

04_04_escape_real_crazyflie_student_hs__

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Part of the InnovatED STEM and DroneBlocks Land, Air, and Sea Robotics Curriculum
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1 Escape the Room – Student Version

Your challenge is to write a program that lets the Crazyflie escape from a room.

Use sensor data to detect walls, avoid obstacles, and find an open exit.

1.1 Helpful Commands Reference

Command	Description	Parameters (units/type)
<code>takeoff()</code>	Take off and hover	height (m/float), speed (m/s/float)
<code>land()</code>	Land the drone	speed (m/s/float)
<code>forward()</code>	Move forward	distance (m/float), speed (m/s/float)
<code>left()</code> / <code>right()</code>	Move sideways (strafe)	distance (m/float), speed (m/s/float)
<code>rotate()</code>	Rotate (yaw)	angle (degrees/int), duration (s/float)
<code>get_distances()</code>	Read all sensor values	None
<code>get_distances()['front']</code>	Distance to object in front	meters/float
<code>get_distances()['left']</code>	Distance to object on the left	meters/float
<code>get_distances()['right']</code>	Distance to object on the right	meters/float
<code>get_yaw()</code>	Get the yaw rotation of the drone	None
<code>get_status()</code>	Check if drone is flying or landed	None

```
[ ]: # Setup your drone simulator
from crazyflie_sim import CrazyflieSimulator
import time
drone = CrazyflieSimulator(real=False)
```

1.2 Objective

Write code that takes off, navigates around walls and obstacles, and escapes from a room with an opening.

- Use loops and conditionals
- Check distances in multiple directions
- Use print statements to debug your decisions
- Don't crash into walls!

Hint: Use `if` statements and `get_distances()` to decide where to go. Hint: `rotate()` can help you face a different direction if you're blocked.

```
[ ]: # Your code goes here:
```