CEN4010 Principles of Software engineering, Spring 2018

Milestone 1 Project Proposal and High-level Description

Team Witch Hunters

Team #4

Ivan Maykov – Project Owner  
Kyle Prince – SCRUM Master  
John Floyd – Team Member  
Shaquana Jones – Team Member

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| Revision | Description |
| 1.0 – 19/02/2018 | Initial Document Release |
| 1.1 19/2/2018 | Questions 1-4 |

**Witch Hunt**

Executive Summary:

Witch Hunt. It’s a web-based game played with friends. Since the phone-capable market is booming currently, there is no better time to make this game. Quite often you hear stories of people on their phones next to each other, now you get to do it while voting each other off. It doesn’t require any fancy graphics, just a web connection and a phone.

The game works like this. You have a number of players on their phones join a game. One of the people will be selected to be a witch, everyone else is a villager.

The game is played in rounds. Each round the players discuss who is the witch. After a certain period of time, the other players vote on who is the witch. That person is removed from the game (loses, is killed). If they are correct, the surviving villagers win. If they are wrong, the witch kills a villager. The witch wins if they are the last man standing or it’s just them and one villager. Players have a public chat that everyone can see, and they can create private chats that only the people involved can see. This allows the game to be played in long and short distance.

2) Competitive Analysis

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| Features | Summary | Competitors |
| Game | This is the above game. It will play out described above, in a number of rounds. Every round will be a few minutes long, and the game will end. | A simple concept where the players do most of the work. Our product is dependent on the concept of simplicity |
| Game Matchmaking | A person can setup a game to have random players, or they can set it up to play with friends. | Our product will work about as well as any competitor matchmaking. |
| Private Chat | This chat allows people to talk in secret. This can hide information from a potential witch. | This will be a simple chat to allow players to communicate privately. It does not need to be complex. |
| Public Chat | This is the main way for players to communicate and try to find the witch. It’s main function is to remove having to switch between apps to focus on the game. | This will be a simple chat to allow players to communicate privately. It does not need to be complex. |
| Ads | This is the game’s main method of generating profit. It will do so | As the game plays out in rounds, and finding out who dies, putting ads here would gene |

3) Data Definition

Game: One match of Witch Hunt game, from the start till the end, when the witch or the remaining villagers win.

Player: Users playing the game.

Witch: User who other players try to vote out. This user is chosen at random.

Villager: Players who aren’t the witch. These players vote on who is the witch.

Remaining Villagers: villagers who have not been killed.

Round: One chunk of chatting, then voting on who is the witch.

Voting: Villagers choose someone to kill. Witch chooses someone to kill.

Killed/Lost: The state a player is in if they are voted out or killed by the witch.

Matchmaking: The pre-game setup to group players for a game.

Private Chat: A chat seen only by players allowed in.

Public Chat: A chat seen by all players.

Account: User account from which they play the game.

4) Overview, Scenarios and Use cases:

        Jeremie and his friends, (Aelita, Ulrich, Yumi, Odd, William, and Elizabeth) decide to play Witch Hunt. He goes on the site, and creates a custom game. He tells his friends the entrance password and they all join and begin the game.

        Aelita is chosen by the game to be the witch. The players start chatting in the public chat. Ulrich and Yumi create a private chat, and figure if Elizabeth is the witch, she’ll kill Yumi first. If it’s William, he’ll kill Ulrich. Jeremie would kill Odd. They figure Aelita would kill Yumi. She doesn’t tell him that he’d kill William just in case he’s the witch. They also figure it would be best to vote out odd first, as he’s the least predictable one since he’d just mess with them for fun. At the end of Round 1, Odd is killed by a vote, and Elizabeth is killed by the witch.

        At the start of round 2, everyone is suspicious of Yumi since they figure that’s who she’d kill first. Jeremie, Aelita, Ulrich, and William form a private chat. Jeremie and Aelita try to convince William and Ulrich to vote off Yumi, since they need 3 votes. Yumi privately messages Ulrich telling him if she dies and the witch is not found its Aelita. She figures Aelita is smart enough to hide and use the group to kill her off. Just in case, she also sends the message to William. The group votes in round 2, and Yumi is killed off by both the group and the witch.

        At the start of round 3, Ulrich is suspicious of Aelita since she or Jeremie would have the most reason to kill Yumi. She’s the smartest after those 2. William messages Ulrich and says they should kill Aelita, since it did match what Yumi said. They both vote Aelita despite Jeremie and Aelita’s protests of her innocence. Aelita is voted off and Jeremie, William, and Ulrich win the game.

Tie-breakers will be broken by someone chosen at random. If the person doesn’t choose, that person is killed.

5) High-level function requirements

Our goal is to develop a scalable, mobile-first user interface using Bootstrap for our project. Users will be able to create a login and play locally or over the web. Users should be able to form teams with registered friends or with strangers. A team will consist of no more than 8 players with no fewer than 5 players in a game. Graphics can be provided using JavaScript, with player data being hosted in PHP on the LAMP server. As the game progresses players will be eliminated which will change the number of eliminated players in the table. The user interface will provide players the option to vote on other players, whom they believe is the witch. Once either all the players are eliminated, or the witch is found and killed, the game will display a closing screen that tells the players what happened. The game then returns to the opening screen, where the player is able to start another game.

6) Non-functional requirements

1. Performance - Response time - maximum load time, 1 sec.
2. Usability / Portability – Game must be properly formatted and functional on all iOS and Android mobile devices
3. Accessibility – Users must have an account and login to access the game
4. Expected Load – During game play, max 8 user concurrently. As popularity of game increase and multiple games are played concurrently, expected load will increase. Initially a max of 100 concurrent games with a max of 8 players, requires 800 concurrent users with a max pull of 250KB per user.
5. Security Requirements – Any personal data needs to be encrypted when stored on database
6. Storage – Web server storage requirements 100MB max, Database max size initially 1GB. Individual pages displayed should not exceed 1MB for faster load times.
7. Fault Tolerance – Web site can be hosted on FAU Lamp server initially. Further growth will require hosting with a service provider with a min 99.98% uptime with daily site and database backups. Redundant server is unnecessary until 10,000 users are reached.
8. User Signup – Simple and quick signup with limited user personal information, Name, email only.
9. Ease of Use – User should be able to navigate game and play without instructions. If user does need view instructions, they should be brief and no more than 7 paragraphs.