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| Variable Name | Variable Symbol | Variable Description | Default values |
| Simulation Parameters | | | |
| Model Type | M | Categorical variable for different agent decision models. | 0 – The couzin  model |
| Simulation Time | T | The upper bound on the run-time for the simulation. | 300 |
| Simulation step time | dt | The time between each discrete step of the simulation. | 0.01 |
| Agent step time | da | The time between consecutive updates of the agent decision step. | 0.1 |
| Agent Parameters | | | |
| Number of agents | N | The size of the group. | 10 |
| Number of neighbors | n | The maximum number of other agents to consider for decisions. | 7 |
| Fraction informed agents | f | The fraction of the group which knows the goal location. | 1 |
| Turn rate | dtheta | The rate at which an agent can turn to a new orientation. | 2 |
| Behavior radius | rd, rn, ra, ro | The radii for different social behaviors: avoi(d), alig(n), (a)ttract, and (o)bstacle. | rd = 1 rn, = 5  ra, = 1 ro = 1 |
| Behavior weight | wd, wn, wa, wo | The relative weights applied to different social behaviors: avoi(d), alig(n), (a)ttract, and (o)bstacle. | wd = 1 wn = 7  wa, = 1 wo =1 |
| Obstacle Parameters | | | |
| Obstacle Type | O | A categorical variable that decides if the obstacle is a box, an arc or an arrow. | 2 – An arc |
| Obstacle Scale | s | A continuous variable that controls how large the obstacle is. | 15 |
| Obstacle arc | rs | A continuous variable that controls the angular range of a concave or convex obstacle. | pi |