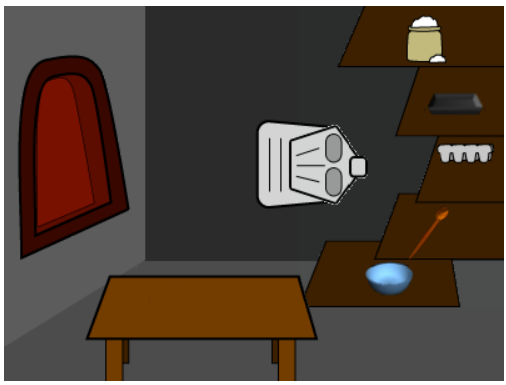
Introduction

Welcome to Sophie's Kitchen. This is an environment developed by Andrea Thomaz. In this experiment, you will interact with Sophie, a robot, and teach her how to bake a cake in a kitchen. You will test two different ways of communicating with her: (1) using feedback and guidance, or (2) through a system for suggestion/correction of actions.

The Kitchen Environment



In this task, Sophie is in the kitchen environment pictured. There are five objects in the kitchen: flour, eggs, a bowl, a spoon, and a tray. Sophie can move to one of three locations: to face the shelf on the right, the oven on the left, or the table in the centre. The five objects can be in any of these locations as well.

Sophie's Actions

- She can TURN-LEFT or TURN-RIGHT, which changes her location.
- She can PICK-UP any object in her current location, she can only hold one object at a time.
- She can PUT-DOWN the object she is holding.
- She can USE the object she is holding on any object in her current location, for example:
    - Using the flour on the bowl, puts flour in the bowl, or
    - Using the spoon on the bowl with flour and eggs makes batter.

The Kitchen Task: Bake a cake

Sophie does not know how to bake a cake, your task is to help her learn how to! The basic steps are: put the bowl on the table, add flour, eggs, and stir to make batter, put the batter in the tray, and put the tray in the oven. Sophie may need help making the cake a few times before she can do it herself.

Disasters and Goals

Sometimes Sophie will accidentally do actions that lead to the Disaster state. (Like putting the spoon in the oven!) When this happens “Disaster” will flash on the screen, the kitchen gets cleaned up and Sophie starts a new practice round. Additionally, if Sophie successfully bakes the cake, “Goal!” will flash on the screen, the kitchen gets cleaned up and Sophie starts a new practice round. For the disaster state, Sophie is automatically sent a negative message. For the goal state, Sophie is automatically sent a positive message.