THE

TEAM

Vision Document

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1. Introduction

1.1 Purpose of vision document

The purpose of this document is to identify the goals, needs, and desired features of the Clue-Less product from the stakeholders' viewpoint. To accomplish this, the document will also identify stakeholders, users, and their needs. This document will clearly state the problems, proposed solutions, and high-level features of the Clue-Less product.

1.2 Scope of vision document

The scope of this document only extends to the Clue-Less project being developed by the A-Team. This document may influence any of the other deliverables for the Clue-Less project.

1.3 Definitions, acronyms, abbreviations

- PM - Project Manager
- CM - Configuration Manager
- QA - Quality Assurance
- GUI - Graphical User Interface
- TCP/IP - Transmission Control Protocol / Internet Protocol

2. Positioning

2.1 Business opportunity

Clue is a classic board game that has been the source of entertainment for over half a century (Wikipedia). As families and friends grow up and move apart however, it is harder for them to enjoy this timeless classic. Additionally, if a Clue master is tired of winning against the same people over and over, they must find other players, which may be difficult depending on their location. Other board games such as Scrabble have overcome this by entering the digital age and allowing people to play even if they are not looking at the same physical board, as is the case with Words with Friends. The A-Team aims to bring the mechanics of Clue to the 21st century by developing a digital version of the game to be played online.

2.2 Problem Statement

The problem of needing to be co-located to play a game of Clue affects those who cannot be in close proximity. This has caused displeasure to those who wish to play Clue wherever and whenever and against whomever they wish. To remedy this problem, a computerized version of Clue that is online capable would need to be developed.

2.3 Product position statement

The A-Team has realized this need for a computerized version of Clue to be developed and has taken it upon themselves to create this product. Unlike currently computerized versions of Clue, Clue-Less levels the playing field for those who are luck-challenged by removing the need to roll dice to move about the board. Clue-Less provides a fun, fair, and online environment to enjoy the deductive intricacies that Clue offers.

3. Stakeholder and user descriptions

3.1 Market demographics

Online gaming is a trillion dollar industry that is projected to keep increasing in the foreseeable future. In North America alone in 2016, online gaming consumed 96 petabytes of data per month (Statista). Given this large audience, the A-Team is targeting both board and online computer gamers with Clue-Less in hopes of establishing a market presence in the board game to computer game industry.

Surveys show that 63% of U.S. households include at least one frequent gamer. The most frequently played gaming device is the PC, followed by dedicated consoles and smartphones. 54% of gamers play with other people, including friends and family members (Frank). Based on these facts, Clue-Less should target a large audience since it is a PC game intended to play with other participants.

3.2 Stakeholder summary

Stakeholders provide information about the system and have a say on the prioritization of requirements. Their feedback is necessary in success of the final product. Availability and location is taken into consideration for participation of the stakeholders. Some stakeholders may actively participate and thoroughly provide their views, while others may be less active and take time to respond.

Stakeholders for Clue-Less include the A-Team, JHU Professors, and Users.

A-Team Development and Architecture - This stakeholder represents the developers and architects of the Clue-Less system who will design and write the code. This stakeholder ensures the system will be functional, easy to maintain, and coded efficiently.

A-Team Test and QA - This stakeholder represents the testing and quality assurance of the Clue-Less system who will create test procedures and ensure quality within the system.

A-Team CM - This stakeholder ensures that the system's configuration is known at all times.

A-Team PM - This stakeholder monitors project progress and resources.

JHU Professors - This stakeholder represents the three professors of the Foundations of Software Engineering course. This stakeholder provides guidance towards development of Clue-Less but have no direct involvement in development.

Users - This stakeholder represents all of the users of Clue-Less. While this stakeholder has no involvement in the development of Clue-Less, their input in future endeavors will be shaped by Clue-Less.

3.3 User summary

Users for the Clue-Less product include individuals that play board games, individuals that play computer games, and individuals who will setup Clue-Less servers.

Clue Board Game Users - These users would use the Clue-Less system to play online. They may or may not be competent in computer gaming. They have experience with the board game Clue.

Non-Clue Board Game Users - These users might use the Clue-Less system to play online. They may or may not be competent in computer gaming. They have no experience with the board game Clue.

Computer Game Users - These users are competent in computer gaming. They may or may not be familiar with the mechanics of Clue.

Administrators of Clue-Less - These users are responsible for setting up the Clue-Less server on a computer and configuring the game.

3.4 User environment

The user environment differs between user types.

Clue Board Game Users - These users typically play in groups of 2 to 6. A typical game lasts 30 to 60 minutes and all users must be co-located within the same area to play.

Non-Clue Board Game Users - These users play in groups that vary largely in size, since different games have different size requirements. They all have the requirement to be co-located to play.

Computer Game Users - These users typically play alone, and their usage time can last from anywhere to a few minutes to hours. These users do not need to be co-located and typically are not. These users typically use a Windows or Mac based computer with internet connectivity.

Administrators of Clue-Less - These users typically manage multiple systems simultaneously. Their attention is usually divided between many applications at once.

3.5 Stakeholder Profiles

A-Team Development and Architecture

Description	Developers and Architects of Clue-Less
Type	Computer Science professionals
Responsibilities	This stakeholder is responsible for designing and coding Clue-Less
Success Criteria	Working code that will support playing Clue-Less
Involvement	Development and design of Clue-Less
Deliverables	Source code and Design Documentation

A-Team Test and QA

Description	Testers and Quality Assurance of Clue-Less
Type	Business Expert
Responsibilities	This stakeholder is responsible for ensuring Clue-Less passes quality checks and testing
Success Criteria	Clue-Less passes all required testing and the defined level of quality
Involvement	Provides feedback to management and other stakeholders on progress towards quality goals
Deliverables	Test documents

A-Team CM

Description	Configuration Management of Clue-Less
Type	Business Expert
Responsibilities	This stakeholder is responsible for keeping track of the configuration of Clue-Less throughout the project lifecycle
Success Criteria	All requirements planned for a version have been satisfied. All requirements are mapped to a version of the application.
Involvement	Oversight of document changes and requirement changes
Deliverables	N/A

A-Team PM

Description	Project Management of Clue-Less
Type	Business Expert
Responsibilities	This stakeholder is responsible for the on-time completion of the Clue-Less project
Success Criteria	Clue-Less delivered on time
Involvement	Directs weekly standups, resolves conflicts, manages schedule
Deliverables	Project Schedule and Status

JHU Professors

Description	Professors who oversee the Clue-Less project
Type	Guru
Responsibilities	Providing guidelines and deadlines to the project
Success Criteria	A successful Clue-Less project that demonstrates working knowledge of software engineering ideas and principles
Involvement	Grading the project
Deliverables	Grade

Users

Description	This stakeholder represents all of the players of Clue-Less
Type	Casual
Responsibilities	Find the killer
Success Criteria	A fun, playable, online version of Clue
Involvement	End user
Deliverables	N/A

3.6 User profiles

User	Type	Success Criteria	Involvement
Clue Board Game Users	Super User	A computerized version of Clue that retains the same mechanics (minus movement) of the board game Clue	Play in Clue game
Non-Clue Board Game Users	Average	A computerized version of Clue that is intuitive enough to teach the mechanics of Clue	Play in Clue game
Computer Game Users	Novice	A computerized version of Clue that is technically adequate to compete with other computer games	Play in Clue game
Administrators	Super User	A Clue-Less server that is easy to setup, maintain, and troubleshoot	Setup/configure server, start server and solve troubleshoot problems

3.7 Stakeholder and user needs

Priorities are 1 (highest) - 5 (lowest)

Need	Priority	Concerns	Current Solution	Proposed Solution
Play Clue online	1	A loss of online connectivity would render Clue-Less inoperable	See proposed	Clue-Less will support online play
Remove the luck from Clue	3	Removal of luck from the game may assist novice players	See proposed	Clue-Less removes luck from the game by removing the need to roll dice
Play Clue against strangers	3	Strangers may be dangerous	See proposed	Clue-Less will support online play
Play Clue-Less with a GUI	2	Not all features function as they should	See proposed	Clue-Less will support a GUI
Pass Quality Assurance	1	Defects will be included in the final product	See proposed	Clue-Less will be updated when bugs are discovered

3.8 Alternatives and competition

Alternatives to the Clue-Less system are available on the Android and iOS mobile environments, but there are no publicly available versions of a computer based Clue adaptation. These alternatives are not Windows or Mac compatible so are not direct competition to Clue-Less.

The competition for the Clue-Less system, as laid out by the A-Team, are Clue-Less systems by the other groups in the Foundations of Software Engineering class.

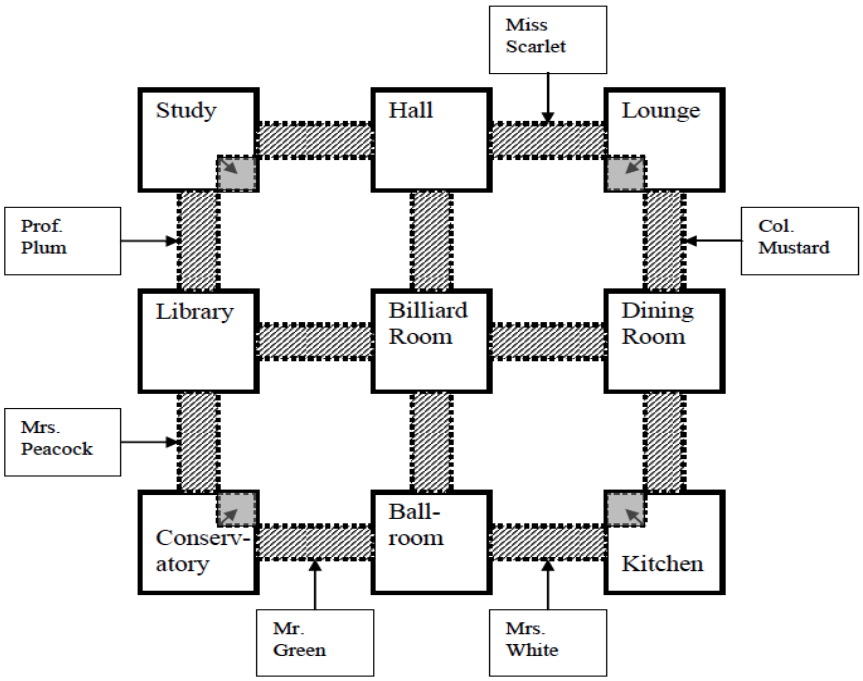
4. Product Overview

4.1 Product perspective

Clue-Less is a networked computer application that will run on any Windows or Mac based computer. It is a self-contained application that needs no other inputs or outputs from/to any other application or system outside of Clue-Less. It utilizes a client-server architecture to allow geographically divergent players to come together

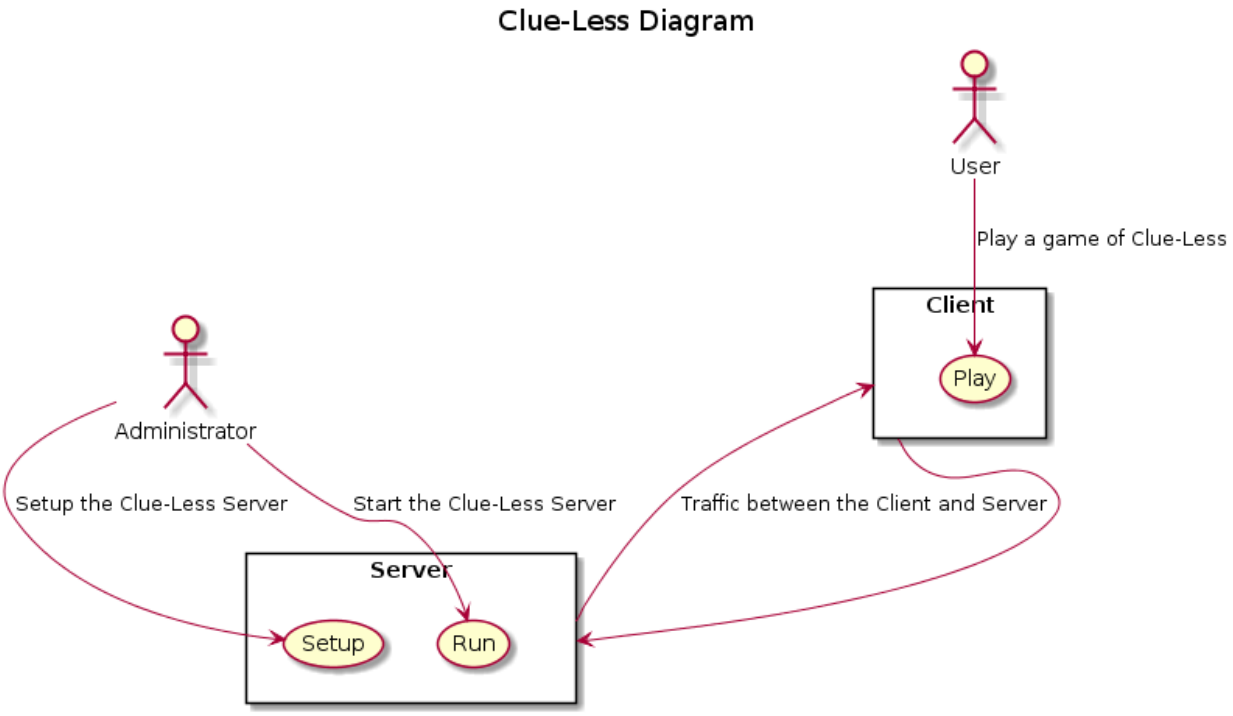
to play a simplified version of the popular board game Clue, previously restricted to co-located players. It features all of the classic locations, suspects, and weapons of Clue but without the reliance on luck to perform movement between locations. It also only has a single location block between rooms to act as the hallway.

Figure1: Schematic diagram of the board in Clue-Less



(Source: JHU Foundations of Software Engineering Clue-Less Project Overview)

Figure 2 - Overview of Server-Client architecture



(Source: www.planttext.com)

4.2 Summary of capabilities

- Provide online capability to Clue-less - Network capable application to support LAN or Internet play
- Provide character selection capabilities - All six original suspects are available for play
- Provide the ability to win a game of Clue-Less - Once a correct accusal has been made, the game will end.
- Provide the ability to pose a suggestion about a suspect, location, and weapon - Similar to the board game scenario, each player in turn to the suggesters left will be allowed to disprove the suggestion until the first disapproval or nobody is able to disprove the suggestion.
- Provide the ability to accuse a suspect, location, and weapon combination of being the crime scene - Allow a player to accuse and if incorrect, must sit out the rest of the game. If a player is sitting out, they can make no more moves, suggestions, or accusations, but must show cards in response to suggestions until the game ends.
- Provide a user-friendly GUI to make playing Clue-Less fun, enjoyable, and easy - The GUI will be intuitive and easy to understand.

4.3 Assumptions and dependencies

Clue-Less assumes the product will be run on a Windows or Mac based computer with a Java Runtime Environment (JRE) that has network connectivity to and from the server and client.

5. Product Features

5.1 Communications Features

- Chat to all other players
- Heartbeat between the server and clients to ensure constant, stable communications

5.2 Game Features

- Configure the client (pick a suspect, username, server address)
- Start a game
- Suggest
- Move to another location
- Accuse
- Take notes about other cards shown
- Remove inactive players from the game or end their turn

6. Constraints

As laid out in the Clue-Less project plan, the following constraints are placed on the A-Team and the Clue-Less system:

- Due to the short development time of the Clue-Less project, we are constraint in functionality beyond the basic gameplay.
- Due to the budget of the project team, we are constrained to using open source (free) software during the project.
- The Clue-Less project must comply with academic integrity and policies of John Hopkins University.
- Members of the A-Team have limited time to devote to the Clue-Less project due to responsibilities outside of academia.

7. Other product requirements

Computer requirements: Users are required to have access to a personal computer or laptop to play the game. Desktop computers are recommended because their available components usually provide better performance. Computer mouse, keyboard, monitor and cables (providing internet connection) are necessary input or output devices and accessories. We recommend to keep your system and drivers up to date.

Java compliance standards: The product will be written in the Java programming language using industry best-practice programming principles and techniques. The source code will follow best practices for the Java Programming Language for easy maintenance. Use of good code conventions can improve the readability of the software product, making it easier for engineers to understand new code quicker and with a better understanding.

Response Time: Response time is defined as the sum of queuing and processing time in the system; response times between one to five seconds are considered to be normal. Users are more prone to losing focus if response times are too long, so the product will minimize the response time to provide best the performance and user experience possible. The response time is both environment and application dependent. The user's computer system and connection environment, such as internet speeds, directly affect the overall response time. Since Clue-Less is an interactive game, each user's responses directly affect the response time for all users. Due to the interactivity, Clue-Less will have the ability to pass other player's turns or remove them from the game if a majority vote is met. This response time is not considered in our one to five second requirement.

TCP/IP standards: The product will follow TCP/IP standards by using existing Java networking code and nio networking code. Using TCP/IP protocols ensures timely and guaranteed network traffic communications.

8. Documentation requirements

In addition to the computer software that will be delivered, a user manual and an installation and configuration guide will be developed. These documents will be provided in a digital PDF format and written in the English language. The user manual will assist an end user of Clue-Less to play the game from start to finish. The installation and configuration guide will describe any necessary setup and configuration that occurs when installing the Clue-Less system, to include difficulty level, networking settings, and troubleshooting help.

9. Document History

The version of Vision Document may be updated during the project design process.

Version	**Date**	**Notes**
1	2/3/2018	Initial Release

10. References

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