CSC 1300 LAB 7

Clue! CS Ed.

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A board game with ducks and a game board

AI-generated content may be incorrect.

# Concepts

* Menu Based Program
* Header files
* Functions
* Reference Variables

# Do Not Use Specific Constructs or GenAI

**You will get a greatly reduced grade (maybe even a zero for the assignment) if you use the following:**

* Arrays
* vectors, maps, algorithm, or any other library we haven’t used in class
* Structures
* Classes/objects
* exit()
* try-catch
* while(1) or while(0)

Also, as stated in the syllabus, **you may not use Generative AI**. Using generative AI is considered Academic Misconduct in this course. This includes ChatGPT of any model, Deepseek, Meta AI, Llama, GitHub Copilot, VSCode Copilot, or any other AI “assistant”. Novice programmers become over reliant on these tools and become overconfident that they know more about writing code then they do (this is backed up by research). Therefore, in this course you can’t use it in any lab or programming assignment.

# Instructions

* In this lab, you will finish creating the Clue! CS Ed. Program. Awesome Eagle was knocked out and found in the computer science office. There are 3 suspects – April Crockett, Brandon Vandergriff, and Aryal Kshitiz. It is your job to figure out who did it, where (either CLEM 402, BRUN 228, or AIEB 256), and how (strangled with computer charger, beaten with textbook, given a heart attack with Java code).
* You are provided with two functions (**clue\_given.cpp**) and the comment blocks for the other functions. Your task is to add the missing functions, add the driver.cpp file, and the clue.h header file. You may add more helper functions but **you** **must** implement the functions specified.
* **All user input should be validated.**

## Driver.cpp

The driver should contain the main function that does the following:

* + Print the title and instructions for the game (the printTitle function)
  + Generate a random number between 1 and 3 for the correct suspect, correct weapon, and correct room.
  + Prints out the menu (printMenu function) and allows the user to choose to Explore, Interview Suspects, Make a Guess, or Quit
    1. If they choose to explore, the program should call the inspectRooms function. If they inspect a new room, the program should call the hint function. If they inspected all 3 rooms, the program should print a bonus hint.
    2. If they choose to interview suspects, it should call the interviewSuspects function
    3. If they choose to make a guess, the program should call the getGuess function
    4. If they choose to quit, the program should end
  + The user should be able to keep choosing menu options until they either quit the program or make their guess
    1. If they quit, the program should print a goodbye message
    2. If they make a guess, the program should tell them if their guess was correct or incorrect and what the correct answers were.

## Clue.h

The header file should include:

* Include guards **or** pragma once
* The libraries your function will use
* The function prototypes

## Functions

Your job is to implement the missing functions:

* **string hint(int, int):** This function will take in the correct weapon and correct room and return a string (the hint). The clue\_given.cpp includes a comment block with more specifications of the function.
* **bool inspectRooms(bool&, bool&, bool&)**: This function will take in booleans that are true if a user has inspected that room or false if they have not and return true if they inspect a room they haven’t already explored. The clue\_given.cpp includes a comment block with more specifications for the function.
* **void interviewSuspects(bool&, bool&, bool&, int):** This function should take in booleans that are true if a user has already interviewed that suspect or false if they have not as well as an integer representing the correct suspect. The clue\_given.cpp includes a comment block with more specifications for the function.
* **bool getGuess(int, int, int)**: This function will take in the correct suspect, weapon, and room get the user’s guess for each. It will return true if all the user’s guesses are correct and false otherwise. The clue\_given.cpp includes a comment block with more specifications for the function.

The following functions are already implemented:

* **void printTitle()** – Prints the title of the function
* **int printMenu()** – Prints the menu options, takes in the user’s choice, validates it, and returns the choice.

## Hints.txt

This file is already created for you and will be used in the hint function.

# Sample Output

User input is highlighted in yellow.

## Sample Output 1

**\_\_\_ \_ \_ \_\_\_ \_\_\_ \_\_\_ \_**

**/ \_\_| |\_ \_ \_\_\_| | / \_\_/ \_\_| | \_\_|\_\_| |**

**| (\_\_| | || / -\_)\_| | (\_\_\\_\_ \ | \_|/ \_` |\_**

**\\_\_\_|\_|\\_,\_\\_\_\_(\_) \\_\_\_|\_\_\_/ |\_\_\_\\_\_,\_(\_)**

**Chief Dr Gannod, the head of the CS Department investigative team has come to you...a crime has been committed.**

**Awesome Eagle, the cool TTU mascot, was found unconcious in the CS office.**

**As a detective, it is your job to answer 3 questions:**

**Who?**

**What?**

**Where?**

**Investigate rooms to get clues as to where and what. Interview the suspects to find out who.**

**At the end, make your guess and see if you were right!**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 7**

**That isn't procedure. Please choose 1, 2, or 3: 0**

**That isn't procedure. Please choose 1, 2, or 3: 2**

**Which suspect would you like to interview?**

**1. April Crockett**

**2. Brandon Vandergriff**

**3. A Kshitiz**

**Enter 1, 2, or 3: 4**

**Please enter 1, 2, or 3: 1**

**Mrs Crockett says that she didn't speak to Awesome Eagle, but he had tried to meet with her that day.**

**She had told him to reach out to one of the other instructors if it was important.**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 1**

**Which room would you like to inspect?**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 1**

**Awesome Eagle was marked absent from lecture on the day he was knocked out**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 2**

**Which suspect would you like to interview?**

**1. April Crockett**

**2. Brandon Vandergriff**

**3. A Kshitiz**

**Enter 1, 2, or 3: 2**

**Mr Vandergriff claims to have been in his office in Prescott all day.**

**But that he distinctly remembers that Awesome Eagle had needed to talk to a Purple Group instructor about his grade**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 1**

**Which room would you like to inspect?**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 2**

**Awesome Eagle was marked absent from lecture on the day he was knocked out**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 1**

**Which room would you like to inspect?**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 3**

**Aweseome Eagle skipped his lab on the day he was knocked out**

**Inspecting all the rooms has let you notice this that you hadn't before:**

**Awesome Eagle doesn't remember seeing anything as horrifying as Java Code.**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 1**

**Which room would you like to inspect?**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 1**

**You have already inspected this room.**

**But the accoustics are nice so you decide to sing**

**Inspecting all the rooms has let you notice this that you hadn't before:**

**Awesome Eagle has no bumps or bruises.**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 3**

**You go to your chief and let him know you think you are ready to say what happened.**

**On that fateful day, you believe**

**1. April Crockett**

**2. Brandon Vandergriff**

**3. A Kshitiz**

**knocked out Awesome Eagle. Enter in 1, 2, or 3: 3**

**You think the suspect followed Awesome Eagle into**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 1**

**The suspect came up behind Awesome Eagle and used a**

**1. Computer charger**

**2. Textbook**

**3. The scariest thing known to man (Java Code)**

**to knock Awesome Eagle out. Enter 1, 2, or 3: 1**

**Correct! The criminal will be put away for good.**

## Sample Output 2

**\_\_\_ \_ \_ \_\_\_ \_\_\_ \_\_\_ \_**

**/ \_\_| |\_ \_ \_\_\_| | / \_\_/ \_\_| | \_\_|\_\_| |**

**| (\_\_| | || / -\_)\_| | (\_\_\\_\_ \ | \_|/ \_` |\_**

**\\_\_\_|\_|\\_,\_\\_\_\_(\_) \\_\_\_|\_\_\_/ |\_\_\_\\_\_,\_(\_)**

**Chief Dr Gannod, the head of the CS Department investigative team has come to you...a crime has been committed.**

**Awesome Eagle, the cool TTU mascot, was found unconcious in the CS office.**

**As a detective, it is your job to answer 3 questions:**

**Who?**

**What?**

**Where?**

**Investigate rooms to get clues as to where and what. Interview the suspects to find out who.**

**At the end, make your guess and see if you were right!**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 4**

**While you wish to remain on the case, drama within the department forces your hand.**

**You surrender all case materials to your coworker, knowing the case shall never be solved...**

## Sample Output 3

**\_\_\_ \_ \_ \_\_\_ \_\_\_ \_\_\_ \_**

**/ \_\_| |\_ \_ \_\_\_| | / \_\_/ \_\_| | \_\_|\_\_| |**

**| (\_\_| | || / -\_)\_| | (\_\_\\_\_ \ | \_|/ \_` |\_**

**\\_\_\_|\_|\\_,\_\\_\_\_(\_) \\_\_\_|\_\_\_/ |\_\_\_\\_\_,\_(\_)**

**Chief Dr Gannod, the head of the CS Department investigative team has come to you...a crime has been committed.**

**Awesome Eagle, the cool TTU mascot, was found unconcious in the CS office.**

**As a detective, it is your job to answer 3 questions:**

**Who?**

**What?**

**Where?**

**Investigate rooms to get clues as to where and what. Interview the suspects to find out who.**

**At the end, make your guess and see if you were right!**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 1**

**Which room would you like to inspect?**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 3**

**Awesome Eagle does not go to tutoring when he has questions**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 1**

**Which room would you like to inspect?**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 2**

**Awesome Eagle doesn't remember seeing anything as horrifying as Java Code.**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 2**

**Which suspect would you like to interview?**

**1. April Crockett**

**2. Brandon Vandergriff**

**3. A Kshitiz**

**Enter 1, 2, or 3: 3**

**Although busy, Mr Kshitiz stops and lets you know that he does not have Awesome Eagle for lecture**

**It's likely that Awesome Eagle had seen one of the other instructors that day.**

**As per detective procedure, you may do one of the following:**

**1. Explore**

**2. Interview Suspects**

**3. Make an educated guess**

**4. Quit**

**Which do you do? 3**

**You go to your chief and let him know you think you are ready to say what happened.**

**On that fateful day, you believe**

**1. April Crockett**

**2. Brandon Vandergriff**

**3. A Kshitiz**

**knocked out Awesome Eagle. Enter in 1, 2, or 3: 1**

**You think the suspect followed Awesome Eagle into**

**1. The tutoring lounge (CLEM 402)**

**2. The classroom (BRUN 228)**

**3. The lab room (AIEB 256)**

**Enter 1, 2, or 3: 1**

**The suspect came up behind Awesome Eagle and used a**

**1. Computer charger**

**2. Textbook**

**3. The scariest thing known to man (Java Code)**

**to knock Awesome Eagle out. Enter 1, 2, or 3: 1**

**Maybe you should have investigated more...**

**The correct suspect was: April Crockett**

**The correct weapon was: Computer charger**

**The correct room was: The lab room (AIEB 256)**

# Fill Out the Lab Report

You will fill out this lab report for every lab and it is part of your grade. To get credit, you must upload a screenshot of the confirmation page to this lab assignment. Name your screenshot **lab7ReportProof**.

**Lab Report Link:** <https://tntech.co1.qualtrics.com/jfe/form/SV_8CgQBOeBBefzeCO>

# What to Turn In

Create a zip file named **username\_lab7** containing the following .cpp files and upload it to ilearn. Replace username with your TTU username. Example: **acrockett43**\_**lab7.zip**

* clue.h
* clue.cpp
* driver.cpp
* hints.txt
* lab7ReportProof