6.2 Clean Up [Housekeeper]

Description

The robot has to clean up an *Arena* room with some misplaced objects, placing unknown objects in a garbage bin.

Main goal: Find six misplaced objects in a room and bring them to their predefined locations.

Optional goal: Handling heavy objects (e.g. cans filled with beverages) and small objects (e.g. spoon, fork, knife, cloth).

Focus

This task focuses on *Task Planning*, *Object Perception* and *Object Manipulation*.

Setup

- **Locations:**

  - This task takes place in a random room in the *Arena*.
  - The robot starts inside the *Arena* at a predefined location near the entrance door.

- **People:** Near the entrance, an operator tells the robot which room to clean.
- **Furniture:** All furniture are in their predefined locations.
- **Objects:**

  - There are 6–10 misplaced objects at random locations in the room.
  - Objects can be anywhere in the room, including the floor, seats, and on top of furniture.
  - All objects are clearly visible (i.e., no occlusions).
  - Objects can be regular and alike or garbage lying around at grasping distance.
  - Objects used in this test are lightweight and average-sized. The team leader can, however, request a tiny and a heavy object to be used in order to score additional points for picking them.
  - Objects must be placed inside the bin, not thrown or dropped.

Procedure

1. The referee requests the team to move the robot to the start location.
2. The referee gives the start signal and starts the timer.
3. The team leaves the area after the start signal.
4. A TC member follows the robot ready to press the emergency stop button.
5. The robot finds six misplaced objects in a room and brings them to their predefined locations.
6. **Optionally**, the robot can manipulate heavy and tiny objects.

Additional rules and remarks

No additional rules and remarks.

Instructions:

To Referee

The referee needs to:

- Place objects in the room.
- Recover disposed objects from the bin.
- Ask teams whether they want a heavy or a tiny object to be

To OC

The OC needs to:
- **2 hours before the test**: Announce the starting location of the robot.

Score Sheet

Maximum time: 5 minutes

Action	Score	1st try	2nd try	3rd try
Regular Rewards				
Place an object at the appropriate location	*6×250*	_____	_____	_____
Bonus Rewards				
Moving a *tiny* object	*250*	_____	_____	_____
Moving a *heavy* object	*250*	_____	_____	_____
Regular Penalties				
Place an object at the wrong location	*6×−100*	_____	_____	_____
Deus ex Machina Penalties				
Physically interacting with object	*6×−150*	_____	_____	_____
Guiding the robot near an object to be moved	*6×−50*	_____	_____	_____
Telling where an object can be found	*6×−50*	_____	_____	_____
Telling robot which category an object is or where to place it	*6×−50*	_____	_____	_____
Pointing out object to be moved	*6×−50*	_____	_____	_____
Score per try	*2000*	_____	_____	_____
Total Score	*2000*			