

Assignment: Andy the Android

This is a set of problems based loosely on problems created by David Touretzky. You are asked to write procedures to move an android around a house. Read completely before you begin.

1. Attached is a schematic for a house. Design a suitable representation for the house and enter it into the computer. Assign this representation to the global variable ***rooms***. Your representation should be easily changed in case you are given a different house in a future assignment and you wish to reuse code. However, you may assume that in any new house a room will have at most one exit in any direction.
2. Write a function **directions** that takes a room as its argument and returns a list of directions that Andy can go in.
3. Write a function **next** that takes two arguments, a room and a direction, and returns the name of the room Andy will be in if he moves in that direction from that room. It should return **Nil** otherwise.
4. Use the global variable ***location*** to record Andy's current location. Initialize ***location*** to the kitchen.
5. Write a function of no arguments (a thunk) **where** that prints out a message telling where Andy is and returns that location as its value.
6. Write a function **move** that takes a direction as its only argument and *tries* to move Andy in that direction. It should print an appropriate message. Demonstrate **move** by walking Andy around the house.
7. Write a function **path** that takes two rooms as arguments and returns a list of directions that constitute a path from the first room to the second room. The path need not be optimal. Demonstrate **path** by finding a path between the kitchen and the master bedroom's bath.
8. Write a function **relocate** that takes a room as its only argument and moves Andy to that room. Demonstrate **relocate** by moving Andy to the bath.

Due: Tuesday, April 21