



9.7 Project: the relay

Talking to each other · Robot club · about 25 min

Name _____

Class _____

Date _____

What this lesson is about

Drive to the handover, then and only then say go.

- The plan
- Arriving
- Handing over

Questions

6 marks in all

1. Put the relay handover in order.

[1 mark]

Number the lines 1 to 5 to put them in the right order.

- ___ wait(0.5) to settle
- ___ send("go")
- ___ Stay put and listen for finished
- ___ stop()
- ___ Drive into the handover zone

2. The starter code sends go before driving. What happens?

[1 mark]

- ☐ A The Runner leaves before you arrive: a false start
- ☐ B Nothing, the Runner waits for you anyway
- ☐ C The message is queued until you reach the zone
- ☐ D The Runner never leaves

3. The handover zone starts 32 cm ahead and is 16 cm deep. How many cm ahead is its middle?

[1 mark]

4. What does this program print?

[1 mark]

```
def in_zone(y):  
    return 32 <= y <= 48  
  
for y in [30, 40, 49]:  
    print(y, in_zone(y))
```

5. Why is there a wait(0.5) between stop() and send("go")?

[1 mark]

- ☐ A It lets the robot settle, so it is not still rolling when it hands over
- ☐ B The radio needs half a second to switch on
- ☐ C The Runner cannot hear sooner
- ☐ D stop() only works after a wait

6. You sent `go` and have heard nothing for two seconds. What is a sensible thing to do?

[1 mark]

- ☐ A Send `go` again, in case the first was missed
- ☐ B Drive after the Runner
- ☐ C Wait forever without sending
- ☐ D Leave the zone to look for the Runner

The task: the relay

Drive into the handover zone, stop, send `go`, and stay there until the Runner says `finished`.

```
# the two lines every program starts with: the commands, then the robot
from bugbot import *
connect()
# radio this to every other robot
send('go')
# drive forward at 60 for 40 cm, then stop
forward(60, distance=40)
```

Plan your program here, then type it in and press Run.



Do it on the robot

www.bugbotlab.com/learn/9-7-project-the-relay/

The simulator checks it and tells you when it passes. Nothing to install, no account.

Challenges

1. Send `go` only when `velocity()` says you have stopped.
2. Print how long the Runner took, from your `go` to its `finished`.
3. Send `go` a second time if nothing is heard within two seconds, in case the first was missed.