

Nursing Home

Deadline: 13.6.2021

Points: 25

Material requirement: your robot, a gripper, 2 pieces of 10cm x 20cm objects, 2 pieces of 5cm x 10cm objects, 12 balls (3cm x 3cm), 2 boxes (5cm x 5cm)



Topic description

It is increasingly discussed to use so-called assistance robots in nursing homes to take over various tasks such as lifting people out of beds, picking up things from the floor and handing them to the people or to accompany them on a path or to read out the daily newspaper etc....

We wish you a lot of fun with this and the following tasks!

Task description

- **Build a service robot**

Read the requirements for your robot carefully and upload us a picture of the robot that will do this task in the nursing home.

- **Set up your nursing home**

In your nursing home there is a large room, which is 100cm x 80cm (L x W). In this room there are 2 beds on the walls, one red and one blue. (You can build these beds out of cardboard, for example. They should be 10cm x 20cm x 10cm (L x W x H). In the beds lie people in matching colours. (You can also build these people out of cardboard and they should be 5cm x 5cm x 10cm). Adjacent to the room is the corridor that will lead you to the kitchen. In the kitchen there are 2 open boxes (5cm x 5cm x 5cm), each filled with a ball (3cm x 3cm). Opposite the kitchen is another common room. In this room there are 10 balls in 2 different colours.

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- **Provide care for people in the nursing home**

You start with your robot in the hallway and have the following tasks (which you can complete in a self-selected order):

- Take the blue person to the common room and bring the person blue food (a box with a blue ball) from the kitchen. Then take the food out of the box in front of the person and put it down in front of the person.
- Bring the red person their red food (a box with a red ball) to bed. Also take the food out of the package and give it to the person to the bed.
- Return both boxes to the kitchen.
- In the common room, 10 objects in 2 different colours are randomly distributed in the room (5 balls each) - these are personal objects of your 2 people. Put all the items of the assigned colour in front of each person's bed.

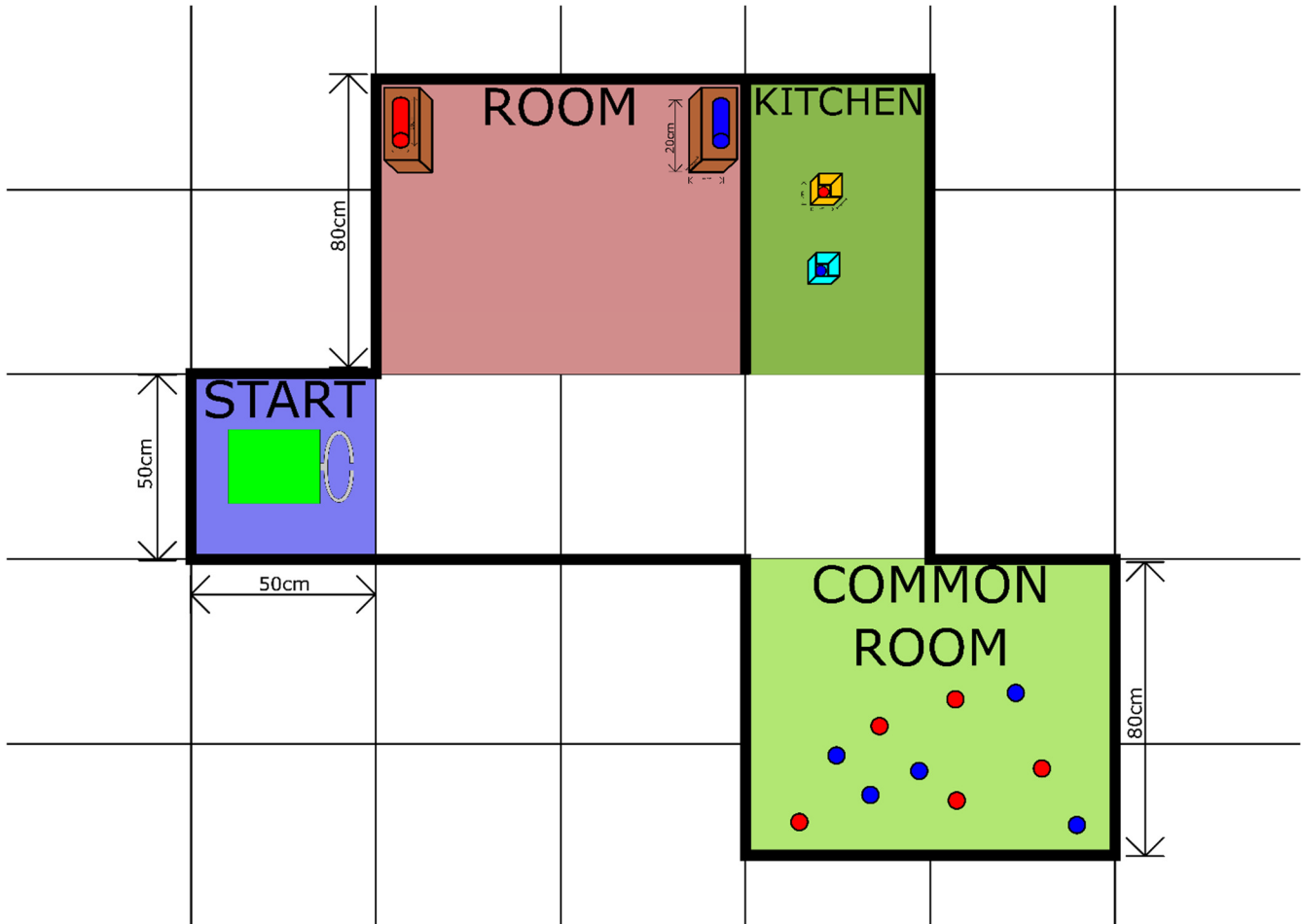
Upload a video of a successful attempt and your code. We want to be able to tell from the code that the robot can solve the task not only when the balls are in a very specific place.

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Evaluation criteria

- Photo of your robot
- Photo of your nursing home
- Video of your successful attempt
- Programming made so that the balls do not have to be in exactly the same place.
- Jury evaluation: The jury evaluates the quality and the creativity of the delivery.