Clue

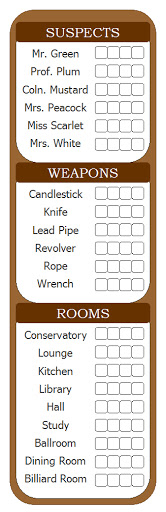
Planning Document

# Stuff to Do:

* Gameplay loop
  + Start with Red
  + Let the new player to control
  + Roll dice
  + Move on the board
  + Make Suggestions if player is in a room
    - Set suggestion to current room
    - Move players and weapons to room
    - Any players that has one of the suggested cards shows the main player
    - Automatic or manual update the detective notebook
      * Who, what, where?
  + Accusation if wanted
    - Check if the accusation matches the answer
    - Display the answer
    - Remove the player from turn order if incorrect
    - Finish the game if correct
  + Next turn (Red -> Yellow -> Pink -> Green -> Blue -> Purple)
* Game manager (Abdullah)
  + Communicate between Controllers
  + All handlers and scripts communicate through the game manager
  + Stores the correct answer cards
* Turn Handler (Abdullah)
  + Keep track of order
  + Able to remove player from the turn order
  + Next turn
    - Pass current player to next
  + Keep players in an array
  + Keep current player as index of the array
* Round Handler (Abdullah)
  + Keep track of what the player can do during the turn
  + Includes:
    - Rolling the dice
    - Move the player
    - Make suggestion
    - Make accusation
    - End turn
* Game generator (Tomasz)
  + Set correct cards for answer cards
  + Pass cards to game manager
  + Deal remain random cards to players
  + Pass cards to player handler
  + Allocate weapons to random room
* Player (Stats) Handler (Anson)
  + Is player AI
  + Which the player is
  + Manage what cards the player has
  + Handle detective notebook
* Player Input Handler (Anson)
  + Roll dice button
  + Select which square to move
    - Raycast from camera/ player mouse position
    - Select the square that it hits
  + Making a suggestion
    - Selecting the suggested cards
  + Making an accusation
    - Selecting the accusation cards (like suggested cards)
  + End turn button
  + Handle inputs to the notebook
* Detective notebook Handler (Anson)
  + Table of all rooms, weapons, and character
  + Manually cross out combinations
    - Automatic if easy mode
  + Dictionary of character, weapon and room with Boolean if it is found.
* Dice Roller Handler (Danny)
  + Roll dice/ die
  + Feeds the results to board handler
* Board Handler (Danny)
  + Tracks where players are
  + Tracks where weapons are
  + Tracks where rooms are
  + Displaying grid
    - Display 1 unity unit per grid
  + Allowing the player to select and move to certain square
  + Secret connection between room
  + No 2 character can be on the same space
  + Find and highlight movable square on the board
  + Communicate with character movement handler
* Board Generator (Danny)
  + Keep a 2D array map of all the movable space
  + Generate map and graph of the board
    - Graph stores connection between connected squares
  + Manually input the which node connects to which room
* Character movement Handler (Anson, Need board)
  + Move character directly on the board
  + Move character to the currently suggested room
* weapons movement Handler
  + Move weapons to the currently suggested room
* Multiplayer
  + ???
* AI Player
  + Random decisions
* Art
  + Modelling of board
  + Character art
  + weapons art
* UI Handle
* Game Settings
  + Easy mode
  + Authentic mode
  + Custom mode

List to ask Watson Games

* How many dice?
* Multiplayer / online



Technical Standards:

* Uses Unity Game Engine
* Scripts written in C#
* 3D Models Made in Blender (maybe c4d)
* 2D models made in pixel art software (idk which one yet)
* Incremental Meetings regarding progress
* Scripts must communicate through the game manager

**Components**

1. Game Manager
   1. Allow Communication between Managers
2. Turn Manager
   1. Logs all players in the game
   2. It knows which is the current player
   3. It can find and order all players
   4. End and start a turn
   5. Remove the player from the turn if they lose
3. Round Manager
   1. Handles all behavior the player can do during the it’s turn
      1. Rolling the dice
      2. Moving the player token
      3. Making suggestion
      4. Making accusation
      5. Ending the turn
4. Board Manager
   1. Generation of the board based on the excel sheet
   2. Stores all tiles and the connections between them
   3. Traversing the board to find the all the tiles the player can move on
   4. Highlight the movable tiles
5. Tile Class
   1. Stores the location of the tile on the board
   2. The type of the tile
   3. Know if there is a player on that tile
   4. Handle the effects and material of the tile
6. Room Class
   1. Know what room this is
   2. Store the positions of weapons and players
   3. Knows what weapons and player is in the room
   4. Stores the connected exits from the room
7. Dice Class
   1. Roll the physics dice
   2. Returns the results when it the dice stop rolling
   3. Re roll the dice if it gets stuck
8. Player Controller
   1. Add and store cards
   2. Assigning it the correct token
   3. Moving the token to the correct position, tile and room
   4. Check if the player is in the room
   5. Check if the player has a certain card
   6. Knock out the player if it passed the wrong accusation
9. User Controller
   1. Communicate User inputs (mostly from UI) to the corresponding components
10. Weapon Manager
    1. Stores, handles, and keep track of all the weapons
    2. Moving the weapon to the correct location
11. Card Manager
    1. Stores, handles, and keep track of all the cards
    2. Assigning the answer cards
    3. Dealing the cards to the player
    4. Randomizing the cards
12. UI Handler
    1. The UI elements
       1. Rolling the dice
       2. Making suggestion
       3. Making accusation
       4. End turn
       5. View player card deck
       6. Detective notebook
13. Detective Notebook
14. AI Controller
    1. Decision based off logic flow chart (Unity Animator)
    2. Can perform the following actions
       1. Move
       2. Suggestion
       3. Accusation
       4. End Turn
    3. Ai will be in these few Stats:
       1. Thinking
          1. While it is deciding what action to take next
       2. Move
          1. When It decides to move
       3. Suggestion
          1. When it decides to suggest
       4. Accusation
          1. When it decides to accusation
       5. End Turn
          1. When it decides to end it’s turn
       6. Wait\_Dice
          1. While it is waiting for the dice to land
       7. Decide\_Movement
          1. While it is deciding where it should move
       8. Wait\_PlayerMove
          1. While it is waiting for the player token to move

**Gantt Chart:** [**https://sharing.clickup.com/g/h/4g8em-8/2313cf92eff0027**](https://sharing.clickup.com/g/h/4g8em-8/2313cf92eff0027)

