



Blue Clue

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CS 230: Final Project

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Blue Clue: User's Manual

Story of the Game (featured in the About Panel):

Takis walked down to the west side of the Science Center to enter the elevator to his 5th floor office. To his horror, the Otis elevator was broken!

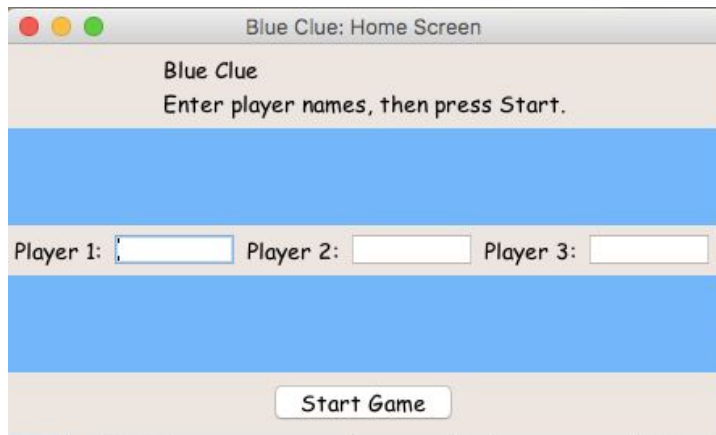
Have fun guessing who, what, and where so we can bring honor back to the Science Center!

Rules of Blue Clue:

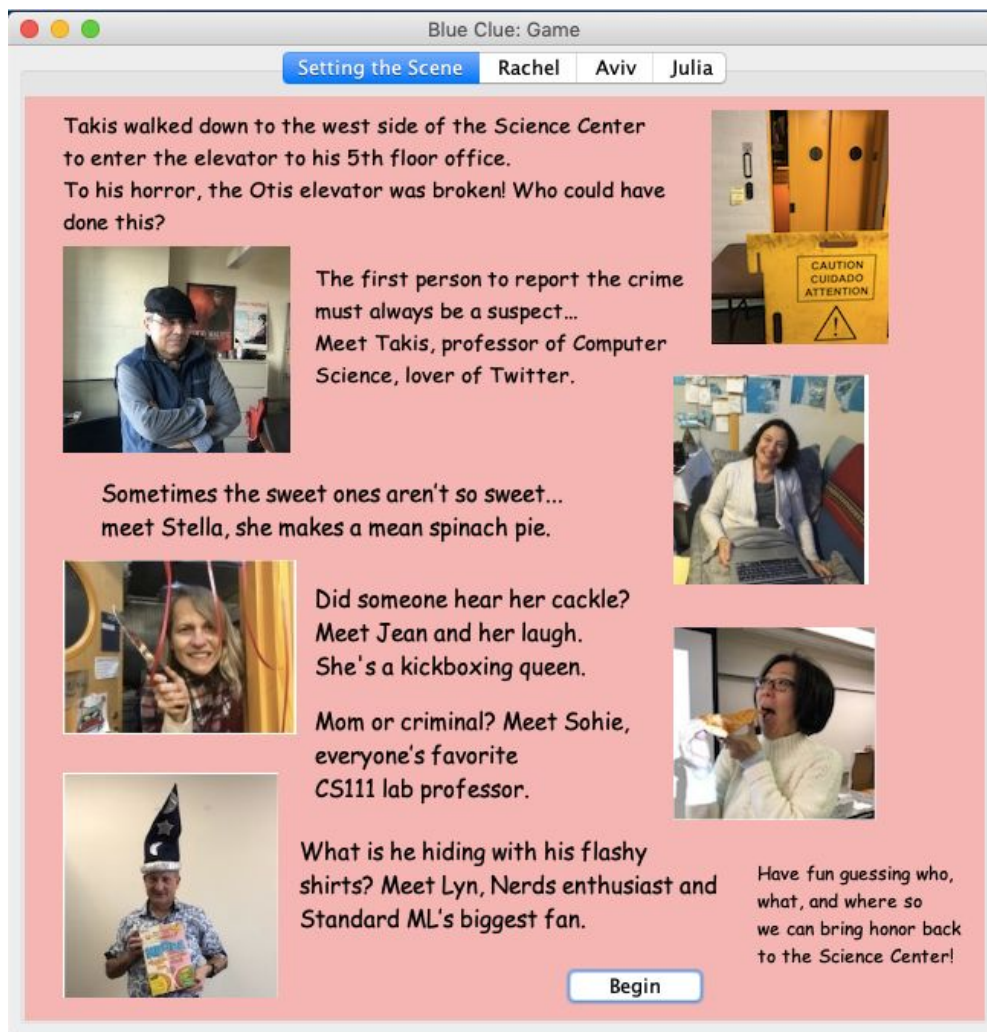
- Blue Clue is a three person game. At the beginning of the game, each player will be randomly assigned four cards out of the deck containing all of the professors, locations, and weapons.
- The three players will take turns guessing the person, place, and weapon responsible for the crime.
- The players can only guess when it is their turn (Player 1 will go first).
- Each player can guess whichever weapon and professor they want, but they can only guess the room that they are currently in.
- If they would like to switch rooms, when it is their turn, they can click on the "Switch rooms?" button and select a room from there.
- When a player guesses, if they are right about the professor, the weapon, and the location, they win! If they are wrong about any guess, the player is notified by the computer that their guess is wrong.
- The player has the choice to add a note to their notepad after an incorrect guess by clicking "Yes" on the pop-up dialog box. From there, they can add to their notepad by selecting a type, typing out a note, and clicking the "Add to notepad!" button. A player can check their notepad at any point during their turn.
- After the player has added a note, the next player will go.
- The game continues until someone wins.

GUI Examples:

“Blue Clue” Home Screen:



“Blue Clue” About Panel:




"Blue Clue" Game Board:


Blue Clue: Game

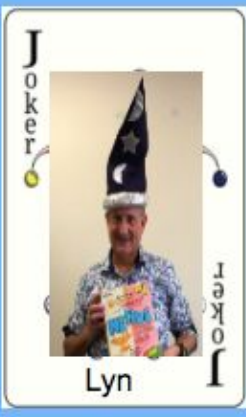
Setting the Scene Aviv Julia Rachel


Current room: E101

Quit

K  **K**
Takis

Q  **Q**
Frisbee

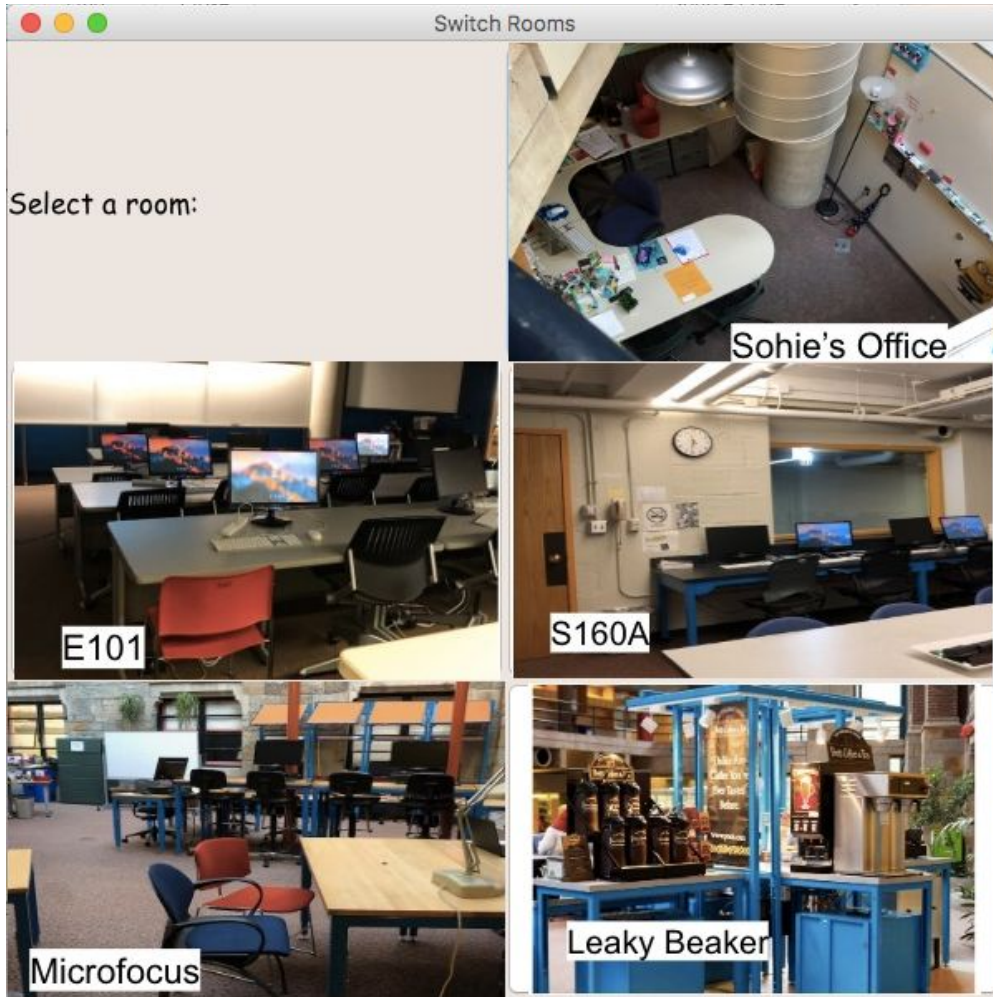
J  **J**
Lyn

J  **J**
Stella

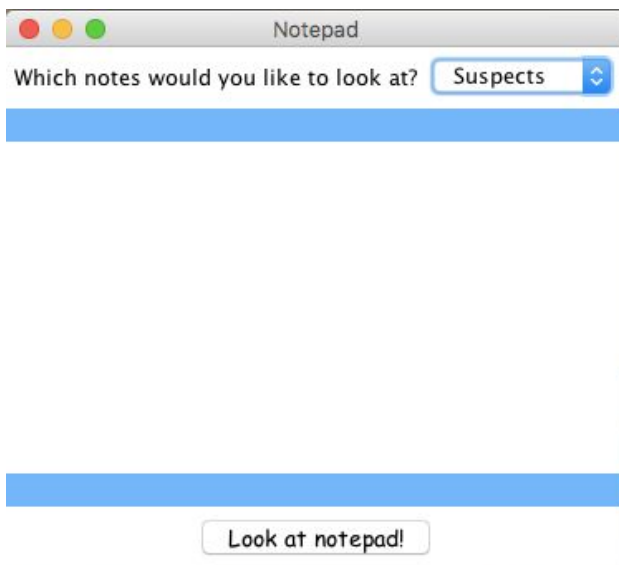
Guess? Professor: Takis Weapon: Keyboard

Switch rooms? Check notepad? Whose turn? Aviv

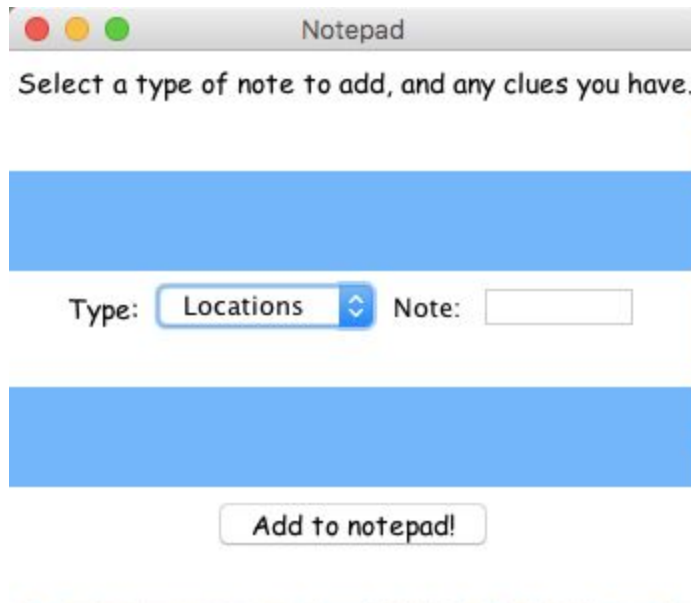
“Blue Clue” Switch Room Panel:



“Blue Clue” Notepad Panel:



Blue Clue “Add to Notepad Panel”:



Select a type of note to add, and any clues you have.

Type: Locations Note:

Add to notepad!

Overall Behavior: How does the user interact with the interface?

- The first panel the user sees will be the Home Screen Panel (see above). Each player will enter their name and then a player will click “Start Game.”
- When the user clicks “Start Game,” three cards will be randomly chosen (professor, weapon, and location) that describe the crime. Additionally, each user will be randomly assigned four cards from the remaining cards.
- After clicking “Start Game” the user will be redirected to the they should be redirected to the About panel. The user will read the About panel which explains the crime and introduces the suspects. Then the user will click the “Begin” button and will be redirected to the tab of the first player.
- Each player has their own tab. They can see their 4 cards and click a button to view their notepad or switch rooms.
- When it is their turn, the user can enter a guess from the professor and weapon drop down menus and then click the guess button.
- If the guess is correct, the computer returns a dialog box telling the user they won! If the guess is wrong, the computer will return an dialog box, offering the user a chance to add a note to their notepad.
- If the player wants to add to their notepad, they will click the “Yes” button and will be redirected to a pop-up screen where they can add a note about a suspect, weapon, or location.
- They can access their notes at any time during their turn by clicking the “Check Notepad” button. When the player clicks the “Check Notepad” button, it will take them to another panel that asks them to indicate which type (suspects, locations, professors) of notes they would like to view.

- Additionally, if the user wants to switch rooms at any point during their turn, they will click on the “Switch rooms?” button which will lead them to the “Switch Rooms” panel. From there, the player can click which room they’d like to move to and the label on their player tab will be changed.

Blue Clue: Technical Report

Abstract Data Types (ADTs):

- Hashtable:
 - Each player’s notepad is a hashtable of linked lists. We used a Hashtable so that the player could categorize their notes.
 - The Hashtable keys are types of notes (ie. “Suspects”, “Weapons”, “Locations”) and the values are notes stored as Linked Lists to prevent collisions.
 - When the player wishes to check their notepad, they will select the type (key), click the “Check notepad?” button and then the value of the key will be displayed on the panel.
- Linked List :
 - In order to prevent collisions, we used Linked Lists of Strings as the values in our Hashtable. Therefore, a player can add more than one note to a type (ie. “Suspects”, “Weapons”, “Locations”) if they want.

Classes:

- Player(String name)
 - The player class consists of four instance variables: the player’s name (String name), an array of the player’s cards (Card [] cards), the player’s notepad contents (Hashtable<String>, LinkedList<String>>) and the player’s current location.
 - Creates Player object in the constructor using the user input (name) from a text box on the Home Screen.
 - The Player class has several getters and setters including, getName(), getCards(), getNotepadContents(String type), getLocation(), setLocation(), and setCards(). All of these methods refer back to the instance variables of the Player class.
 - The Player class also has an addNote(String type, String note) method which adds a note from the addToNotepadPanel to the player’s notepad. This method either adds a value to a key or adds another value to a key in the form of a LinkedList.
- Game()
 - The Game class creates an instance of the game.
 - The overall purpose of the Game class is to instantiate three player objects, randomly choose the crime (professor, location, weapon) from a deck of cards and then randomly assign the rest of the cards to the three players.

- The methods chooseCrime() and distributeCards() help choose the crime and distribute the leftover cards to the players.
- The Game class also consists of a number of getters and setters, which are used in other classes.
- The Game class also has a method guess(String location, String weapon, String professor) which takes in the user's guess from the tabbed panel and returns a boolean.
- Card()
 - The Card class creates Card objects, which each have a name and a type (suspect, weapon, location).
 - The Card class also contains a toString and a getLabel method.
- BlueClueGUI()
 - The BlueClueGUI is the driver of the game.
 - It has an instance of the Game and creates a JFrame for the Home Screen of the game. The Home Screen is the first thing that the user will see.
- HomePanel()
 - The HomePanel() class creates the Home Screen using a Border Layout.
 - The Border Layout has a north, center, and south panel. The center panel contains three text boxes, where each player can input their name.
 - The HomePanel() also has a button listener. When the "Start Game" button in the south panel is clicked, three players are created and added to the game and several methods in the Game class are called including chooseCrime() and distributeCards().
 - The HomePanel() also creates a new tabbed Pane and sets up the tabs on the Game Screen with the Player names.
- TabbedPanel()
 - The TabbedPanel() has four tabs. One tab is the about panel, which describes the crime and the objectives of the game. The other three tabs are the player tabs.
 - Each player tab contains the images of the player's four random cards, a label with the current room of the player, a switch notepad button, a check notepad button, a quit button, a guess button, and two combo boxes.
 - The switch notepad button leads the player to a new panel where they can change the room they are currently in.
 - The check notepad button leads the player to a new panel where they can check notes they've written about their incorrect guesses.
 - The player clicks the guess() method after they've selected a room and chosen a professor and weapon from the combo boxes.
- AboutPanel()
 - The AboutPanel() (also known as "Setting the Scene") provides background information about the crime and introduces all of the suspects (Takis, Stella, Jean, Sohie, Lyn).
- NotepadPanel()

- The NotepadPanel() allows the user to select the type (locations, suspects, weapons) from a combo box, then click the “Look at notepad!” button to view the corresponding notes stored in the Hashtable.
- SwitchRoomsPanel()
 - The SwitchRoomsPanel() is a grid layout of room images that double as buttons. A player clicks on the room that they want to move to, and the label on the Game Screen changes.
- addToNotepadPanel()
 - The addToNotepadPanel() allows the user to add notes to their NotepadPanel() after an incorrect guess.
 - There is no button to add to the notepad, the user must click “Yes” on the dialog box after their incorrect guess to add new information to their notepad.

Important Methods:

Below are the important methods in our class that drive the majority of the program. We have several small helper methods that help these methods work.

- Game class has a guess() method that takes a user’s guess (professor, location, and weapon). The guess method will then determine whether they have guessed the correct answer or not. If yes, they win! If no, the guess() method returns a dialog box that asks the user if they would like to add to their notepad.
- Game class has a method chooseCrime() in which a professor, a location, and a weapon are each randomly chosen from the deck of cards and placed in a new array. There is an array that then stores the correct answer. (For example: [Lyn, Elevator, keyboard]). The chooseCrime() method will occur once a player clicks the “Start game” button.
- choosePlayerCards() is a helper method within the Game class that randomly gives each player four cards of the cards that are leftover in the deck.
- Player class has a getNotepadContents() method that returns the player’s notes on a specific type (location, suspect, weapon), therefore giving them a hint at a previously incorrect answer.