

The contacts matrix calculation steps below are from the cited course, Najafabadi et al. (2021) to contrast the algorithm behind the scenes. For more information, you can refer to the original paper.

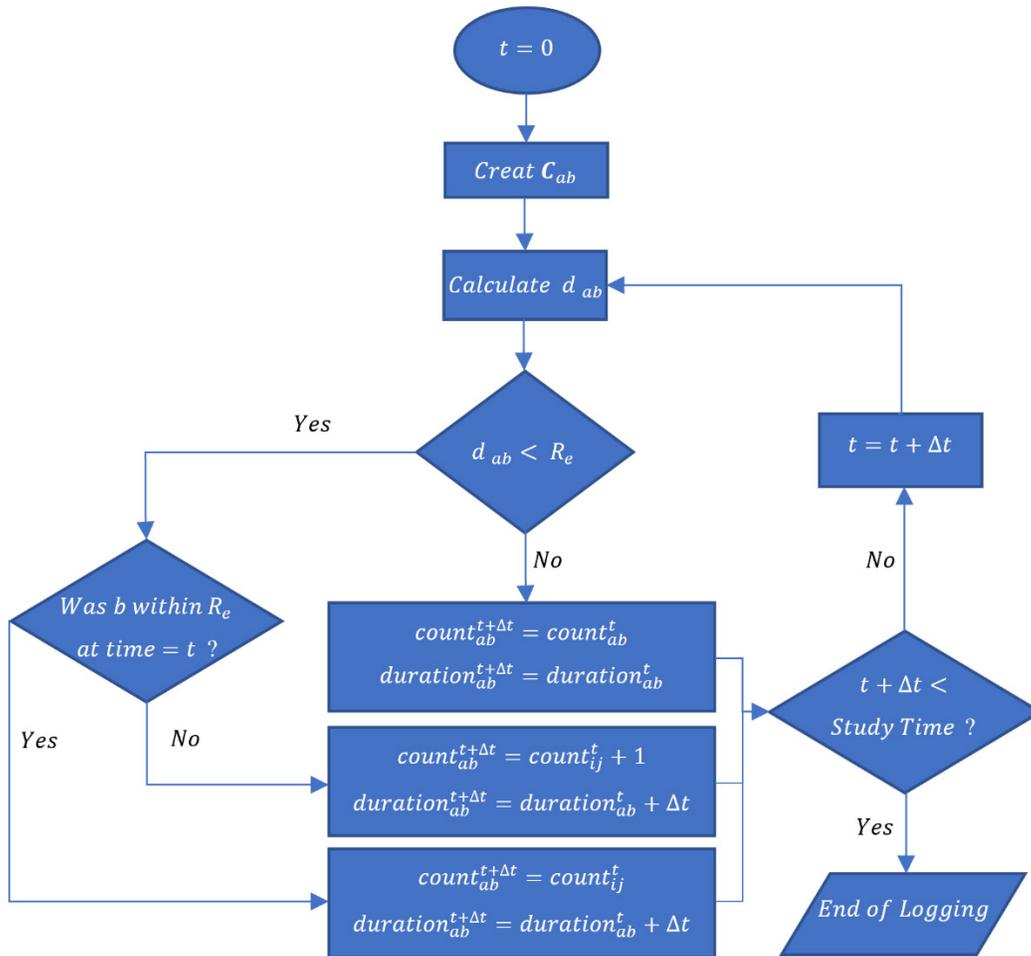


Figure 1. Calculation steps for the contacts matrix

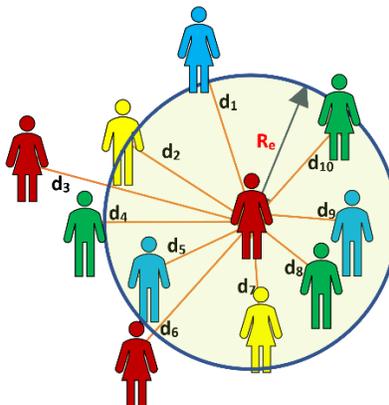


Figure 2. Contacts within the effective range of an active agent

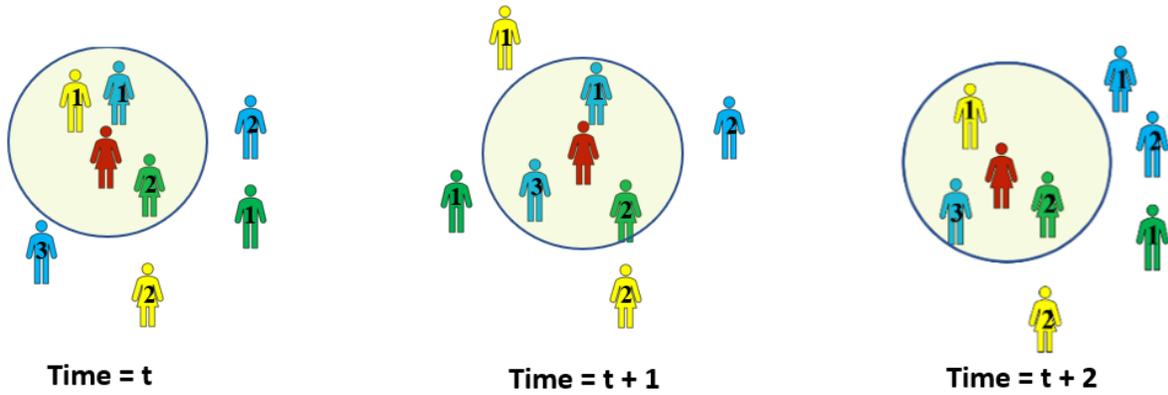


Figure 3. Agents' physical location according to a host agent's contacts' radius at two successive time-steps in the model

Table 1 Contacts parameters at the model time-steps as presented in Figure 5; Time = t

Contact ID	Agents Pair	Agent Index	Start Time	Last Updated	Running Duration	Average Distance	Still In-Session?
1		G2	t	t	1	1.50 meters	Yes
2		Y1	t	t	1	0.90 meter	Yes
3		B1	t	t	1	1 meter	Yes

Table 2 Contacts parameters at the model time-steps as presented in Figure 5; Time = t + 1

Contact ID	Agents Pair	Agent Index	Start Time	Last Updated	Running Duration	Average Distance	Still In-Session?
1		G2	t	t + 1	2	1.75 meters	Yes
2		Y1	t	t	1	0.90 meter	No
3		B1	t	t + 1	2	0.90 meter	Yes
4		B3	t + 1	t + 1	1	1.75 meters	Yes

Table 3 Contacts parameters at the model time-steps as presented in Figure 3; Time = $t + 2$

Contact ID	Agents Pair	Agent Index	Start Time	Last Updated	Running Duration	Average Distance	Still In- Session?
1		G2	t	$t + 2$	3	1.70 meters	Yes
2		Y1	$t + 2$	t	1	0.90 meter	No
3		B1	t	$t + 1$	2	0.90 meter	No
4		B3	$t + 1$	$t + 2$	2	1.80 meters	Yes
5		Y1	$t + 2$	$t + 2$	1	1.10 meter	Yes

Table 4. Host agent's aggregated contacts at the agent level

Contacted Agent	Count of Contacts	Cumulative Duration of Contacts	Average Distance of Contacts
G2	1	3 seconds (100%)	1.70 meters
Y1	2	2 seconds (67%)	1 meter
B1	1	2 seconds (67%)	0.90 meters
B3	1	2 seconds (67%)	1.80 meters

	H	G	Y	B
H	–	1.5	1	1.33
G	1.5	0	0.75	1.17
Y	1	0.75	0	0.33
B	1.33	1.17	0.33	0.34

Figure 4. Contacts matrices for the duration of the contacts between active agents that have been in contact – Agents' type level

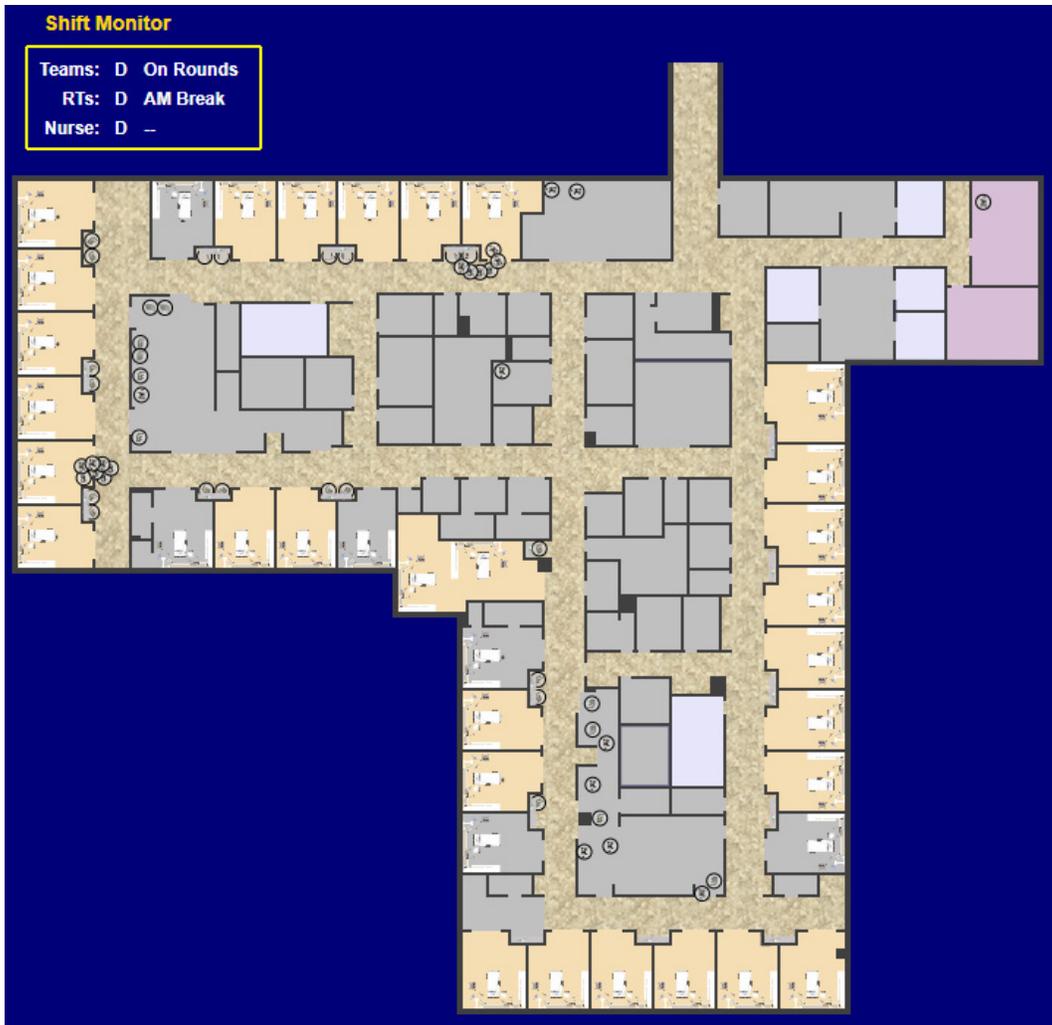


Figure 5. Physical layout of the subject matter ICU (2D)



Figure 6. Physical layout of the subject matter ICU (Partial 3D)