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| --- | --- | --- |
| Interest Area Division   1. Whole Interest Area 2. Core Interest Area 3. Margin Interest Area | | |
|  | Whole Interest Area: A relatively wider area around Canopy. |  |
|  | Core Interest Area: The small area which is just underneath the Canopy. |  |
|  | Margin Interest Area: The area within Whole Interest Area but outside the Core Interest Area. |  |

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| --- | --- | --- | --- | --- |
| Truth Value Table  Assumption:   * There is a time-delay for visitors to move from one area to another area, and this time must be greater than the time-gap between two frames i.e. the time-delay must be greater than 33millisecond. * 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:   * Hold: 0 * Increase: 1 * Decrease: 2   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 |
| **0** | **0** | **0** | **1** | **No people transform between space.** |
| 0 | 0 | 1 | 0 | Impossible |
| 0 | 0 | 2 | 0 | Impossible |
| 0 | 1 | 0 | 0 | Impossible |
| **0** | **1** | **1** | **1** | **New people come in** |
| 0 | 1 | 2 | 0 | Impossible |
| 0 | 2 | 0 | 0 | Impossible |
| 0 | 2 | 1 | 0 | Impossible |
| **0** | **2** | **2** | **1** | **People get out** |
| 1 | 0 | 0 | 0 | Impossible |
| **1** | **0** | **1** | **1** | **New people come in and the same number of people move from margin to core area.** |
| 1 | 0 | 2 | 0 | Impossible |
| 1 | 1 | 0 | 0 | Impossible |
| **1** | **1** | **1** | **1** | **People move from margin to core area and more new people come into the margin area.** |
| 1 | 1 | 2 | 0 | Impossible |
| **1** | **2** | **0** | **1** | **People move from margin into core interest area.** |
| **1** | **2** | **1** | **1** | **New people come in and more people move from margin into core interest area.** |
| **1** | **2** | **2** | **1** | **People move from margin into core interest area and more people get out of whole interest area.** |
| 2 | 0 | 0 | 0 | Impossible |
| 2 | 0 | 1 | 0 | Impossible |
| **2** | **0** | **2** | **1** | **People get out of core area into margin, and the same # of people get out of whole interest area.** |
| **2** | **1** | **0** | **1** | **People get out of core area into margin, and no people get out of whole interest area.** |
| **2** | **1** | **1** | **1** | **People get out of core area into margin, and new people come in.** |
| **2** | **1** | **2** | **1** | **People get out of core area into margin, and less than this # of people get out of whole interest area.** |
| 2 | 2 | 0 | 0 | Impossible |
| 2 | 2 | 1 | 0 | Impossible |
| **2** | **2** | **2** | **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.