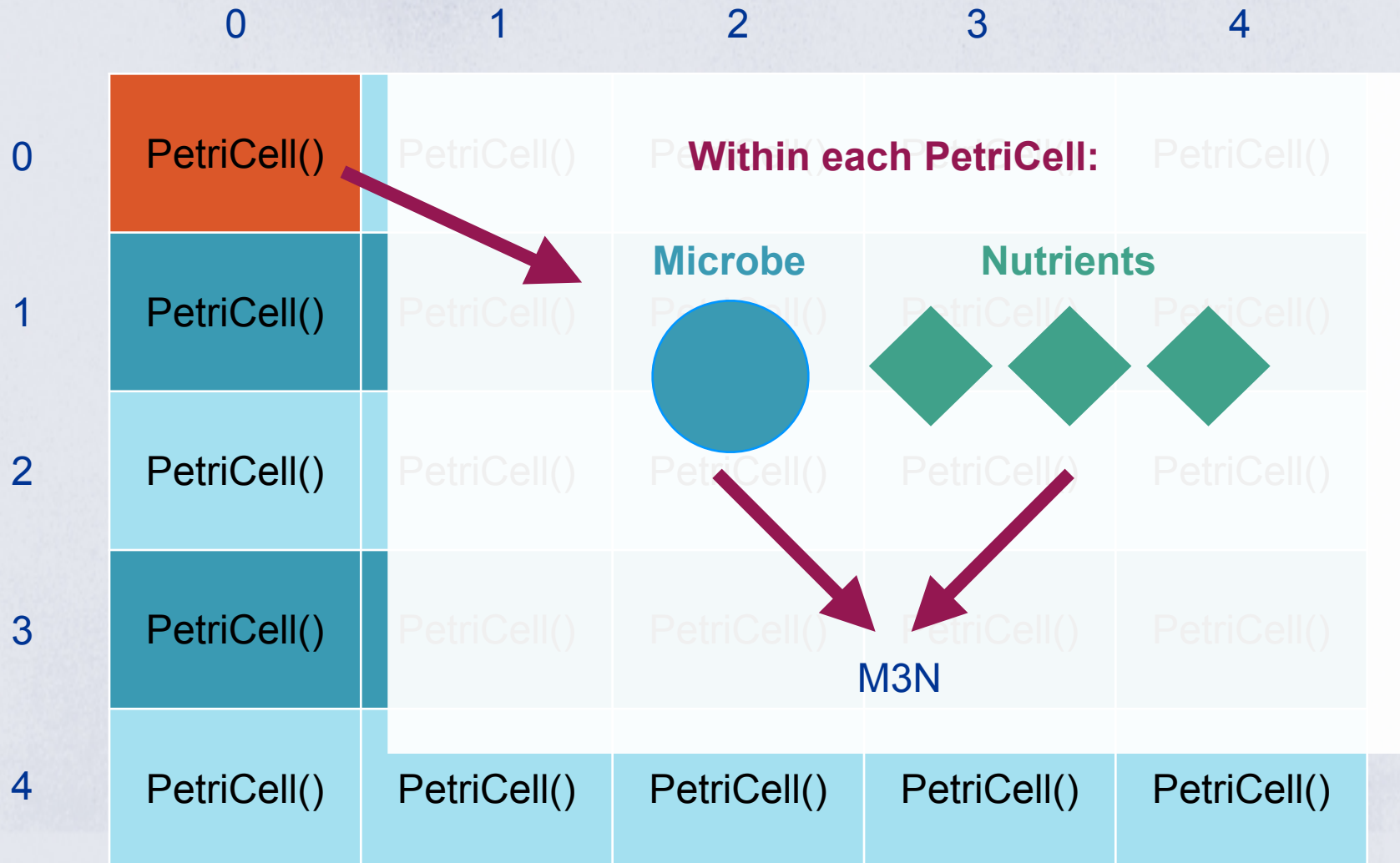
Project 3

- Model Microbial Growth
 - Create a simulation
- Project 3 Tasks:
 - Four Parts:
 - Represent Nutrients
 - Represent Microbes
 - Represent the Grid
 - PetriCell and PetriDish
 - Run the simulation

The Petri Dish

	0	1	2	3	4
0	PetriCell()	PetriCell()	PetriCell()	PetriCell()	PetriCell()
1	PetriCell()	PetriCell()	PetriCell()	PetriCell()	PetriCell()
2	PetriCell()	PetriCell()	PetriCell()	PetriCell()	PetriCell()
3	PetriCell()	PetriCell()	PetriCell()	PetriCell()	PetriCell()
4	PetriCell()	PetriCell()	PetriCell()	PetriCell()	PetriCell()

The Petri Dish



The Petri Dish

	0	1	2	3	4
0	_1N	_0N	_1N	_0N	_2N
1	_0N	_1N	_0N	_3N	_0N
2	_0N	_3N	M1N	_0N	_0N
3	_0N	_2N	_1N	_1N	_1N
4	_3N	_0N	_0N	_2N	_2N

The Petri Dish

grid[0][0] - No Microbe, 1 Nutrients

	0	1	2	3	4
0	_1N	_0N	_1N	_0N	_2N
1	_0N	_1N	_0N	_3N	_0N
2	_0N	_3N	M1N	_0N	_0N
3	_0N	_2N	_1N	_1N	_1N
4	_3N	_0N	_0N	_2N	_2N

The Petri Dish

grid[0][4] - No Microbe, 2 Nutrients

	0	1	2	3	4
0	_1N	_0N	_1N	_0N	_2N
1	_0N	_1N	_0N	_3N	_0N
2	_0N	_3N	M1N	_0N	_0N
3	_0N	_2N	_1N	_1N	_1N
4	_3N	_0N	_0N	_2N	_2N

The Petri Dish

Microbe placed at (2,2) - grid[2][2] with 1 Nutrient

	0	1	2	3	4
0	_1N	_0N	_1N	_0N	_2N
1	_0N	_1N	_0N	_3N	_0N
2	_0N	_3N	M1N	_0N	_0N
3	_0N	_2N	_1N	_1N	_1N
4	_3N	_0N	_0N	_2N	_2N

The Petri Dish

	0	1	2	3	4
0	_1N	_0N	_1N	_0N	_2N
1	_0N	Let's add up the total number of Nutrients Row 0: $1 + 0 + 1 + 0 + 2 = 4$ Row 1: $0 + 1 + 0 + 3 + 0 = 4$ Row 2: $0 + 3 + 1 + 0 + 0 = 4$ Row 3: $0 + 2 + 1 + 1 + 1 = 5$ Row 4: $3 + 0 + 0 + 2 + 2 = 7$ Total: 24 Concentration: 0.96 $x = 5$ $y = 5$			
2	_0N				
3	_0N				
4	_3N				