

# Requirements

## Introduction

At our first meeting we read the brief, and with that in mind, we played cluedo to get a feel for a general detective game. This sparked discussion as to what works in a game, and it gave us ideas for how our game should work. We decided the most effective way of thinking about the game was like “guess who”. Using the brief and our new ideas, we produced a list of features we’d like to include in the game, and then prioritised those.

After the initial meeting, we produced a number of user scenarios [1], and used our list of features to help produce a draft of the requirements. From these we identified ambiguous points and produced questions we needed to get answers for. We met multiple times with the customer throughout the design process, to present our requirements and ask questions we had. Using their feedback, we made any necessary changes.

Following the response we got after the Assessment 1 feedback was released, we decided it was best to rewrite our requirements. This led to substantial improvements in the clarity and categorisation of our requirements, and this has benefitted us as it made the requirements easier to test against when it came to implementing the game.

When designing the requirements, we took these points into account:

- The requirements should be categorised as:
  - **Functional** requirements - these define what the system should do
  - **Nonfunctional** requirements - these define the behaviour of the system
- The requirements should be achievable within the time allocated of this project
- The requirements should consider the hardware in which the game should run
- The requirements should meet all points included in the brief
- We produced a survey asking about input methods and accessibility [2]. We got a sample of our target market to respond. From this we found:
  - The preferred way of interaction with the game was keyboard and mouse.
  - There were no results from colourblind people, however we still felt it was important that our game was accessible, so have included accessibility features as a “could” requirement. Colour blindness is a condition apparent in 1 in 12 men and 1 in 200 women [3] so we feel that it is a requirement that some people would benefit from.

The requirements are laid out in tables based on the IEEE standard for system requirements, as we felt this was a good standard to adhere to. The tables are split according to type (functional or non-functional), and category. Some requirements have associated risks, these are referenced in the table below, and are defined in the risks document.

Each requirement is given a unique identifier to make it easy to locate, and for traceability. The identifiers are made up of three numbers, using the following system:

- The first number is category, this represents the functional area of the requirement
- The second number represents how important the requirement is:
  - 1 = **Must** implement
  - 2 = **Should** implement
  - 3 = **Could** implement
- The third number is the position in the list, used to ensure the identifier is unique.

# Functional requirements

## Game

ID	Requirement	Success Criteria	Alternative	Risk ID
1.1.1	To start the game there must be a main menu	The game has a working clear menu	The game starts immediately when its opened	21-24
1.1.2	The game must be fully controlled by a mouse and keyboard	The game can be interacted with using only a mouse and keyboard	The game is controlled by an Xbox controller.	21-24
1.1.3	Game must have different 'plotlines'	Each gameplay is different in some way	Game only has 2 plot lines.	21-24
1.2.1	There should be a way of suspending or pausing the game	There is the option to pause the game which opens a pause menu	The game cannot be paused	21-24
1.3.1	Could be controlled by a gamepad	The game can be interacted with using a gamepad	Game is only controllable by keyboard and mouse.	21-24
1.3.2	Could have a sound track	Music will be played when the game is running	There is no sound track.	21-24
1.3.3	If game has a soundtrack, it must have an option to turn the sound track off	There is a player accessible way to turn the sound track off within the game	The soundtrack would always be on.	21-24

## Player

2.1.1	The player must have a personality that is customisable	The players personality changes in the game	The player personality does not change.	21-24
2.1.2	Must not be able to accuse a NPC unless enough evidence has been found	The player cannot see the option to accuse an NPC unless they have interacted with enough clues	Can accuse an NPC without evidence.	21-24
2.1.3	The player must start in a central room at the start of every game	When the game starts, the player should be in the centre of the "Ron Cooke Hub"	Player can start in any room.	21-24
2.1.4	The player must be able to navigate between rooms on the map	The player can move throughout the map and transition to other rooms when desired	The player progresses through rooms automatically.	21-24
2.1.5	The game must be turn-based where two players swap between who is playing.	The game switches who is playing every few interactions with the game.	Necessary requirement.	21-24
2.2.1	The player should be able to see their current personality level	The game should present the player with an GUI element showing their personality level	The Player will not be able to see their current personality level	21-24

## NPC

3.1.1	Each killer must have a motive	The killers all have motives	All killer have the same motive.	21-24
3.1.2	There must be 10 NPCs(non playable characters).	The player should be able to locate 9 NPCs as well as there being 1 victim.	There are less than 10 NPC's.	21-24
3.1.3	The NPCs must all exhibit differing personalities.	The NPCs interact with the player in differing ways.	The NPCs will all act in the same way to the player.	21-24

## Map

4.1.1	The game must have a map containing 10 separate rooms	The player should be able to visit 10 different rooms in the game	The game has less than 10 rooms.	21-24
ID	Requirement	Success Criteria	Alternative	Risk ID
4.1.2	All rooms must be of varying sizes.	The player should be able to notice all the rooms being of different sizes and shapes.	There are several rooms of equal size.	21-24
4.1.4	The map must have a 'secret' room	The map contains a room that is not accessible at the start of the game.	Necessary Requirement.	21-24
4.1.5	The secret room is not accessible until a puzzle is solved	After solving a puzzle, the secret room becomes accessible.	Necessary Requirement	21-24

## Clue

5.1.1	There must be at least one clue in each room of the map	The player can navigate to every room and be able to locate a clue	Some rooms may have no clues, some may have multiple	21-24
5.1.2	The player must be able to interact with a clue	The player should be able to interact with a clue once it has been located	The player gets the clue without interaction.	21-24
5.2.1	There should be a journal where clues are placed by a player for future reference	The player can see a journal in the GUI that allows visibility of collected clues	Clues are stored internally but the player will not be able to see them	21-24

## Score

6.1.1	There must be a score shown to players in the game	The player must see a score displayed in the GUI	There will be no scoring.	21-24
6.2.1	There could be an online scoreboard to keep high scores	There could be a scoreboard in the GUI that presents the all time high scores	There will be a local list of high scores, or no scoring	21-24

## Dialogue

7.1.1	The player must be able to interact with an NPC	A player can go up to an NPC and talk to them	The player cannot interact with NPC's.	21-24
7.1.2	The player must have the option of questioning an NPC	When a player talks to an NPC, they should have the option to question them	The player cannot question an NPC.	21-24
7.1.3	The player must have the option of ignoring an NPC	When a player talks to an NPC, they should have the option to ignore them	The player cannot ignore an NPC.	21-24
7.1.4	The player must have the option of accusing an NPC	When a player talks to an NPC, they should only have the option to accuse them if they have found enough clues to accuse the NPC	The player cannot accuse an NPC.	21-24
7.1.5	The player must choose from a set of questions when interacting with an NPC that reflects different personalities	When a player talks to an NPC, and chooses to question them, they can choose from multiple speeches with different personality levels. Eg. Aggressive	The player only has one	21-24
7.1.6	Each NPC must respond differently to questions from a Player depending on both NPC's and Player's personality and characteristics	When an NPC responds to a player after being questioned, their response must be determined by their characteristics and the player's personality	All NPC's respond in the same way.	21-24

7.1.7	The player must be shown introductory and closing dialogue.	Before the player can play they are shown an introduction and once they have completed the game the player is given a 'goodbye speech'.	The player will not be given any context dialogue.	21-24
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## Win/Lose Conditions

ID	Requirement	Success Criteria	Alternative	Risk ID
8.1.1	The game must be 'won' when the player successfully accuses the murderer	If the player accuses the murderer then the game is won.	This is a necessary requirement.	21-24
8.1.2	The game must be 'lost' when the player accuses too many NPCs	If the player accuses too many NPCs then the game is lost.	The game will not be able to be 'lost'	21-24

## Nonfunctional requirements

### Game

1.1.4	Must run on the university computers	An executable is provided the runs on the computers	The game will not run on university computers.	7
1.1.5	Must run on Windows 10	An executable is provided that runs on windows 10	The game will not run on windows 10.	7
1.2.2	Should run on MacOS	An executable is provided that runs on MacOS	There will not be an executable that runs on MacOS	7

### NPC

3.1.4	Each NPC must have a personality that affects and is affected by game play.	The NPC will respond best to different types of question. For example, an aggressive NPC will respond best when questioned nicely.	All NPC's have the same personality.	21-24
3.1.5	The killer and victim must be randomly selected each time the game begins from two sub-lists of killers and victims.	When the game starts, the victim and the killer has been selected at random.	The killer and victim is the same every time.	21-24
3.1.6	Each NPC must be randomly assigned to a room at the start of the game	All NPCs should be situated within a different room at the start of the game.	Each NPC is always in the same room.	21-24

### Map

4.1.3	The room where the murder occurred must be randomly selected at the start of every game	One random room should be the selected murder location at the start of every game	The murder room is always the same.	21-24
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### Clues

5.1.4	The murder weapon clue must be found before the player can accuse any NPCs	The player cannot accuse an NPC until they've located the murder weapon clue	Can accuse without the murder weapon.	21-24
5.1.5	Most clues must help with identifying	A clue will narrow down the number of	All clues help identify	21-24

	the killer	suspects left to be the killer	the killer	
5.1.6	At the start of the game, clues must be randomly assigned to each room in the map	There must be at least one clue in every room of the map at the start of the game	Clues always in same location.	21-24
5.1.7	The motive clue must be found before the player can accuse any NPCs	The player cannot accuse an NPC until they've located the motive clue	Can accuse without the motive clue	21-24
ID	Requirement	Success Criteria	Alternative	Risk ID
5.2.2	Clues could be picked up by a player and placed in a journal	The player can interact with a clue and place it in their journal for future reference	Clues will be stored internally, but may not be seen by the player	21-24

## Score

6.1.2	The player's score must take into account the time taken	The score must change depending on how long the game has lasted	There will be no scoring.	21-24
6.1.3	The player's score must take into account the number of wrong accusations	The score must change depending on how many accusations the player has made	There will be no scoring.	21-24
6.1.4	The player's score must take into account the number of questions asked	The score must change depending on how many questions the player has asked	There will be no scoring.	21-24
6.1.5	The player's score must take into account the number of clues found	The score must change depending on how many clues have been found by the player	There will be no scoring.	21-24

## Dialogue

7.1.8	The type of question asked to an NPC by a player must determine the player's personality	When a player chooses a speech to say to an NPC, their personality level is affected by their choice	The type of question asked affects nothing.	21-24
7.1.9	If an NPC is accused and isn't the killer then the NPC must refuse to interact for the rest of the game	When a player interacts with a previously accused NPC they shouldn't get a response	The NPC does not mind being falsely accused.	21-24
7.1.10	If an NPC is ignored, the Player cannot interact with the NPC again until a change in the situation occurs.	The Player cannot question, accuse or ignore an ignored NPC again until another clue is found, the Player moves to a different room or the Player talks with a different character.	The Player can question, accuse or ignore an ignored NPC without any changes to the situation.	21-24

## Bibliography:

- [1] Appendix A [online] [docs4.lhq.me/en/latest/Assesment4/AppendixA](https://docs4.lhq.me/en/latest/Assesment4/AppendixA) [Created 22/11/16]  
[2] Appendix C [online] [docs4.lhq.me/en/latest/Assesment4/AppendixC](https://docs4.lhq.me/en/latest/Assesment4/AppendixC) [Created 21/11/16]  
[3] Colour Blind awareness [online] <http://www.colourblindawareness.org/colour-blindness/>, [Accessed 3/11/16]