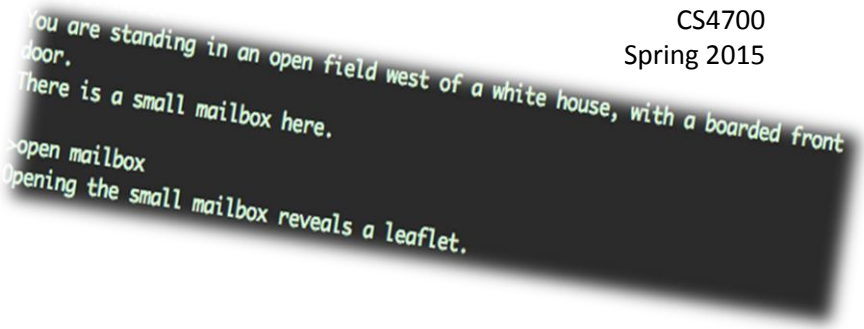
CS4700
Spring 2015

Adventures in Prolog



Introduction

In this assignment you will create an old-school text-based adventure game using Prolog. Your game will be in much the same vain as classic games such as Colossal Cave Adventure, Zork, Hunt the Wumpus, and Oregon Trail (see http://www.gamefools.com/onlinegames/free/zorktrilogy.html for an example).

Your submission will include *both* your Prolog game and a Game Description Document which will describe your game.

Some starter code has been provided in game.pl, it includes a user prompt, basic input processing, an example of describing and connecting areas, and the "go _____" action.

Part 1: Mapping it out (10 pts)

Create a world in which your game will take place in a Prolog knowledge base. This world can be based on the theme of your choice – be it a dungeon, a space station, a cave, or the 4th floor of Old Main. Your game world must consist of at least **9 connected areas or rooms**. They may be connected in any way you see fit. Each of these areas should have a creative **description which will be displayed to the user upon entering the room**. Include a diagram of your game world in your Game Description Document.

Part 2: Objects (10 pts)

There should be at least **10 unique items or objects** spread throughout the areas of your game. Some example objects might be: doors, keys, treasure chests, desks, strange machines, datapads, etc. **Create properties for these objects** – are they edible, breakable, can they be picked up, etc. **At least one of your objects should be a container**, meaning that it can contain other objects. Some objects may be useful in the Actions and Puzzles/Quests described below – while others might not be so useful. Note the location of the objects in your Game Description Document.

Part 3: Actions (30 pts)

As part of the starter code I have provided the definition for the action, "go _____", but feel free to modify this example.

You are **required** to implement the following actions (you may use different names more fitting to your game's theme if desired):

- "pick up _____" – Picks up an object and adds it to the player's inventory (not all items should be able to be picked up!). Picking up an item removes it from the current location.
- "drop _____" – Drops an item from a players inventory onto the ground in the player's current location. They must be able to pick the item back up.
- "inventory" – Displays a list of the items in the player's inventory.

Your game must allow the player to execute **at least 4 additional actions** (although you may include many more if you'd like – quit and help don't count!). These actions might include things like "unlock _____", "open _____", "inspect _____", "replace ____", "destroy _____", "eat _____", etc.

Obviously **not all actions should be valid in all circumstances or when applied to all objects**. You must include the code in your game to process these actions when they are input by the user. **If an action is invalid or meaningless in a given situation a message should be displayed**. List all of your actions and their expected use/syntax in your Game Description Document.

Part 4: Puzzles/Quests (40 pts)

To make your game interesting you will need to **include at least 3 quests or puzzles**. A quest or puzzle is a **series of actions** that the player must complete in order to advance further in your game. These quests should make use of the objects you've created in your game by performing actions on/with them. Some examples might be flipping a switch to open a locked door, picking up an oil can in one room and then using it on some rusty gears in another room, finding a missing part to a machine and then installing it later in the game, finding and turning on a flashlight to illuminate the exit, etc.

The completion of these quests/puzzles must be prerequisite to completing your game. After completing your final quest/puzzle the player should win, a congratulatory message should be displayed, and the game should end.

Part 5: Game Description Document (10 pts)

This document should be submitted along with your game in a common electronic document format (pdf or docx is preferred). It should consist of the following:

- Basic game description
- Map of your game world including locations of objects
- Listing of actions which can be performed and expected syntax
- Listing of the quests/puzzles in your game and the steps to complete them