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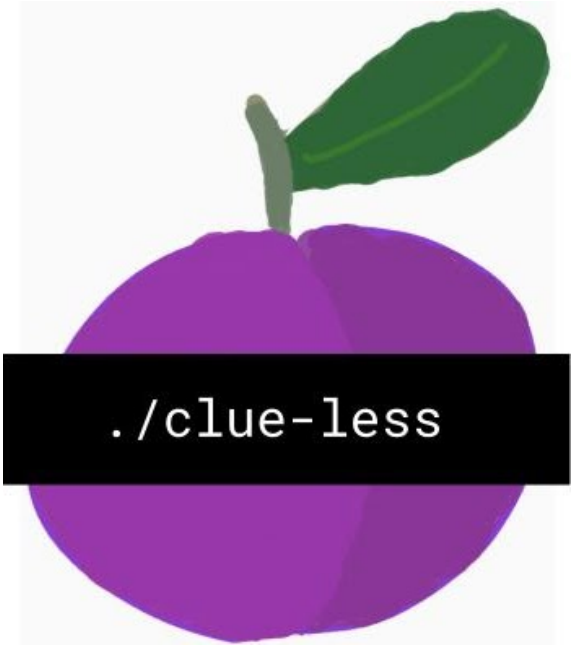

Vision Document

Professor Plum's Programmers

Foundations of Software Engineering
Section 81
Spring 2021

Introduction

Purpose

The purpose of this document is to document all stakeholders for the project and cover each group's relationship to the project as well as their viewpoint. The project is Clue-less, which is a simplified version of the popular game.

Scope

This document covers the full extent of the project lifetime, from development to deployment and maintenance. Each stakeholder's viewpoint will be considered and documented to ensure that the full scope of project requirements can be defined and addressed.

Definitions, Acronyms, & Abbreviations

Stakeholder - Person, or group of person, who is affected either directly or indirectly by the development of the project. [1]

End User Stakeholder - The stakeholders in the project, who are invested in the project based on their need to use the final product.

Non-User Stakeholder - Any person or group who are related to the project or affected by the design for any reasons not including the using the final product.

Black Box Testing - Live testing of software products by testers who do not have an understanding of how the software works, other than a brief outline of the software goals.[2]

Positioning

Business Opportunity

During 2020 and 2021, a pandemic has resulted in minimal contact and limited sized groups. A source of comfort for many people is being able to play classic board games with family and friends.

Problem Statement

The problem of not being able to interact with friends and family affects a large number of young adults and vulnerable people. The impact of the problem is increased amounts of isolation which has led to more depression, anxiety, and substance abuse. Over 56% of young adults

have reported depressive thoughts or anxiety due to the pandemic.[3] A successful solution would include methods to safely communicate and interact with others.

Product Position Statement

For the young adults, who need more interaction and spend time with others safely, Clueless is a classic online board game that will be nostalgic. Unlike classic Clue, where the participants must be in the same room around a table to play, our product is able to be played online from remote locations. This allows people to be safe while still playing their favorite classic board game.

Stakeholder & User Descriptions

Market Demographics

The Professor Plum's Programmers (PPP) group is a not well known organization, so its reputation isn't pronounced in this market. The reputation of PPP will develop alongside this product to make a name for PPP as converting classic board games into online playable games. This product should allow our end users to easily play the classic game of clue, while being located potentially very far away from each other. This should target more young adults, who will be willing to pay a small amount up to the cost of the original game of clue to play remotely. To buy the original game of clue it currently costs about 10 USD. There have been over 150 million copies of Clue sold, allowing for a large target market size for Clue-less.

Stakeholder Summary

Several stakeholder groups have been identified in the Clue-less project. The first group, End Users include the players of the game itself, while the remaining groups are considered Non-User stakeholders in the project. The groups that have been identified as stakeholders in the game development are summarized below, and each viewpoint will be covered in the following sections.

A. End Users

For this project, the End Users are those who will connect and play the Clue-less game with 1 - 5 additional Users. These users will have to have to access the required software, and to interact with the game in order to play.

B. Project Sponsors

Project sponsors include those requesting the development of the project. While this project does not have true project sponsors and funding, the class' Professors are considered sponsors

for the purposes of this document. The sponsors provide general project guidance and observe the progress of the project throughout development.

C. Developers

The developers include each of the three team members of Professor Plum's Programmers. These stakeholders are responsible for creation of the Clue-less project, as well as providing deliverables throughout the process to the Project Sponsors.

D. Testers

Testers in the Clue-less project include anyone involved in any software testing throughout the project. This stakeholder group includes all developers who will generate and run tests for their code, as well as outside parties involved in any black box integration testing.

E. Maintainers

Maintainers for Clue-less are responsible for making sure the game is live and playable for the End Users. This stakeholder group includes anyone adding to the code after the final delivery for bug fixes or new features, and people setting up the server side connections to host games for End Users, whether this is a central server location or local server hosting for games with friends.

User Summary

The main user of this system will be the Players, or the two to six people joining in a single game of Clue-less, competing to be the first to solve the whodunnit. Each player is responsible for logging into the game using some identifying information, selecting a player, and then taking turns in the assigned order, each turn making a valid choice within the rules of the game.

Name	Description	Responsibilities	Stakeholder
Player	Competitor in a given game of clue, attempting to solve mystery	● Logging in and joining game ● Taking player turns by selecting turn options ● Responding to other player guesses	Self

User Environment

The Users will be interacting with the software through the use of a personal computer. Each player will access the game through an individual sign in to keep information known only to one player secret. Players will access the game through internet connected devices, allowing for communication between devices and the central game host. The central game host will contain information related to at least one concurrent game, with 2 to 6 players connecting to communicate turn information. Players will interact with the game intermittently to make decisions during their turn, and when otherwise required to provide suggestion information.

Non-User Stakeholder Profiles

Project Sponsors

Description	Foundations of Software Engineering Professors
Type	Software Engineering experts, project requesters
Responsibilities	● Providing reviews of Project development documents and incremental product deliveries ● Setting Project document expectations ● Responses to questions on overall Project and document deliverables
Success Criteria	● On-time delivery of project milestones ● Fully-featured final product ● Well documented design process
Involvement	● Reviews and respondsto each project deliverable ● Responds to project questions posted to
Deliverables	Feedback on the following deliverables: ● Project Plan ● Vision Document ● Requirements ● Design Document ● Three (3) Incremental Delivery Presentations

Developers

Description	PPP Team Members
Type	Technical leads for project development, knowledgeable in software design, and software engineering principles
Responsibilities	● Developing Clue-less game to project specifications ● Documenting the software engineering process leading to final product
Success Criteria	● On-time delivery of complete project documentation deliverables ● Incremental delivery of working software showing continued feature implementation ● Fully-featured final product demoed on the Project completion deadline
Involvement	● Defining project goals, requirements, and design choices through project documentation deliverables ● Implementing features in project source code ● Reviewing code for missing features and bugs
Deliverables	● Four (4) Design Document Submissions ○ Project Plan ○ Vision Document ○ Requirements ○ Design Document ● Three (3) Incremental Software Deliveries ○ Skeletal Increment ○ Minimal Increment ○ Final Increment

Testers

Description	PPP team members and other potential early to mid-stage users
Type	Users of all backgrounds and Software Engineers

Responsibilities	Use product and identify software bugs or issues of any kind hindering optimal experience
Success Criteria	Universal approval from a wide range of users
Involvement	Testing the product during development, primarily towards the end stages
Deliverables	● Feedback ● Bug Reports

Maintainers

Description	Developers with deep knowledge of code base; Server maintainers
Type	PPP team members; Server maintainers
Responsibilities	Build source code into package for distribution and/or organize in source repository
Success Criteria	Code base is easy to access and understand at all times during development
Involvement	Maintenance of the product, which should be minimal but periodic
Deliverables	None

User Profiles

Players

Description	Participants in any game of Clue-less
Type	No software/SE experience; understands the basic rules to Clue
Responsibilities	● Log in and join a game of Clue-less ● Take action when it is the player's turn ● Respond to other players' suggestions by

	providing information on current cards
Success Criteria	● Can setup and join game ● Can make requested moves on their turn ● Can compete with other players in a full Clue-less game
Involvement	Uses the final product to play Clue-less
Deliverables	None

Non-User Goals/Needs

Stakeholder	**Need**	**Priority**	**Concerns**
Sponsors	Project Plan Delivery	High	Complete
Sponsors	Vision Document Delivery	High	Missing Stakeholder viewpoints
Sponsors	Requirements Delivery	High	Missing Requirements, Use Case Scenarios not fully fleshed-out
Sponsors	Design Document Delivery	High	Selecting design processes/patterns that work well for the project
Sponsors	Skeletal Delivery	Featureful - Low Punctuality - High	Showing a working Proof-of-Concept
Sponsors	Minimal Delivery	Featureful - Medium Punctuality- High	Adequate implementation of new features added
Sponsors	Final Delivery	High	Missing Product Features, bugs in final code
Developers	Access to Source Code for development	High	Maintaining bug-free source code; implementing project features quickly

Developers	Bug/Feature implementation tracking	Medium	Making sure bugs are documented and addressed
Developers	Successful Project Deliveries	High	Same as Sponsor Delivery goals
Developers	Code Reviews and Configuration Management	Medium	Maintaining clean and bug-free code
Testers	Ability to view test results and descriptions for CI/CD tests	Medium	Unclear reasons for failing tests when committing code
Testers	Clear Goals for Blackbox testing	High	Unclear goals result in unhelpful results from testing
Testers	Complete set of tests for source code	High	Missing bugs in code not covered by unit tests
Maintainers	Clear Guidance on how to set-up game hosting	High	Players unable to join game if servers not running
Maintainers	Clear Guidance on hosting troubleshooting	High	Server-side issues resulting in failed games; servers inaccessible to players
Maintainers	Method for upkeeping code to fix bugs/add features	Medium	Allowing for continued additions to project after Final Delivery

User Goals/Needs

Stakeholder	Need	Priority	Concerns
User	Ability to login and access game of Clue-less	High	Ease of access, and how to rejoin game if connection is lost
User	View current game information, including player-held clues, and character positions	High	Information known only to certain players must remain inaccessible to other players
User	Make suggestions and accusations	High	Making sure expectations of other players are clear for responding to suggestions
User	View information on which player turn is happening	Medium	Making sure the game flows from player to player successfully so that games can complete
User	Move character on turn	High	Verifying that only valid moves can be chosen by the Player
User	Win/Lose game based on player choices	High	Players need to be able to view game results

Product Overview

Product Perspective

Clueless is similar to board games, however it bridges into the online game space while keeping true to the classic board game style. Clue-less is an independent game and will be self-contained as its own product, but will require an internet connection.

Summary of capabilities

Customer Benefit	**Supporting Feature**
Communication between players	Game Messaging
Challenging deductive reasoning	Core game design
Honest Gameplay	Validations of player moves

Assumptions and dependencies

Clue-less assumes the users will have an active and stable internet connection.To allow for a LAN game, the game might require a local server to be run directly on the LAN instead of a global server. Clue-less will only run on operating systems that can be built from python through tools like distutils, which may not include obscure operating systems.

Cost and pricing

Clue-less will need a domain for the server to reside and a server hosting service. For a low scale this server hosting service will be very small, but will cost more as the active user base increases.

Licensing and Installation

We are not expecting to utilize licensing for Clue-less. The client game will need to be able to run on windows, which may include installation if needed.

Product Features

Create New Game

The ability to create a new game.

Join Existing Game

The ability to join a game that has been created, but has not started yet.

Start Game

The ability to start a game that has not been started.

Accusation

Accusations are a final suggestion that will result in either the end of the game or the player’s elimination.

Suggestion

Suggestions are a guess at the solution using the player’s current room, where players in turn order can reveal a card to the suggester to disprove the suggestion. The suggestion ends when a player reveals a card or all players are unable to disprove the suggestion.

Movement

Players can move 1 space through secret passages or into and out of hallways.

Reveal card

Revealing a card to another player for purposes of disproving a suggestion.

Game Log

A running list of actions performed in the game along with updates of the game state, like who’s turn, what the suggestion is, and who revealed a card.

Messaging

Players should be able to communicate in a general area with each other.

Graphical User Interface

An interface that allows the user to play the game by clicking on buttons and with graphics.

Constraints

Schedule

The main constraint on development of this project is the development time. Because this project is being developed under a University semester timeline, total project development time from first design considerations to final product are bounded by the semester length. Additionally, this applies a hard deadline to the final product that cannot be shifted, while other deliverables have direct grade implementation for sliding timelines. This means that project schedule is of the utmost importance to the successful execution of the project.

Cost

A second project consideration is project cost. There are no funding sources currently available for project development, and as such, the project is constrained to using development tools that are free to use or open source to minimize the cost to developers, limiting the total number of design options that are available to developers.

Developer Headcount

As this is part of a University project, developers on the project are limited to selected students in the applicable course. This constrains the total number of work hours that are available for development, as the team size Professor Plum’s Programmers is capped at a headcount of three.

Sources

[1] “How to Define Stakeholders for Your Software Development Project Software Engineering.” Software Engineering, Concepta, 21 Aug. 2018, www.conceptatech.com/blog/how-to-define-stakeholders-for-your-software-development-project

[2] “Black Box Testing.” *Test IO*, test.io/black-box-testing/.

[3] Panchal, Nirmita, et al. “The Implications of COVID-19 for Mental Health and Substance Use .” KFF, Kaiser Family Foundation, 10 Feb. 2021, www.kff.org/coronavirus-covid-19/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/.