Assignment 1.4 – Computer Games

Computers operate differently than how we're used to interacting with people, and sometimes it's tough and frustrating to understand how to effectively communicate with them! This game is designed to help you understand two major concepts: the literal nature of how computers interpret commands, and exploring the functionality available to you as a programmer.

The main goal of the game is get another student (the "computer") to complete a task involving many simpler steps and movements by writing down a series of commands that another student will read to the computer. The trick is neither the reader or the computer will know what the end task is. The other trick is that you only get a set number of "functions" or simple steps to work with!

List of Simple Commands:

- Lift foot
- Lift arm
- Rotate hand
- Walk forward one pace
- Walk backward one pace
- Skip forward once
- Hop forward once
- Stop
- Go to begin position
- Step to the side
- Turn to one side
- Grasp item with hand
- Lift grasped item
- Turn handle or knob with hand
- Open book
- Close book
- Make a fist with hand
- Wave with hand
- Bend at the waist
- Cough
- Sneeze
- Whistle
- Speak

How to Play: First, find a partner to work with.

1. Take a look at the list of simple commands to get an idea of what you can get your computer to do.
2. Decide on a task you'd like for the computer to complete. You need to keep this secret, so don't write it on your program sheet.
3. On your program sheet, write the commands the reader will list, in the order they need to be completed, so that the computer will accomplish your chosen task.
4. When you are ready, trade programs with another team.
5. In your team, decide who will be the reader and who will be the computer. The reader will read commands to the computer, and the computer will try to execute those commands. It's very important that the computer does not try to interpret or guess what the end goal will be, simply follow instructions. For instance, if the instructions have you walk almost up to a table with a book and then tells you to grasp an item, do not take an extra step so you can reach the item. Only follow instructions as literally as you can!

6. If you are unable to complete a step in the program, such as the item that is too far away, write "ERROR" at the line of the program and describe what went wrong ("The item was too far away to reach.") You can continue on to the next command (even if the motions don't make sense).

7. Once you have finished, try to guess what the end goal should have been. This might be easy or hard. Write that down on the sheet then return it to the original group.

8. Collect your sheet and see what went right (no notes means it worked) and what went wrong (note the errors and read the explanations). If you need to, ask for the group's feedback on each other's programs to see how you can improve and get closer to the end goal.

9. Based on feedback, alter your program and rewrite it on a new sheet. Pick another different group and switch with them to run each other's programs.

10. Repeat steps 5 through 8 until the group successfully accomplishes the end task.

Program Sheet

Group members: _____

Program Steps:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
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30. _____

What is the end task?