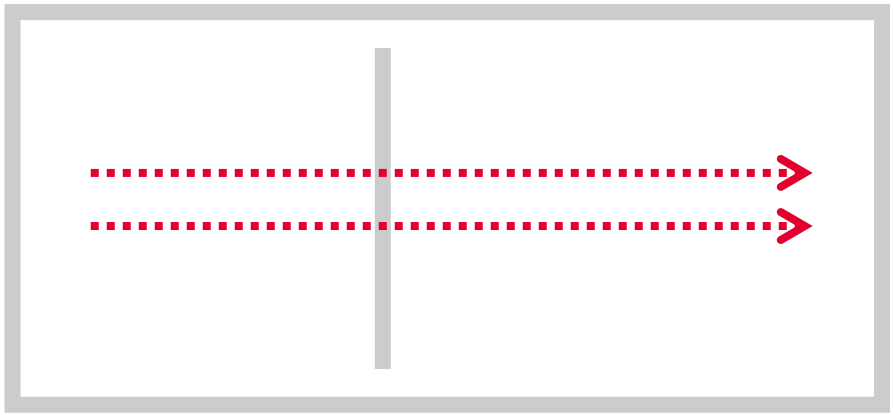
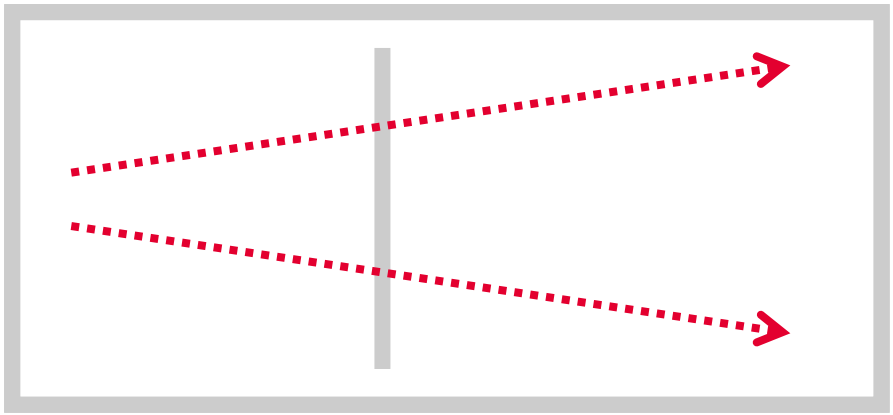
1. Standard Group Counting Cases



A group exists throughout the frame.

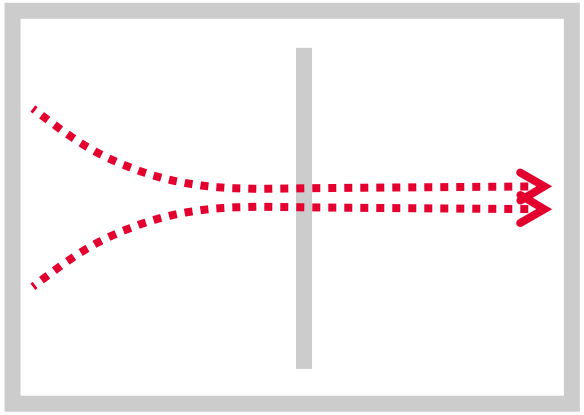
→ Group-count: YES



No group was created.

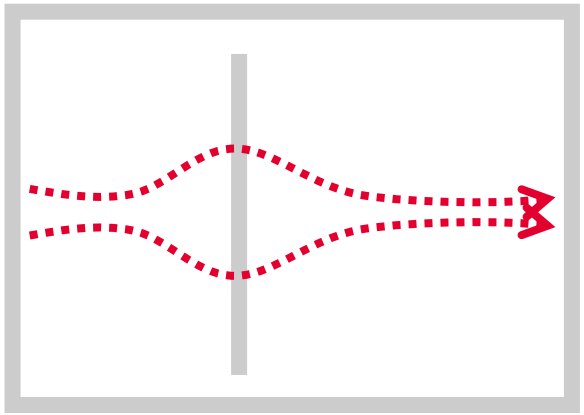
→ Group-count: NO

2. General Group Counting Cases



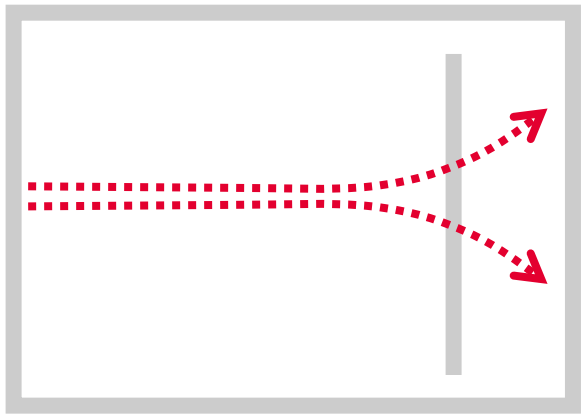
A group was created **before** a count-line

→ Group-count: YES



A group shortly **splits over** a count-line

→ Group-count: YES

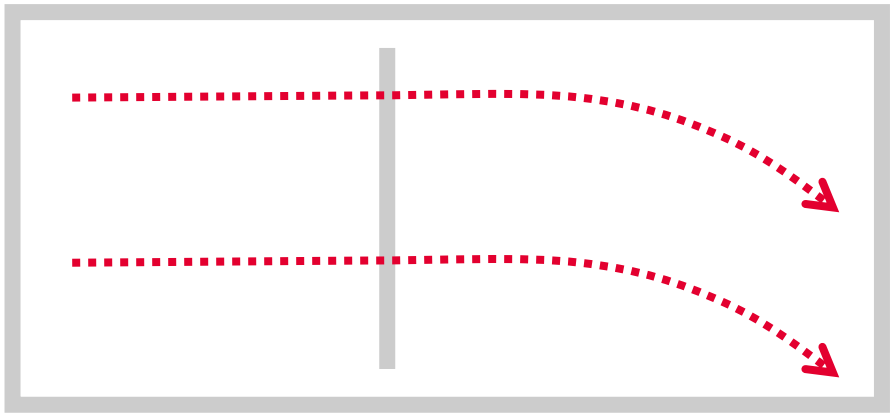


A group splits shortly **before** a count-line

→ Group-count: YES

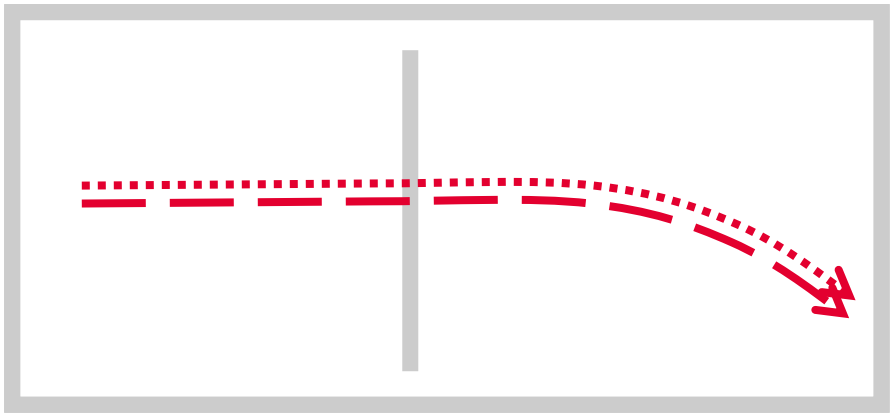
NOTE: In each of these cases, a group existed for most of the frame. Although there are short splits, the algorithm assumes that these are real groups and that the splits are a part of normal group-movement dynamics. Therefore, in all those cases a group-count will be generated.

3. Configurable Group Counting Cases



Two people are moving parallel, but with a considerable **distance** between them.

→ Group-count: Possible

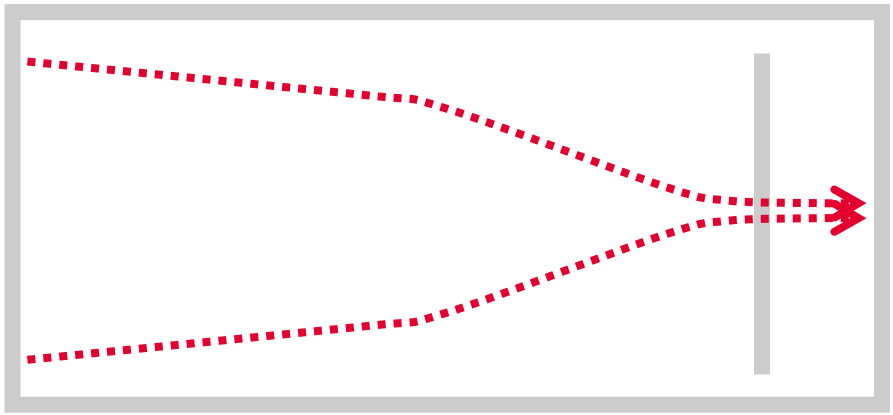


Two people are moving parallel, but at **different speeds**.

→ Group-count: Possible

NOTE: Do those cases show groups or individual people? The answer might be subjective and depends on the environment and the count requirements. Through changing the group-count parameters, the algorithm can be modified to ensure the best performance in different situations.

4. Group Cases: Edge Case

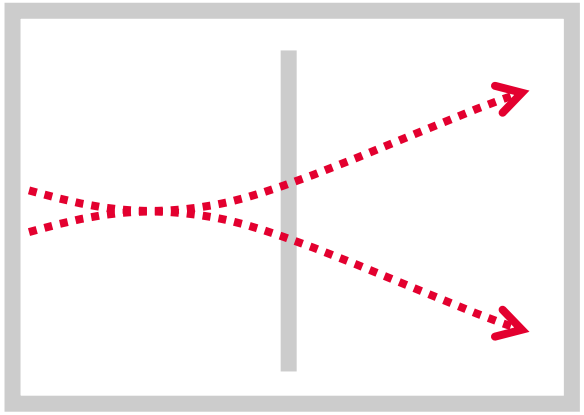


Although this scenario might not represent a group, **a group count is generated**. This is because a group is being tracked only after its initial creation.

The algorithm then follows the behavior of the group until it is deleted. Since this group did not split before deletion, a group-count will be generated.

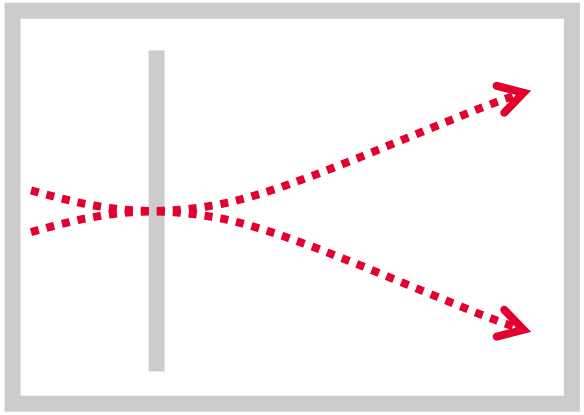
→ Group-count: YES

5. No-Group Cases: Possible Scenarios



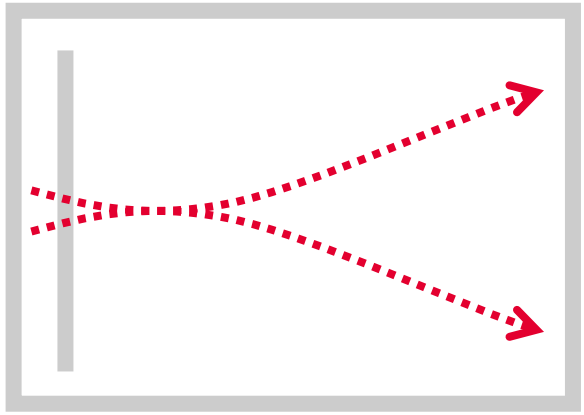
A short-living group, created **before** a count-line.

→ Group-count: NO



A short-living group, created **on** a count-line.

→ Group-count: NO



A short-living group, created **after** a count-line.

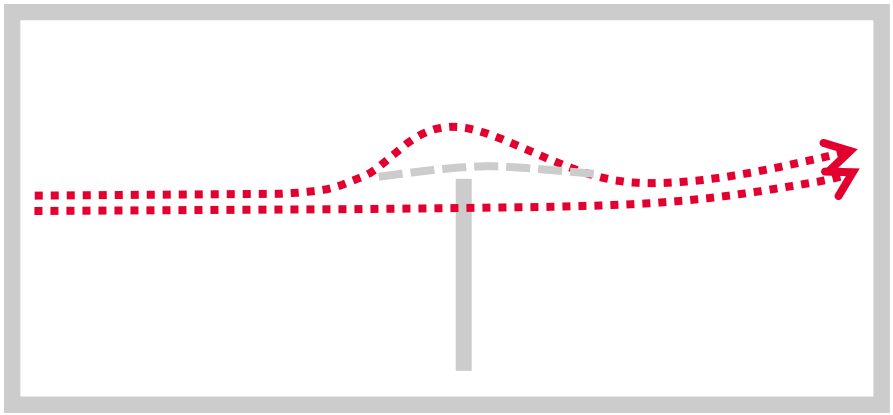
→ Group-count: NO

NOTE: In each of these cases, a group is created for only a short while, and its location in the frame is arbitrary. It is therefore evident that these are not real groups and the algorithm will ignore them. All those cases will be handled in the same way: no group-count will be generated.

6. No-Group Cases: Edge Cases

A group was created after the count line. Although it is most likely a real group (it exists for most of the frame), the group itself did never cross the line. Therefore, no group-count will be generated.

→ Group-count: NO



A group exists throughout most of the frame, but only one of the group members crossed the line (The group center, marked in grey, did not). Therefore, no group-count will be generated.

→ Group-count: NO

NOTE: In the group-counting mode, the correct placing of the count-lines is still crucial for the counting accuracy.