Usability Report: Final Draft

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"P.E.T.S. Spa" Usability Report: Draft #Two

P.E.T.S. Spa is an open-ended, addictive, strategy, Tycoon-Style game, with "rewards" as cash and profit accumulation, and "challenges" from losing money or customers (Bealman, 2019). Pet-related tycoon games are not mainstream, with 60% of households possessing pets, and billions of dollars spent annually on per-related items. To be effective, usability principles must be applied effectively, with design decisions being user-centered (Bass, 2011).

Literature Review

User-centered design, according to Harris (2002), is defining who the users are, defining their tasks and goals, their experience levels, what functions they want and need from a system, what information they want and need and understanding how the users think the system should work. The primary purpose of needs analysis is the user's satisfaction. The audience is the people who will be playing the game. A designer must consider their age, geographical location, ethnicity, gender, and education when performing a needs analysis to determine user goals, critical tasks, and user feedback needs.

Goals

- **Learnability**; the ease and speed players learn to play the game. The players' goal is to become proficient quickly with little trial and error.
- **Stability**; users goal is for a stable user interface, not excessively dynamic or shifting.
- **Performance**; users goal is for interfaces and objects which perform well, with little to no lag.
- **Stimulation**; users goal is for sound, color, and sensations.

Critical tasks

GOAL	CRITICAL TASK
Learnability	• Start Here Instructions • Tips • Do-Overs
Stability	• Interface is predicable
Performance	• Interfaces reactive • Objects react as expected • Scores visible
Stimulation	• Realistic sound effects • Color schemes per best practices for design and accessibility • Sensation of taking care of the pets

Feedback

- real-time feedback,
- mount of money in the bank,
- location,
- time remaining,
- items in inventory, and
- a screen will flash to indicate the players are in danger of not completing the task with the next wrong move.

Usability Principles

Learnability

When designing a mobile game, it needs to be a combination of challenging, yet learnable. When a player initially tries a game, time is limited for how long the player will give to the game, before deciding to dedicate time and energy to continue playing, or disengage and move on to another game. For my P.E.T.S. Spa Capstone project, the primary learnability principles are:

- Design game to be learned, options visible.
- Hide more complex elements from beginners.
- Tips appear through the game.
- Have a help system.
    - Can't be learned = won't be played.

Flexibility

The power law of learning says that the time it takes to perform a task decreases with the number of repetitions of that task (Joyce, 2019, p. 1). In video games, users don't want things to be too easy, or it isn't fun. When gaming, we like a bit of competition; we don't want an easy win. Therefore, games must be flexible and build in features to cater to both novice and experienced users. However, users who have been playing a game for a while want to find secret shortcuts or accelerators that new users likely don't know about. For my P.E.T.S. Spa Capstone project, the primary flexibility principles are:

- New users won't be overwhelmed.
- Experienced users won't be bored.
- Keyboard shortcuts provided.
- Choices of how to build business.
    - Inflexibility = rigid and not enjoyable.

Feedback

Feedback is a vital tool when designing anything. For players to see the reaction to their actions allows them to better understand how what they did directly translated to what's happening (Bycer, 2019). For my P.E.T.S. Spa Capstone project, the primary feedback principles are:

- Location: Where am I?

- Current Status: What's happening, and is it still happening?
- Future Status: What will happen next?
- Outcomes & Results: What just happened?
    - Effective feedback = increased engagement.

Sensory Mode

Sensory information is processed using the five main senses: taste, sight, smell, hearing, and touch. The sensory mode which best measures each of the usability principles are;

- **Learnability**: for the ideal learnability in the capstone project, the sight sense is vital, as players will view the instructions and tips.
- **Flexibility**: for the maximum flexibility impact, the sense of sight is critical to view the features, shortcuts, and accelerators.
- **Feedback**: for players to effectively experience the in-game feedback, the sense of sight is necessary to view the on-screen messages.

Learnability and Sense of Sight

Learnability is the most important usability principle in my Capstone Project. Once learned by the player, use of the UI should be based on recognition rather than recall. Typically, a player should not be expected to memorize every game control, rather there should be easily accessible visual reminders where appropriate (Glinert, 2009). An effective learnability design makes use of visuals, rather than text, to convey information (Batchu , 2019). The result is incredibly intuitive: green for OK, red for No Parking. It can be accessible for the color blind, with stripes for No Parking. Previous research also reports that gaming improves other visual skills, such as the ability to track several objects at the same time and paying attention to a series of fast-moving events, according to Bavelier (Handwerk, 2009).

Research Questions

The questions my research intends to answer are:

1. Is use of the UI based on recognition versus recall?
2. Does the player access visual reminders for game controls?
3. Are the UI controls easily recognized by consistent use of color?

Emerging Market Technologies

Haptic technology uses technology which stimulates the senses of touch and motion, especially to reproduce in remote operation or computer simulation the sensations that would be felt by a user interacting directly with physical objects (Merriam-Webster, 2020). This would be ideal to simulate the interaction with pets in my Capstone Project game. Virtual Reality, using computer technology to create a simulated, three-dimensional world that a user can manipulate and explore while feeling as if he were in that world, is also an ideal concept for simulating pets in my game (Strickland, 2007).

iOS and Android Platforms

For iOS and Android platforms, the haptic editor is meant to make it easier to design haptic output signals for games and other software (Nordvall, 2015). The editor is plugin-based, so if there's no out-of-the-box support for a device, you can write a new plugin driver and jump into the tools. Samsung Gear VR will work for developers who are not looking to create high-end VR experiences and are only making their first steps in virtual reality game development. The library of apps and games for Samsung Gear VR is solid, though they don’t work on all phones (Onix, 2017). Google's Daydream VR platform expands Cardboard to meet specifications required of Android smartphones and headsets in order to play more complex VR-compatible apps (Montegriffo , 2018).

Methods

Developers in usability and user-centered design (UCD) employ a wide range of methods for gathering information about users and their tasks, analyzing needs, creating design solutions, iterating designs through testing and evaluation, and measuring efficiency, effectiveness, and satisfaction. This section of my Usability Report presents descriptions of methods, including population, study design, recruiting, consent, risks/benefits, compensation, and logistics.

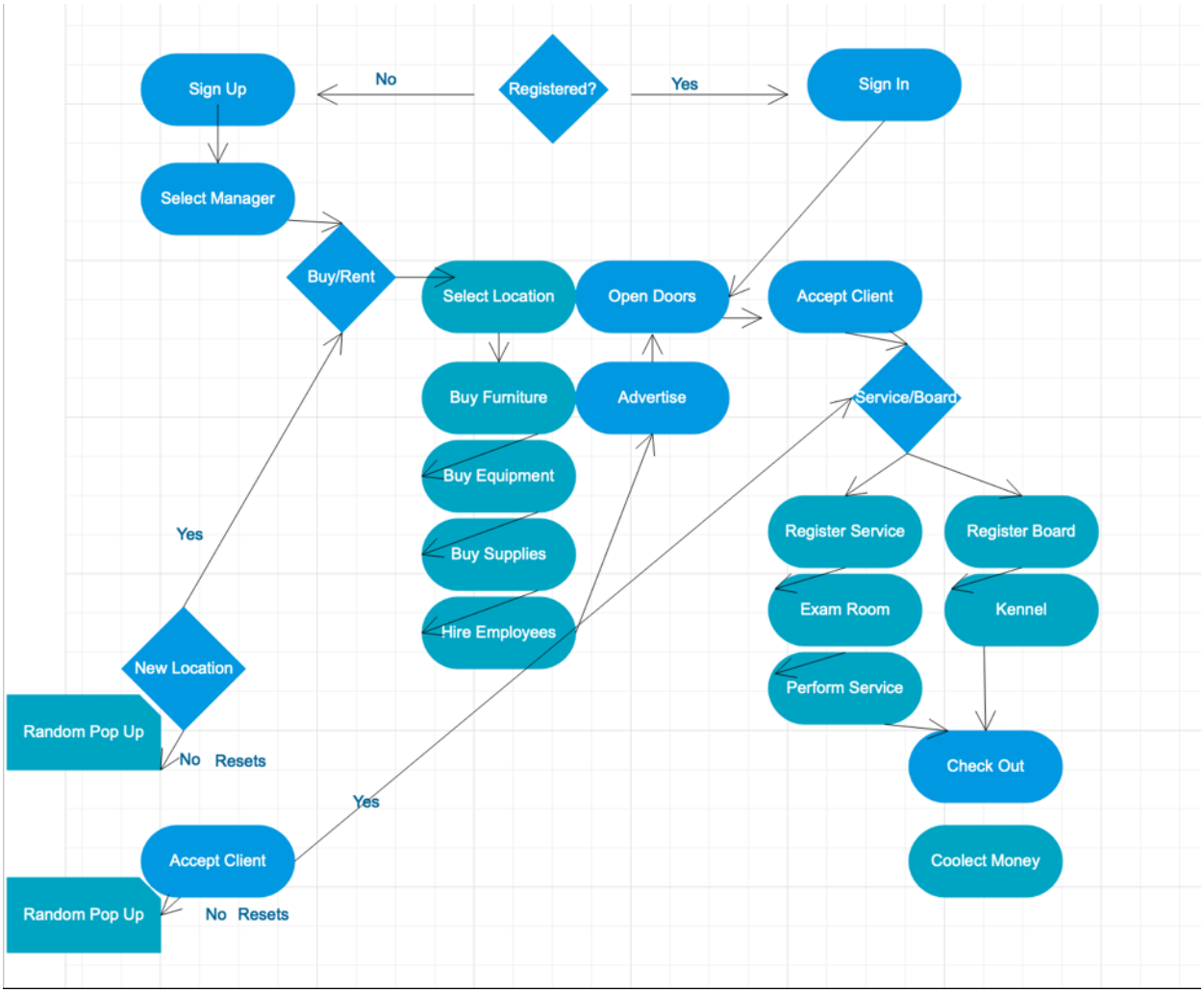
Population

The initial user studies for P.E.T.S.Spa, will be mostly informal. As a result, the population will not necessarily represent a scientific and statistical sampling of potential gamers interested in Tycoon-Type games involving pets. The demographics of my anticipated participants include ages from 18 - 60, 60% male and 40% female. The participants will be from a population of people ready available to me, and whom would be willing to assist me by participating. This group includes fellow peers who work with me at Full Sail University, previous students, and friends and family interested in my endeavor. I expect the number of participants to be n = 25. The participants will not be from a vulnerable population.

Study Design

The study duration will be approximately 14 days. This allows time to meet with the participants to explain the study, obtain signed agreements, assign user names to online questionnaires and diaries, and provide time for questions and answers. I am seeking to obtain phenomenological, informal, qualitative data, rich in participant descriptions in their own words. The specific information I seek includes, level of enjoyment, level of challenge, balance of challenge and rewards, suggested additions, suggested items for removal, and quality of user interfaces. To reduce bias, I will not divulge any of my personal thoughts about the categories of

information being evaluated. The data will be stored securely online in the cloud. User interactions will be evaluated (see below).



Recruiting

I plan to continue the previous panel study group of participants used earlier. The invitation will be designed to be familiar, and resemble the previous invitation (see below).

Consent

As the study will be informal, without vulnerable participants, the consent will be a simple agreement, that the participant agrees to participate in the study, with study details provided, including length of time, and information being collected. The participants will sign the digital document, which will be kept with the study materials.

Risk/Benefits

There are no potential risks to the participants. The benefits to participants include the enjoyment of playing the game, and satisfaction of being involved in the project. There are no obvious risks with the informal data collection, and privacy is not a concern with the panel participants.

Compensation

The cost to participants is in their valuable time, whether personal or during work hours. As a result, participants will receive a Starbucks gift card for $10.

Logistics

The information collected will be digital and online. Participants will gain access to online forums and diary notebooks to record their responses. In advance, the online forums, notebooks, digital consent form, and instructions will be prepared.

Research Questions

1. Describe in your own words the game's story.
2. Who are the characters?
3. What are the actions the game permits?
4. What does the game let you do?
5. What is the game's primary goal?
6. What would you suggest adding to the game?
7. What would you suggest removing from to game?
8. On a scale of 1 - 10, rate the enjoyment of the game.
9. On a scale of 1 - 10, rate the challenge of the game.
10. On a scale of 1 - 10, rate the rewards of the game.

Script

P.E.T.S. Spa is an open-ended, strategy, Tycoon-Style game, with "rewards" as cash and profit accumulation, and "challenges" from losing money or customers. As a participant in the study, please answer the questions as honestly, and with as much detail as possible. Your responses are valuable, will be evaluated, and useful to the final iterations of the game's development. Feel free to add any additional comments you find relevant.

Results

The survey was piloted on five participants, whom are part of the Full Sail Community. The phenomenological, informal, qualitative data, rich in participant descriptions in their own words, is exhibited below.

- Describe in your own words the game's story.
  - 

- Who are the characters?

- 

- What are the actions the game permits?

- 

- What does the game let you do?

- 

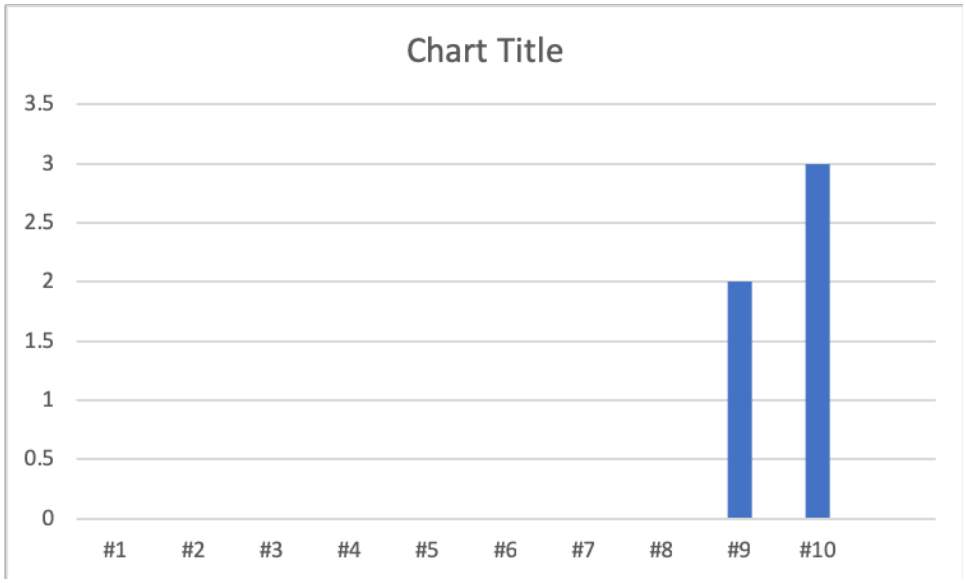
- What is the game's primary goal?

- 

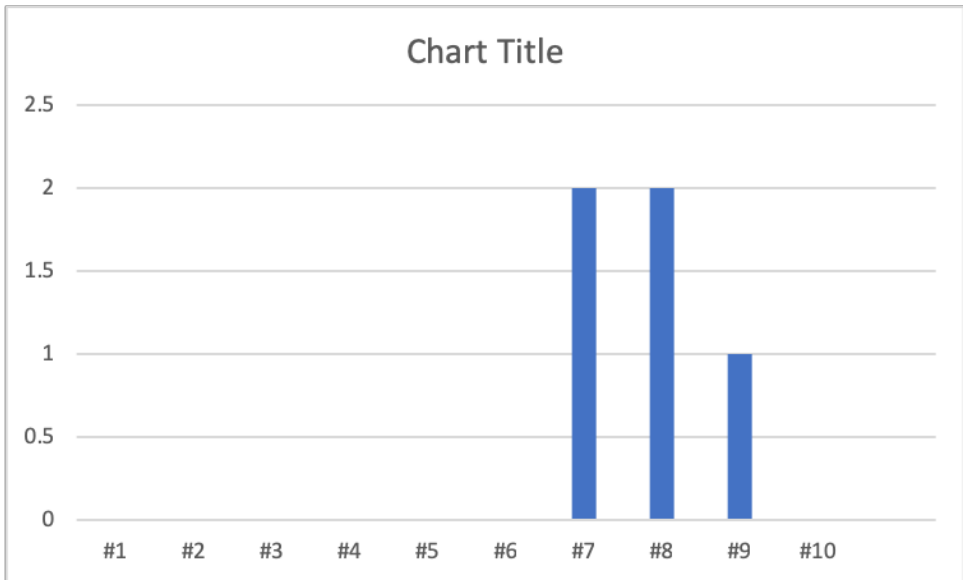
- What would you suggest adding to the game?

- 

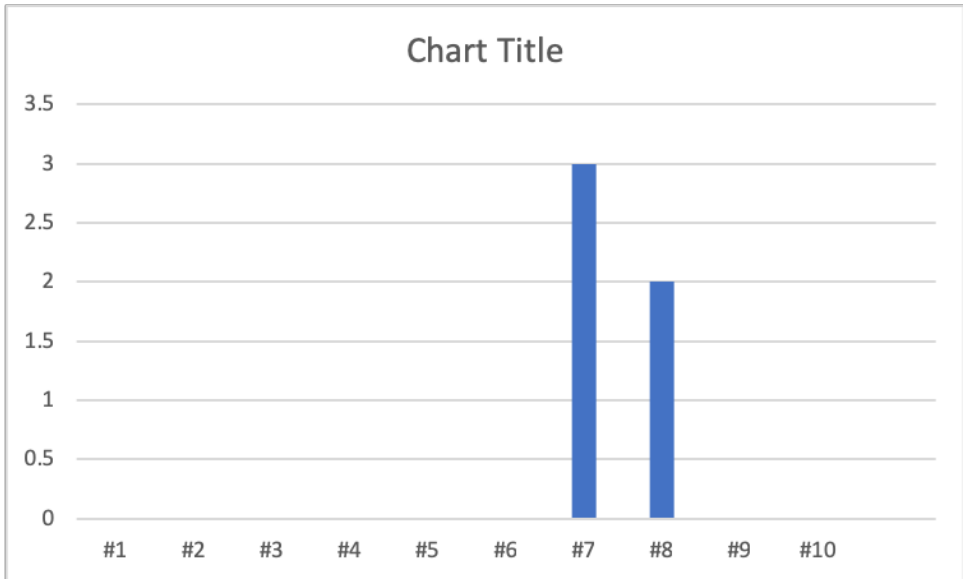
- $hat would you suggest removing from to game?
    - No responses.
- On a scale of 1 - 10, rate the enjoyment of the game.



- On a scale of 1 - 10, rate the challenge of the game.



- On a scale of 1 - 10, rate the rewards of the game.



Changes

Based on the qualitative informal results exhibited above, changes I am considering include:

- Add maps.
- Add music.
- Add additional breeds of dogs and cats.
- Increase rewards.

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