

**Project Proposal Form**

Instructor: Dr. Schlosser Section: 10:20 AM Team Name: G1

Team Members' Names Tammy Nguyen-Huynh, Claire Forrestal

**Game Console:** Proteus C/C++

<p><b>Game</b> (include a brief description)</p>	<p>Simon: a random sequence of buttons displayed on the screen are generated and the user must enter the same order. Length of sequence increases as user continues to play in order to increase difficulty.</p>
<p><b>Basic Features</b></p>	<ul style="list-style-type: none"> <li>• Played by one player</li> <li>• The computer presents several regions of the screen player can touch</li> <li>• The computer generates and presents an order in which the screen should be pressed by the player</li> <li>• The player repeats this order from memory</li> <li>• Increasingly difficult orders are given to the player as the player progresses in the game</li> <li>• Player plays game for as long as desired</li> <li>• Number of sequences successfully completed by player is recorded and can be viewed by player</li> </ul>
<p><b>Additional Features</b></p>	<ul style="list-style-type: none"> <li>• Levels: The length of the sequence given to the player increases as they play, but the length (difficulty) remains the same throughout one level</li> <li>• Messages shown on screen to encourage or console player</li> <li>• Buttons are displayed in the regions of the screen that are touched</li> <li>• Buttons are of different shapes or colors</li> <li>• Number of buttons increase as difficulty of game increases (but there are a limited amount of total buttons)</li> <li>• Buttons light up/change color when touched by user</li> </ul>

**Instructor Approval – Do Not Fill Out**

Approved	Modifications Required

### Questions

1. How formal does the video game proposal/promotion have to be? Is it 'application assignment casual' or 'lab report formal'?
2. How complex should our game be, especially for the game's visuals and rules?
3. Who/what can we consult for reference for our code?
4. Is there a certain format we must follow when writing the program description for developers? Is there a certain format for comments in the program itself?
5. How technical should the user manual be? How basic or complex should figures be so that they properly communicate their message?
6. Are there any opportunities for extra credit within the project?
7. Will there be any open lab available to us during the project where we can receive help?
8. If we have chosen to record a commercial, how should it be integrated/referenced in the documentation packet?
9. Do we have to stick with our original proposal if the game/plan we chose was too complicated or difficult?

### Game Criteria

- Single-player
- Graphical user interface
- Game Features
  - Introduction to the Game
    - Start Menu:
    - Play the Game
    - Rules/Instructions
    - Statistics (Tracking and Displaying)
    - Credits (Any References Consulted/Who Wrote Source Code)
  - Single Player Capability
  - Ability to Replay
  - A Graphical User Interface
- Programming Fundamentals needed:
  - User-defined Functions
  - Loops
    - for
    - while
    - do- while
  - Selection Structures
    - if/else
    - switch/case
  - Operators
    - relational
    - logical
  - At least one class/object

## 5+ brainstorming ideas

Type	Description
Simon	-a random sequence of buttons displayed on the screen are generated and the user must enter the same order. Length of sequence increases as user continues to play in order to increase difficulty.
Connect Four	-user must select position of certain chip to fall that is distinct from chips generated by the computer. The user will drop chip onto a grid, then the computer will drop a chip into the grid.
Hangman	-game would need a data base of words for computer to randomly choose and require user to guess the letters that compose it. -need to construct an image of a human that when completely constructed, the game quits -need to record responses of user as to not allow user to repeat previously guessed letters.
Go Fish	-Requires a computer opponent. Both user and opponent has hand of cards and try to find matches within hand which are discarded. User who runs out of cards first wins. User and opponent must be able to ask for card and receive it.
Jump/Duck game	-screen automatically scrolls across with increasing speed as played guides a character past 2-D obstacles by making the character jump or duck

## Pseudo Code

-Program displays a start menu that gives the user 5 options: Start Menu: Play the Game, Rules/Instructions, Statistics (Tracking and Displaying), Credits (Any References Consulted/Who Wrote Source Code). Choice of user executed by a switch case

Start while loop so that game can be repeated as long as user wishes

Display four buttons/any visuals that show the areas of the screen that the player can touch  
Assign these regions of the screen integers; if there are four regions, these can be assigned values of 0, 1, 2, 3

For/while loop for first level

Randomly generate sequence of these integers

Store sequence in array

Wait for user response

If user successfully completes sequence, do not leave loop. If not, exit while loop

Slowly expand array so that it can store larger sequences as game progresses in difficulty