

CoffeeMaker Quest

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CS 1699 - DELIVERABLE 1: Test Plan and Traceability Matrix

Test Plan

- **FUN-ITERATION**

- IDENTIFIER: FUN-ITERATION-N

- TEST CASE: Ensure that you can go North in any room with an option to go North.
 - PRECONDITIONS: You have just started the game and are in the first room (“You see a Small room…”).
 - EXECUTION STEPS: Type “N” and press Enter.
 - POSTCONDITIONS: You are in another room. You should see: “You see a Funny room…”

- IDENTIFIER: FUN-ITERATION-S

- TEST CASE: Ensure that you can go South in any room with an option to go South.
 - PRECONDITIONS: You have just started the game and are in the first room (“You see a Small room…”).
 - EXECUTION STEPS: Enter each of these letters sequentially as single inputs: N, S.
 - POSTCONDITIONS: You are in the first room (“You see a Small room…”).

- **FUN-UNKNOWN-COMMAND**

- IDENTIFIER: FUN-UNKNOWN-COMMAND-NUM

- TEST CASE: Ensure that the program does not allow numerical input.
 - PRECONDITIONS: You are in any room.
 - EXECUTION STEPS: Type 1 and press Enter.
 - OUTPUT VALUES: “What?”
 - POSTCONDITIONS: You are back in the same room and are prompted to input values again.

- IDENTIFIER: FUN-UNKNOWN-COMMAND-LETTER

- TEST CASE: Ensure that the program does not allow any letter input other than [N, S, L, I, D, H].
 - PRECONDITIONS: You are in any room.
 - EXECUTION STEPS: Type “g” and press Enter.
 - OUTPUT VALUES: “What?”
 - POSTCONDITIONS: “You are back in the same room and are prompted to input values again.

- IDENTIFIER: FUN-UNKNOWN-COMMAND-CHAR

- TEST CASE: Ensure that the program does not allow special character input.
 - PRECONDITIONS: You are in any room.
 - EXECUTION STEPS: Type “&” and press Enter.
 - OUTPUT VALUES: “What?”
 - POSTCONDITIONS: You are back in the same room and are prompted to input values again.
- **FUN-INPUT-CAPS**
 - IDENTIFIER: FUN-INPUT-CAPS-UPPER
 - TEST CASE: Ensure that the program accepts uppercase letters that are specified as allowed input.
 - PRECONDITIONS: You have just started the game and are in the first room (“You see a Small room...”).
 - EXECUTION STEPS: Type “N” and press Enter.
 - POSTCONDITIONS: The game accepts the input. You are in the room to the North. You should see: “You see a Funny room...”
 - IDENTIFIER: FUN-INPUT-CAPS-LOWER
 - TEST CASE: Ensure that the program accepts lowercase letters that are specified as allowed input.
 - PRECONDITIONS: You have just started the game and are in the first room (“You see a Small room...”).
 - EXECUTION STEPS: Type “n” and press Enter.
 - POSTCONDITIONS: The game accepts the input. You are in the room to the North. You should see: “You see a Funny room...”
- **FUN-MOVE**
 - IDENTIFIER: FUN-MOVE-NORTH
 - TEST CASE: Ensure that you can move North when the game specifies that there is a door to the North.
 - PRECONDITIONS: You have just started the game and are in the first room (“You see a Small room...”).
 - EXECUTION STEPS: Type “N” and press Enter.
 - POSTCONDITIONS: The game accepts the input. You are in a room to the North. You should see: “You see a Funny room...”
 - IDENTIFIER: FUN-MOVE-SOUTH
 - TEST CASE: Ensure that you can move South when the game specifies that there is a door to the South.
 - PRECONDITIONS: You have started the game and entered: N, N, as separate inputs. You should see: “You see a Refined room...”
 - EXECUTION STEPS: Type “S” and press Enter.

- POSTCONDITIONS: The game accepts the input. You are in the room to the South. You should see: “You see a Funny room...”
- IDENTIFIER: FUN-MOVE-WRONG-INPUT
 - TEST CASE: Ensure that you cannot move North or South when a door does not lead that way.
 - PRECONDITIONS: You have just started the game and are in the first room. You should see: “You see a Small room...” You should not see a door to the South.
 - EXECUTION STEPS: Type “S” and press Enter.
 - POSTCONDITIONS: The game does not allow you to move in that direction, and prompts you to input another value.
- **FUN-WIN**
 - IDENTIFIER: FUN-WIN-WITH-SUPPLIES
 - TEST CASE: Ensure that if you drink once you have the cream, sugar, and coffee, you win the game and the program terminates without error.
 - PRECONDITIONS: You have started the game and entered these letters, in order, as separate inputs: L, N, N, L, N, N, N, L.
 - EXECUTION STEPS: Type “D” and press Enter.
 - OUTPUT VALUES: “You have a cup of delicious coffee. You have some fresh cream. You have some tasty sugar. You drink the beverage and are ready to study. You win!”
 - POSTCONDITIONS: You win the game, and the program terminates without error.
 - IDENTIFIER: FUN-WIN-WITHOUT-SUPPLIES
 - TEST CASE: Ensure that you cannot win the game if you drink before you have all three items (cream, sugar, and coffee).
 - PRECONDITIONS: You have just started the game and have not entered any input.
 - EXECUTION STEPS: Type “D” and press Enter.
 - OUTPUT VALUES: “You drink the air, as you have no coffee, sugar, or cream. The air is invigorating, but not invigorating enough. You cannot study. You lose the game!”
 - POSTCONDITIONS: You do not win the game, and the program terminates without error.
- **FUN-LOSE**
 - IDENTIFIER: FUN-LOSE-ONE-ITEM
 - TEST CASE: Ensure that you lose the game if you drink with only one of the three items (cream, sugar, and coffee) in your inventory.

- PRECONDITIONS: You have started the game and have entered “L” as an input. You now have cream in your inventory.
 - EXECUTION STEPS: Type “D” and press Enter.
 - OUTPUT VALUES: “You drink the cream, but without caffeine, you cannot study. You lose!”
 - POSTCONDITIONS: You lose the game, and the program terminates without error.
- IDENTIFIER: FUN-LOSE-TWO-ITEMS
 - TEST CASE: Ensure that you lose the game if you drink with any two of the three items (cream, sugar, and coffee) in your inventory.
 - PRECONDITIONS: You have started the game and have entered these inputs separately, in order: L, N, N, L.
 - EXECUTION STEPS: Type “D” and press Enter.
 - OUTPUT VALUES: “Without sugar, the coffee is too bitter. You cannot study. You lose!”
 - POSTCONDITIONS: You lose the game, and the program terminates without error.
- **FUN-INVENTORY**
 - IDENTIFIER: FUN-INVENTORY-CHECK-ITEMS
 - TEST CASE: Ensure that you can check your inventory if it already contains items.
 - PRECONDITIONS: You have started the game and have entered “L” as an input.
 - EXECUTION STEPS: Type “I” and press Enter.
 - OUTPUT VALUES: “YOU HAVE NO COFFEE! You have some fresh cream. YOU HAVE NO SUGAR!”
 - POSTCONDITIONS: You are in the same room (“You see a Small room...”) and the game is prompting you for further input.
 - IDENTIFIER: FUN-INVENTORY-CHECK-NO-ITEMS
 - TEST CASE: Ensure that you can check your inventory if it contains no items.
 - PRECONDITIONS: You have just started the game and have not entered any input.
 - EXECUTION STEPS: Type “I” and press Enter.
 - OUTPUT VALUES: “YOU HAVE NO COFFEE! YOU HAVE NO CREAM! YOU HAVE NO SUGAR!”
 - POSTCONDITIONS: You are in the same room (“You see a Small room...”) and the game is prompting you for further input.
 - IDENTIFIER: FUN-INVENTORY-CORRECT

- TEST CASE: Ensure that the program lists the correct items when you check your inventory.
- PRECONDITIONS: You have started the game and have entered the following as separate inputs, in order: L, N, N, L, N, N, N, L.
- EXECUTION STEPS: Type “I” and press Enter.
- OUTPUT VALUES: “You have a cup of delicious coffee. You have some creamy cream. You have some tasty sugar.”
- POSTCONDITIONS: You should see “You are in a Rough room...” and the game is prompting you for more input.

● FUN-LOOK

○ IDENTIFIER: FUN-LOOK-NO-ITEMS

- TEST CASE: Ensure that you do not collect any items when you look in a room with no items.
- PRECONDITIONS: You have started the game and have entered “N” as input.
- EXECUTION STEPS: Type “L” and press Enter.
- OUTPUT VALUES: “You don’t see anything out of the ordinary.”
- POSTCONDITIONS: You do not collect any items from the room, and your inventory does not change. The game is prompting you for more input.

○ IDENTIFIER: FUN-LOOK-COLLECT

- TEST CASE: Ensure that when you look in a room containing an item, you collect that item.
- PRECONDITIONS: You have just started the game and have not entered any input.
- EXECUTION STEPS: Type “L” and press Enter.
- OUTPUT VALUES: “There might be something here... You find some creamy cream!”
- POSTCONDITIONS: You collect the item and add it to your inventory. The game is prompting you for more input.

● FUN-HELP

○ IDENTIFIER: FUN-HELP-COMMAND

- TEST CASE: Ensure that, at any point during the game, entering an uppercase or lowercase “H” will display a list of all possible commands and their effects.
- PRECONDITIONS: You are in any room, at any point in the game.
- EXECUTION STEPS: Type “H” and press Enter.
- POSTCONDITIONS: The program displays a list of all the possible commands and their effects, and then prompts you for input again.

- **FUN-UNIQ-ROOM**

- IDENTIFIER: FUN-UNIQ-ROOM-CHECK

- TEST CASE: Ensure that each room in the house has a unique adjective describing it.
 - PRECONDITIONS: You have just started the game and are in the first room of the house. You will see: “You see a Small room. It has a Quaint sofa. A Magenta door leads North.”
 - EXECUTION STEPS: Type “N” and press Enter. Verify that the room you are in is described by a different adjective than all previous rooms. Repeat this process until there is no longer a door that leads North.
 - POSTCONDITIONS: You will be in the final room of the house. You will see: “You see a Rough room. It has a Perfect air hockey table. A Minimalist door leads South.”

- **FUN-UNIQ-ROOM-FURNISHING**

- IDENTIFIER: FUN-UNIQ-ROOM-FURN-CHECK

- TEST CASE: Ensure that each room in the house has one and only one unique furnishing visible to the user upon entry to the room.
 - PRECONDITIONS: You have just started the game and are in the first room of the house. You will see: “You see a Small room. It has a Quaint sofa. A Magenta door leads North.”
 - EXECUTION STEPS: Type “N” and press Enter. Verify that the room you are in has a one and only one furnishing visible to the user, and that that furnishing is different than the furnishing in all previous rooms. Repeat this process until there is no longer a door that leads North.
 - POSTCONDITIONS: You will be in the final room of the house. You will see: “You see a Rough room. It has a Perfect air hockey table. A Minimalist door leads South.”

Defects Discovered

- **DESCRIPTION: Lowercase “n” not accepted as valid input.**
 - SUMMARY: Found in test case FUN-INPUT-CAPS-LOWER. The program does not accept a lowercase “n” as valid input, though the requirements specify that it should.
 - REPRODUCTION STEPS:
 - Start the game.
 - Type “n” and press enter.
 - EXPECTED BEHAVIOR: Your player goes North. You see the message: “You see a Funny room. It has a Sad record player. A Beige door leads North. A Massive door leads South.
 - OBSERVED BEHAVIOR: You see the message: “What?” You are in the same room, and you do not proceed to the North.
- **DESCRIPTION: Error codes displayed upon win or loss.**
 - SUMMARY: Found in both of the FUN-WIN test cases and both of the FUN-LOSE test cases. Upon winning the game, you see the message “Exiting with error code 0” before the program terminates. Upon losing the game, you see the message “Exiting with error code 1.”
 - REPRODUCTION STEPS:
 - Start the game.
 - Enter the following letters, each as a single input, in order: L, N, N, L, N, N, N, L.
 - ----- OR -----
 - Start the game.
 - Type “D” and press Enter.
 - EXPECTED BEHAVIOR:
 - If following the first set of reproduction steps, you should see:
 - “You have a cup of delicious coffee. You have some fresh cream. You have some tasty sugar. You drink the beverage and are ready to study. You win!”
 - If following the second set of reproduction steps, you should see:
 - “You drink the air, as you have no coffee, sugar, or cream. The air is invigorating, but not invigorating enough. You cannot study. You lose!”
 - OBSERVED BEHAVIOR:
 - If following the first set of reproduction steps, you see:

- “You have a cup of delicious coffee. You have some fresh cream. You have some tasty sugar. You drink the beverage and are ready to study. You win! Exiting with error code 0.”
 - If following the second set of reproduction steps, you see:
 - “You drink the air, as you have no coffee, sugar, or cream. The air is invigorating, but not invigorating enough. You cannot study. You lose! Exiting with error code 1.”
- **DESCRIPTION: Game allows movement North without door leading North, allows movement South without door leading South.**
 - SUMMARY: Found in test case FUN-MOVE-WRONG-INPUT. If no door exists to the North, you can still move North. If no door exists to the South, you can still move South.
 - REPRODUCTION STEPS:
 - Start the game.
 - Type “S” and press Enter.
 - ----- OR -----
 - Start the game.
 - Enter the following letters, each as a single input, in order: N, N, N, N, N, N.
 - OBSERVED BEHAVIOR: You will see the message: “You are in a magical land! But you are returned to the beginning!” You will be back in the first room. If you enter “L,” you will see: “You see a Small room...”
 - EXPECTED BEHAVIOR: Based on the game requirements: if you followed the first set of reproduction steps, you should not be permitted to move South when there is no door to the South; if you followed the second set of reproduction steps, you should not be permitted to move North when there is no door to the North. However, you are simply sent back to the beginning of the game in both cases, rather than remaining in place.
- **DESCRIPTION: Game does not accept “h” or “H” as valid input.**
 - SUMMARY: Found in test case FUN-HELP-COMMAND. Does not accept either uppercase or lowercase “H” as valid input.
 - REPRODUCTION STEPS:
 - Start the game.
 - Type “H” and press Enter.
 - OBSERVED BEHAVIOR: You will see the message: “What?” and you will then be prompted for more input.
 - EXPECTED BEHAVIOR: As per the requirement FUN-HELP, upon entering “H” you should see a listing of all possible commands and what their effects are.