Interest Area Division

1. Whole Interest Area
2. Core Interest Area
3. Margin Interest Area
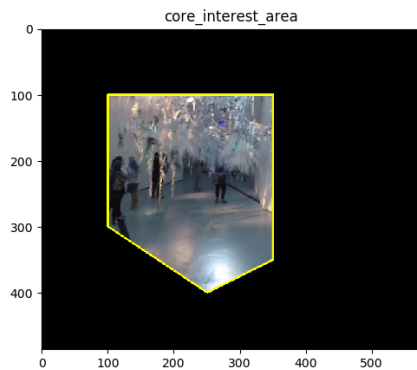
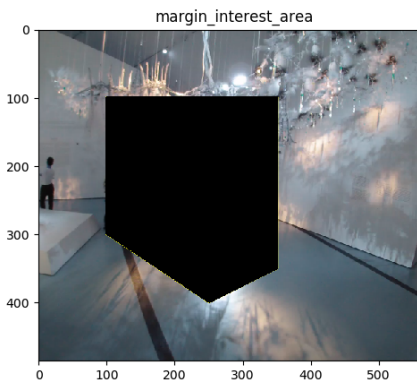|		
Draw Boundary Between Core Interest Area and Margin Interest Area	Whole Interest Area: A relatively wider area around Canopy. [YouTube: Processed test video in Whole Interest Area](https://youtu.be/Y6ZnMoXIhBU) (https://youtu.be/Y6ZnMoXIhBU)	Whole Occupancy: 6
core_interest_area	Core Interest Area: The small area just underneath the Canopy. [YouTube: Processed test video in Core Interest Area](https://youtu.be/Scfao6b-200) (https://youtu.be/Scfao6b-200)	Core Occupancy: 6
margin_interest_area	Margin Interest Area: The area within Whole Interest Area and outside the Core Interest Area. [YouTube: Processed test video in Margin Interest Area](https://youtu.be/XwNDwD57brA) (https://youtu.be/XwNDwD57brA)	Margin Occupancy: 1
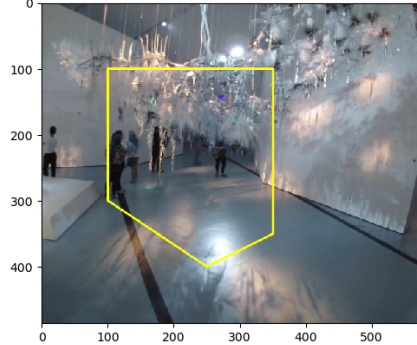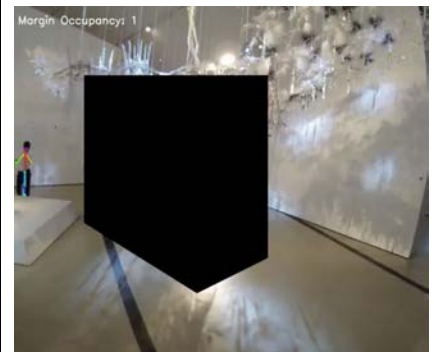
Truth Value Table

Assumption:
- There is a time-delay for visitors to move from one area to another area.
- At the same time step: $z = x + y$
- Estimate of # of visitors in each area is independent from each other.

Change type of estimated # of visitors between two consecutive time steps:
- Increase: $\uparrow$
- Decrease: $\downarrow$

- Hold: —

Truth value:
- 1 means possible
- 0 means impossible

# of visitors in core area: x	# of visitors in margin: y	# of visitors in whole interest area: z	Truth value	Explanation
—	—	—	1	**No people transform between space.**
—	—	↑	0	Impossible
—	—	↓	0	Impossible
—	↑	—	0	Impossible
—	↑	↑	0	New people come in
—	↑	↓	0	Impossible
—	↓	—	0	Impossible
—	↓	↑	0	Impossible
—	↓	↓	1	**People get out**
↑	—	—	0	Impossible
↑	—	↑	1	**New people come in and people move from margin to core area.**
↑	—	↓	1	**People move from margin to core area and more people in margin get out of whole interest area.**
↑	↑	—	0	Impossible
↑	↑	↑	1	**People move from margin to core area and more new people come into the margin area.**
↑	↑	↓	0	Impossible
↑	↓	—	1	**People move from margin into core interest area.**
↑	↓	↑	1	**New people come in and more people move from margin into core interest area.**
↑	↓	↓	1	**People move from margin into core interest area and more people get out of whole interest area.**
↓	—	—	0	Impossible
↓	—	↑	0	Impossible
↓	—	↓	1	**People get out of core area into margin, and the same # of people get out of whole interest area.**
↓	↑	—	1	**People get out of core area into margin, and no people get out of whole interest area.**
↓	↑	↑	1	**People get out of core area into margin, and new people come in.**
↓	↑	↓	1	**People get out of core area into margin, and less than this # of people get out of whole interest area.**

↓	↓	—	0	Impossible
↓	↓	↑	0	Impossible
↓	↓	↓	1	**People get out of core area into margin, and more people get out of whole interest area.**

- 27 combinations
- only 13 of 27 combinations are possible
- only 4 of the 13 possible cases in where new visitors come in.
- only 6 of the 13 possible cases in where visitors leave from the whole interest area.
- Only 3 of the 13 possible cases in where the # of visitors remain unchanged.

If we have this Truth Table, and we can estimate the change of the # of visitors in each area of two consecutive time steps, we can infer which scenario is happening.