# IT 140 Design Document Template

Jaden Bryon Knutson

**Name of Game:** The Infestation Game

**Theme and Setting:** The Kitchen

**Story:** King Cockroach has grown tired of the ongoing war between you and his family. In order to put an end to the war, King Cockroach has invented shrink ray technology in his secret lab. As you were strolling into the kitchen to spray some bug killer, King Cockroach has sprung out from his hiding place and used this newly developed technology on you and some of the other random items that happened to be around you. Confused and startled, you shrink down to the size of a bug and land on top of the kitchen counters. King cockroach scurries back into his secret lair, knowing that you will come seeking his shrink ray in an attempt to reverse it. He waits at his hideout, confident that there is no way you can beat him. King cockroach is strong, but with the different sprays and weapons that got shrunk down with you, you may just stand a chance when it comes to fighting King Cockroach.

**Villain:** King Cockroach - An evil scientist cockroach that lives in the kitchen trash can.

**Rooms and Weapons:** (Different locations: cupboards, drawers, and appliances in the kitchen)

**START:** **ITEMS:**

1. Top of Counter (No item)
2. The City of Pots and Pans Raid Bug Spray
3. The Dishwasher Wetlands Sticky Pads
4. The Forest of Spices Boric Acid
5. The Sketchy Snack Drawer Bag of Insecticide Dust
6. The Messy Microwave Protective Plastic Wrap
7. The Silverware Drawer of Solitude The Mighty Fly Swatter
8. The Trash Can Kingdom (No Item)

**END.**

**Game Map for: Roach Infestation Game**

Diagram, schematic

Description automatically generated

**Pseudocode for: Roach Infestation Game (Room Traveling and Item storage)**

START:

CREATE variable current\_room that will keep track of where the user is locationally.

ASSIGN current\_room with the name of the starting room as a string.

CREATE empty list for user\_items to store the items the user will later pickup.

ASSIGN variable room\_item as an empty string, we do this for the first room because there is no item in this room.

WHILE our current\_room does not equal the final room, we enter the loop.

IF the room has an item not in our user\_items list and the item is not an empty string.

INPUT an answer asking the user if they want to pickup the item or not.

IF answer is yes:

APPEND item to the user\_item list.

OUTPUT message stating they picked up the item.

ELSE IF answer is no:

OUTPUT message stating they did not pickup the item.

OUTPUT the users current\_room variable.

OUTPUT the user\_items list.

INPUT one of the four directions from the user: North, South, East, West.

ASSIGN the input as variable user\_direction.

IF current\_room equals our starter room “Counter Top”.

IF our user\_direction is equal to “West”.

ASSIGN current\_room to “The City of Pots and Pans”.

ASSIGN room\_item to “Raid Bug Spray”.

ELSE if the user\_direction doesn’t equal a valid direction.

OUTPUT to user that the direction or input was invalid.

ELIF current\_room equals “The City of Pots and Pans”.

IF user\_direction is equal to “North”.

ASSIGN current\_room to “The Dishwasher Wetlands”.

ASSIGN room\_item to “Sticky Pads”.

ELIF the user\_direction is equal to “East”.

ASSIGN current\_room to “Counter Top”.

ASSIGN room\_item to an empty string.

ELSE output that the user has gave an invalid direction.

ELIF current\_room equals “The Dishwasher Wetlands”.

IF the user\_direction is equal to “North”.

ASSIGN current\_room equals to “The Sketchy Snack Drawer”.

ASSIGN room\_item equals to “Insecticide Dust”.

ELIF the user\_direction is equal to “East”.

ASSIGN current\_room equals to “The Silverware Drawer of Solitude”.

ASSIGN room\_item equals to “Fly Swatter”.

ELIF the user\_direction is equal to “South”.

ASSIGN current\_room equals to “The City of Pots and Pans”.

ASSIGN room\_item equals to “Raid Bug Spray”.

ELIF the user\_direction is equal to “West”.

ASSIGN current\_room equals to “The Forest of Spices”.

ASSIGN room\_item equals to “Boric Acid”.

ELSE output that the user has gave an invalid direction.

ELIF current\_room equals “The Forest of Spices”.

IF the user\_direction is equal to “East”.

ASSIGN current\_room equals to “The Dishwasher Wetlands”.

ASSIGN room\_item equals to “Sticky Pads”.

ELSE output that the user has gave an invalid direction.

ELIF current\_room equals “The Sketchy Snack Drawer”.

IF the user\_direction is equal to “East”.

ASSIGN current\_room equals to “The Messy Microwave”.

ASSIGN room\_item equals to “Plastic Wrap”.

ELIF the user\_direction is equal to “South”.

ASSIGN current\_room equals to “The Dishwasher Wetlands”.

ASSIGN room\_item equals to “Sticky Pads”.

ELSE output that the user has gave an invalid direction.

ELIF current\_room equals “The Messy Microwave”.

IF the user\_direction is equal to “West”.

ASSIGN current\_room equals to “The Sketchy Snack Drawer”.

ASSIGN room\_item equals to “Insecticide Dust”.

ELSE output that the user has gave an invalid direction.

ELIF current\_room equals “The Silverware Drawer of Solitude”.

IF the user\_direction is equal to “North”.

IF the result of the len function on user\_items is equal to 6.

ASSIGN current\_room equals to “The Trash Can Kingdom”.

ASSIGN room\_item equals to an empty string.

OUTPUT a message to the user that they have won the game.

USE a break to end the program.

END.

ELSE IF the result is something other than 6.

OUTPUT a message to the user that they were defeated.

USE a break to end the program.

END.

ELIF the user\_direction is equal to “West”.

ASSIGN current\_room equals to “The Dishwasher Wetlands”.

ASSIGN room\_item equals to “Sticky Pads”.

ELSE output that the user has gave an invalid direction.

ELSE output that the user has gave an invalid input.

END.

Starting Documents:

Diagram, engineering drawing

Description automatically generated

A picture containing text, shoji, crossword puzzle

Description automatically generatedA picture containing sketch, line art, drawing, clipart

Description automatically generated