

# Available Functions

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**Most functions return** True or False unless it is stated otherwise

(depending on success or failure of the action)

- **Distances** are in centimeters or millimeters (check the function)
- **Angles** are in degrees
- **Time** is expressed in seconds
- **Cube identifiers** are in {1, 2, 3}

### Interaction:

Function	Description
<code>say("text")</code>	Cozmo will say the input <i>text</i>
<code>say_something_to_visible_teammate("text")</code>	Cozmo will say the input text to a visible teammate

### Search in the environment:

Function	Description
<code>found = scan_for_cube_by_id(angle, cube_id)</code>	<ul style="list-style-type: none"><li>- Cozmo will rotate in place by the given angle looking for the cube with identifier <code>cube_id</code>.</li><li>- <u>If it <b>finds</b> the cube, it returns <b>True</b>.</u></li><li>- <u>If the cube <b>isn't found</b>, it returns <b>False</b>.</u></li></ul>
<code>dist_in_mm = distance_to_cube(cube_id)</code>	<ul style="list-style-type: none"><li>- Cozmo will measure the distance from itself to the cube. (distance in mm)</li><li>- <u>If it <b>finds</b> the cube, it returns the <b>distance</b> in mm.</u></li><li>- <u>if <b>no cube is found</b>, the function will return <b>False</b>.</u></li></ul>
<code>dist_left = distance_to_left_post()</code>	<ul style="list-style-type: none"><li>- Cozmo will <b>return</b> the distance to the left post</li><li>- Cozmo <b>must</b> have scanned for the left post</li></ul>
<code>dist_right = distance_to_right_post()</code>	<ul style="list-style-type: none"><li>- Cozmo will <b>return</b> the distance to the right post</li><li>- Cozmo <b>must</b> have scanned for the right post</li></ul>
<code>found = scan_for_ball(angle)</code>	<ul style="list-style-type: none"><li>- Cozmo will rotate in place by the given angle looking for the ball.</li><li>- <u>If it <b>finds</b> the ball, it returns <b>True</b>.</u></li><li>- <u>If the ball <b>isn't found</b>, it returns <b>False</b>.</u></li></ul>
<code>ball_dist = distance_to_ball()</code>	<ul style="list-style-type: none"><li>- Cozmo will <b>return</b> the distance to the ball</li><li>- The ball <b>must</b> be in cozmo's vision</li></ul>

## Navigation:

Function	Description
<code>rotate_right(angle)</code>	Cozmo rotates to the right by the given angle.
<code>rotate_left(angle)</code>	Cozmo rotates to the left by the given angle.
<code>align_with_nearest_cube()</code>	Cozmo will move toward the nearest landmark and will align itself in front of it.
<code>align_with_cube_by_id(cube_id)</code>	Cozmo will align itself with the cube with the given <i>cube_id</i>
<code>align_with_ball()</code>	Cozmo will align itself with the ball
<code>align_with_ball_and_cube(cube_id)</code>	Cozmo will align itself with the ball & cube, with the ball being between Cozmo & the cube.
<code>move_forward(distance)</code>	Cozmo will move forward the specified distance. (distance in cm)
<code>move_backward(distance)</code>	Cozmo will move backward the distance specified. (distance in cm)
<code>move_head_looking_up()</code>	Cozmo will move his head to look upwards.
<code>move_head_looking_forward()</code>	Cozmo will move his head to look forward.
<code>visible = is_face_visible()</code>	<ul style="list-style-type: none"><li>- Cozmo will check if there is a visible face in its camera.</li><li>- <u>If it <b>finds</b> a teammate, it returns <b>True</b></u></li><li>- <u>if <b>no teammate is found</b>, it returns <b>False</b>.</u></li></ul>
<code>align_with_face()</code>	Cozmo will move towards the face in the camera.
<code>wait_for_a_smiling_face_visible(waiting_time)</code>	Cozmo will wait for a specified <i>waiting_time</i> to check for a smiling face shown in its camera.

<code>found = scan_for_teammates(angle)</code>	<ul style="list-style-type: none"> <li>- Cozmo will scan the area to check if it recognizes a registered face.</li> <li>- <u>If it <b>finds</b> a teammate, it returns <b>True</b></u></li> <li>- <u>if <b>no teammate is found</b>, it returns <b>False</b>.</u></li> </ul>
<code>found_left = scan_for_left_post(angle)</code> <code>found_right = scan_for_right_post(angle)</code>	<ul style="list-style-type: none"> <li>- Cozmo will scan for the left/right post</li> <li>- It returns <b>True</b> if it finds it or <b>False</b> if it didn't</li> </ul>

### Actions:

Function	Description
<code>pickup_cube_by_id(cube_id)</code>	Cozmo will pick up the cube with the given cube_id.
<code>place_on_top(cube_id)</code>	Cozmo will drop the cube on top of another cube with the cube_id.
<code>drop_cube()</code>	Cozmo will drop the cube that it is holding.
<code>kick()</code>	Cozmo will move forward to kick the ball. Cozmo has to be near the ball

**Showing emotions (with behaviors):** Just try them out to see Cozmo showing his emotional behaviors!

```
show_happy() # 😊  
  
show_sad() # ☹️  
  
show_victory() # ...  
  
show_excited()  
  
show_frustrated()  
  
show_dancing()
```

**Flow control:**

```
stop()  
abort()
```

When things are not going in the desired way: Let's stop Cozmo!