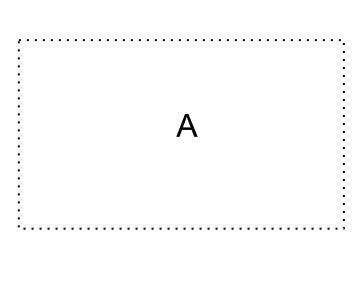
```
.
   / •
  •
     ·..
      .
      *
      .
 •
       .
 *
 •
      *
     •
      .
•
    .
  .
      ...
```

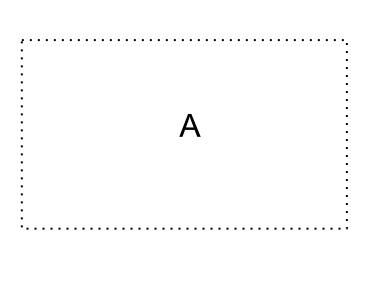
#### Swarm Robot Control

1000 Robot Swarm

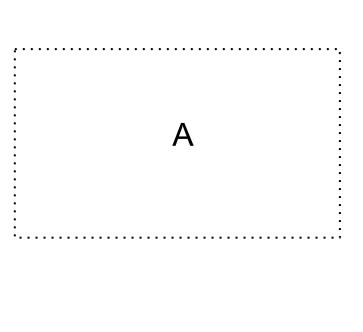
#### Move the robots to Area A



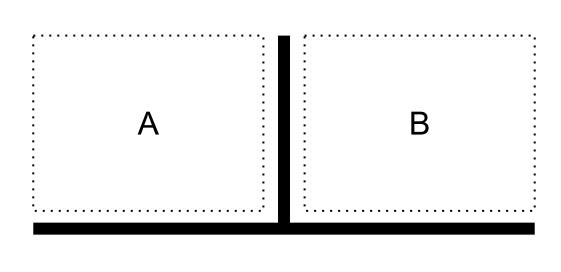
# Move the robots to Area A with a wall in the way



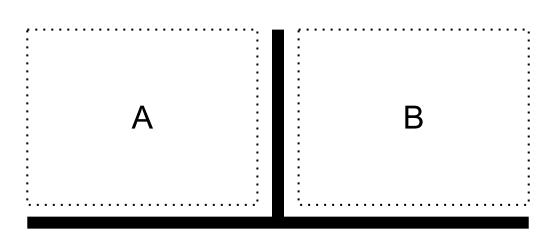
### Stop the robots



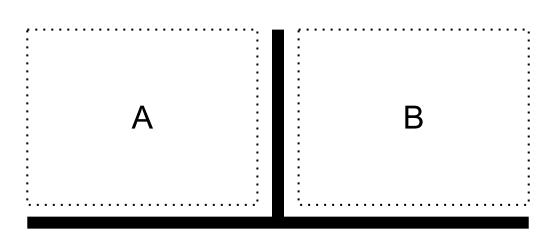
## Divide the robots around an obstacle



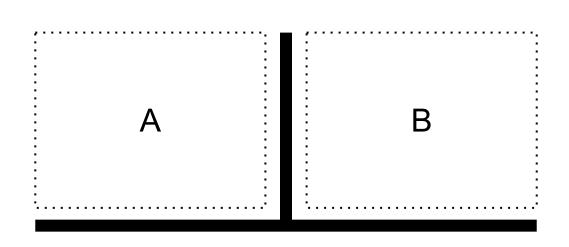
# Move the orange robots to area B and the red robots to area A



# Move the orange robots to area A and the red robots to area B



# Move the orange robots to area A and the red robots to area B



### Divide into two groups

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```

#### Merge two groups

... . • . . . .\* ... . . 

# Tell the robots to form a line

# Tell the robots to form a square

| •   | •       |         |           |           | •       |         | •        |       |
|-----|---------|---------|-----------|-----------|---------|---------|----------|-------|
| •   |         |         | •         | •         | •       | •       | •        | •     |
| • • | •       |         | • •       |           |         | •       | •        |       |
| •   | • • •   |         | •         |           |         | •       | •        |       |
|     | •       |         |           |           | •       | • • •   |          |       |
| •   | • • •   | • • •   | •         | •         | •       |         | •        | •     |
| •   | • •     |         | • • •     |           | • •     |         |          | •     |
| •   |         |         |           | •         |         |         | •        | •     |
|     |         |         | •         | •         |         |         | •        |       |
| •   |         | • •     |           | •         |         | . •     |          | •     |
| • • |         | • • •   | • •       |           |         |         | •        |       |
| •   |         | • •     |           |           | •       |         | •        | •     |
|     | •       | •       |           | •         |         | •       | •        |       |
|     |         | • •     | • • •     |           | • • •   | • • •   | • •      |       |
|     |         |         | •         |           | •       | •       | •        |       |
|     |         | •       | •         | • • • •   | • • •   |         | •        | •     |
|     |         | • • •   |           |           |         | • • • • | . •      | • • • |
|     | •       | •       | •         | •         | • • • • | •       | •        | • •   |
|     | • • •   | • • • . |           |           | • • • • | •       | •        |       |
|     | •       | • •     |           | • •       |         |         |          |       |
|     |         |         | •         | . •       |         | •       | •        |       |
|     |         |         | •         | •         |         |         | •        |       |
|     |         |         | • • • •   | •         |         |         | •        | •     |
|     | •       | •       | •         |           | •       | • • •   | •        | • • • |
|     | *       | * **    |           |           | •       |         | <b>4</b> |       |
| •   | • • • • | •       | •         |           | •       |         | •        |       |
|     | • • • • |         |           | ٠. ٠.٠    |         | • • • • |          |       |
|     | • • • • |         | · · · · · | · . · . · |         |         |          |       |
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|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |
|     |         |         |           |           |         |         |          |       |

# Move the crate to area A



A

# Move the crate to area A



A

.

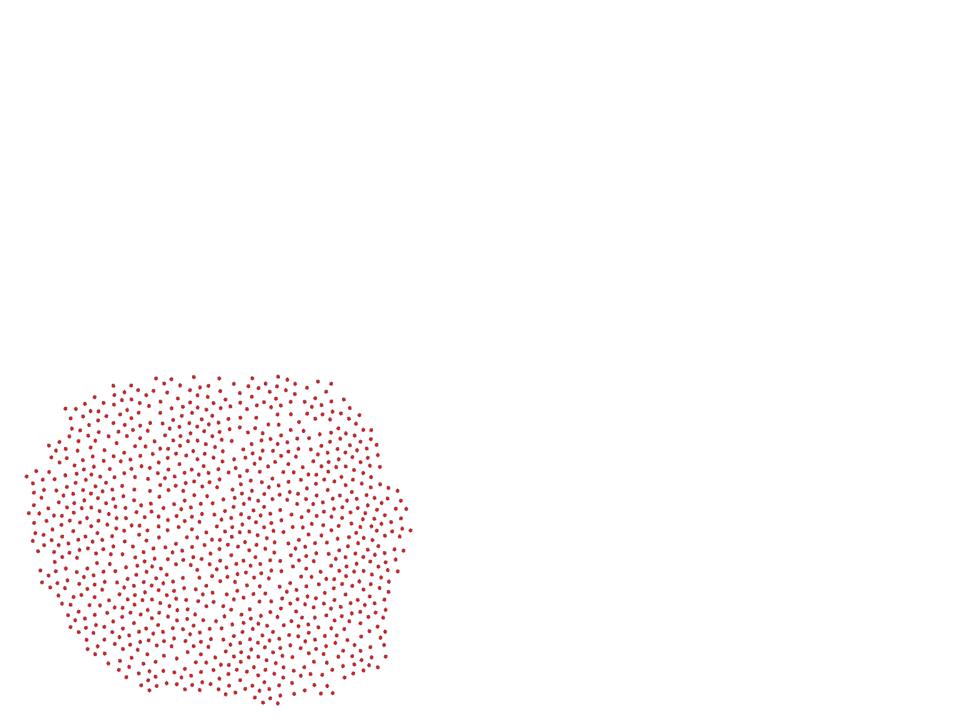
#### Mark defective robot

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             .
                      ..
               .
  .
           .
                        •
                         .
              .
              •
         •
      *
              .
```

#### Remove defective robot

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            *
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         •
      *
              .
```

#### Patrol the screen border



#### Patrol area A

A

### Disperse over the screen area

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      .
 •
       .
 *
 •
      *
     •
      .
•
    .
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      ...
```