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UX/UI Analysis & Project Proposal

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Abstract

For this semester's GAM450 class I am proposing a non-traditional project that will allow me to explore the areas of user experience (UX) and user interface (UI) design. The project that I am proposing consists of two parts: UX/UI Analysis and UX/UI Project. My goal is to use this project proposal to help me stand apart as unique among the game designer BAGD cohort and establish my identity as a competent UX/UI designer.

UX/UI Analysis

The UX/UI Analysis portion of my project proposal is designed to help reinforce my knowledge of UX/UI design and to challenge me to recognize successful patterns and provide solutions to areas of inadequacy of design. In order to effectively analyze existing UX/UI systems in different game genres I will be employing the research of cognitive psychologist Celia Hodent, the Director of UX at Epic Games. I will be utilizing her UX/UI practices of usability heuristics to analyze the following areas:

- Signs & Feedback
- Clarity
- Form Follows Function
- Consistency
- Minimal Workload
- Error Prevention & Recovery
- Flexibility

By utilizing the usability heuristics method I'll be able to analyze games and discover UX/UI patterns that are both effective and ineffective. After analysis of the game is complete I will challenge myself to explain why certain patterns work or do not work and provide insight into how to improve the UX/UI either through visual mockup or written explanation.

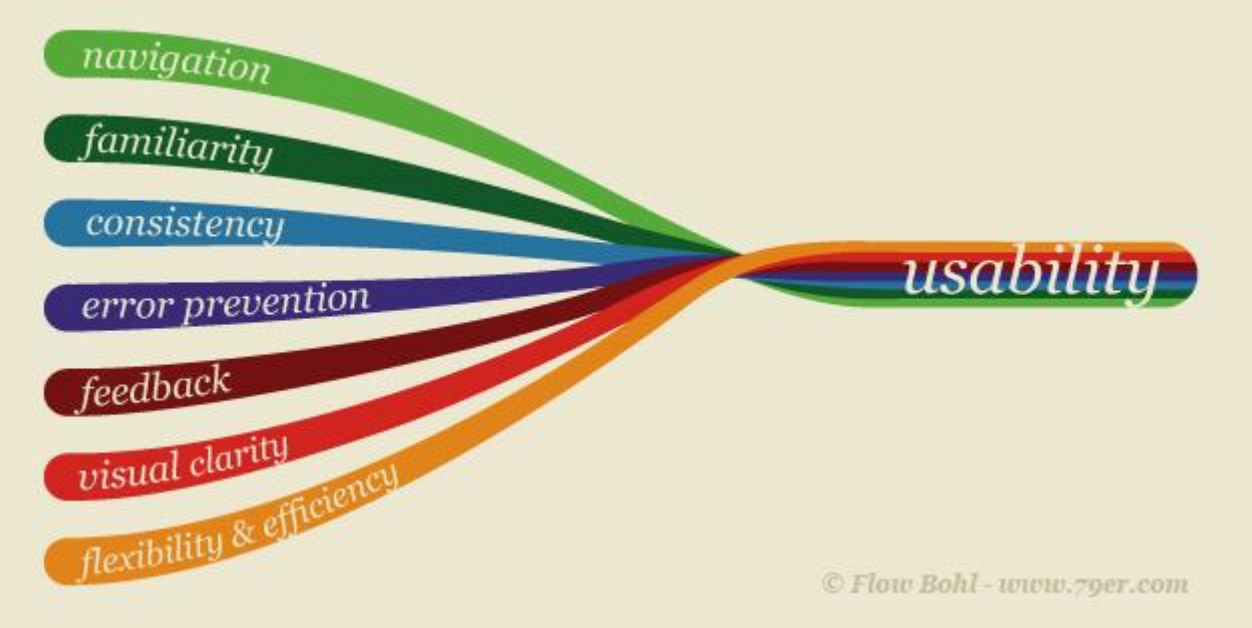
UX/UI Project

The UX/UI Project that I am proposing will make use of what I learn from the UX/UI Analysis portion of my project proposal and apply it towards building a UX/UI system from scratch in Unity 3D. I am choosing to write the UX/UI system in Unity 3D due to familiarity with it as an engine and its scripting language, C#, in order to start rapidly prototyping. While Unity 3D does come with a limited built-in UI system, I will be writing my own UX/UI system that makes minimal use of what is already available. Due to the nature of this project the emphasis on actual game mechanics will be minimal as the project will mostly be about the UX/UI system.

UX/UI Analysis Breakdown

Introduction

Celia Hodent created a slide deck for her GDC Europe 2014 presentation about UX practices that she uses at Epic. From this slide deck she explains what UX is and explains her usability heuristics that she uses as a guideline to evaluate UX.



Usability graphic taken from Flow Bohl's post on "Usability – Best Practice for UX Design"

Celia Hodent's model for usability heuristics evaluates UX through an interpretation of Flow Bohl's graphic above: Signs & Feedback, Clarity, Form Follows Function, Consistency, Minimal Workload, Error Prevention & Recovery, and Flexibility.

Signs & Feedback

Signs and feedback are grouped together because they both provide meaningful information about a game system. Signs come in two types: inviting and informative. Inviting signs encourage a player to do something or help guide the user by drawing their attention. An explanation mark above an NPC's head is a good example of an inviting sign as it draws attention from the user. Informative signs inform a user about a state while being subtle. A good example of an informative sign is a health indicator on a user's heads up display (HUD). While the distinction between inviting and informative signs tends to be the difference between attention drawing and subtlety, this is in not always a hard rule. Inviting signs can be made subtle in order to encourage player discovery, such as a crack in the wall indicating it can

be broken open, and informative signs can be attention drawing if needed, such as if a player's health is at a critical state.

Feedback is essential for helping a user understand interaction in a game. Every action that a user makes needs some sort of feedback, whether visual, audible, or preferably both. A simple example of feedback is color, size, animation and sound effects applied to a button when clicked. Without any of these feedback features it would be impossible for a user to tell if clicking the button accomplished anything at all, which can lead to user fatigue and frustration.

Clarity

Clarity can be understood as information being perceived as intended. Clarity applies to many features of UX/UI: text, color, size, contrast, organization, hierarchy, context, and iconography. If a game uses text that is not legible, such as text that does not read well at a small size or has bad contrast against the background, the user will not be able to understand how to read or interact properly with the game. Be as obvious as possible in order to establish clarity in a game. Good practices for establishing clarity can be achieved through making use of the Gestalt laws of perceptual organization.

Form Follows Function

Form follows function allows the user to easily understand how to interact with an object. Essentially, the goal is to establish affordance so that it is intuitive for the user to know how to interact with the game. The tried and true example of form follows function is the difference between doors with handles, indicating that the user must pull to open, and doors with flat plates, indicating that the door must be pushed since there is nothing there to pull. It follows that similar forms should have similar functionality while different forms have different functionalities. Try to be as obvious as possible.

Consistency

Consistency in UX/UI is important in order to quickly facilitate learning and patterns for a user. All aspects of UX/UI should strive for consistency in everything from controls, iconography, signs, and feedback. Without consistency incongruities will force the user to try harder to understand the game which can lead to confusion and frustration. It is important to note that consistency is not usually as effective for different functionalities. This goes back to form follows function in that for one form there should only be one function.

Minimal Workload

Minimal workload in UX/UI refers to how much effort both physically and cognitively a user

must put into a system in order to get their desired outcome. Bad UX/UI will require the user to have to make many clicks or crawl through many menus in order to get to the functionality that they are trying to find. A great way to minimize workload is to group alike objects together to decrease the workload needed to find either things that need each other to function or are related in some way.

Error Prevention / Recovery

Error prevention and recovery exists to decrease the frustration of a player in accidental mistakes. Calls of destructive action and even smaller enemy colliders all act as a way of giving the player a little bit of leeway in case an error is made. Error Recovery, such as an undo button in a puzzle game or text editor, allow the user to regain control, eliminating frustration that can occur for an errant button click. While it depends on the type of experience the game is trying to create, preventing and recovering from errors will help the user feel less punished for accidents.

Flexibility

Flexibility is key to allowing a user fully control their experience in a game by allowing the ability to customize it as they see fit. Flexibility can either tailor the aesthetic experience of the game to a user's liking, such as with character creation, or it can allow the player to choose the control scheme that they prefer, like inverted axis for aiming or flying vehicles. Whatever the user's reasoning, flexibility helps a user play the game in the easiest way possible for them.

Analysis Schedule

I intend to be as thorough as possible in my analysis in order to really break down and understand how different UX/UI systems work. In order to keep the UI/UX Analysis related to my UI/UX Project, and within the timeline of the semester, I will limit my analysis to the following list of systems to be completed every two weeks:

- Week 2 (1/22): Input Systems (Keyboard/Mouse/Game Pad)
- Week 4 (2/5): Menu Systems & In-Game Menu Systems
- Week 6 (2/19): Health Tracking & Lives
- Week 8 (3/5): Game Progression (Score/Money/Time/Experience/Points)
- Week 10 (3/19): Weapons/Ammunition
- Week 12 (4/2): Reticle/Cursor/Crosshair
- Week 14 (4/16): Capabilities/Powers/Abilities
- (Stretch Goal) Compass/Quest Arrow
- (Stretch Goal) Mini Map

UX/UI Project Breakdown

Introduction

While the UX/UI Analysis portion of my project proposal consists of written analysis of UX/UI systems, the project portion will allow me to design and develop my own UX/UI systems as a proof of concept for the successful patterns I discover in my research. The sole purpose of this project is to create a UX/UI system so the emphasis on game mechanics will be kept to a minimum in order to prioritize my time.

Details

I will be using Unity 3D as a game engine, C# as a scripting language, and Visual Studio 2015 as an IDE. Any 2D art assets I need will be created through Adobe Illustrator, while placeholder 3D models will be either made in Autodesk Maya or downloaded from the Unity Asset Store. In order to show off the UX/UI system that I will need to create a shell of a game that can use this UX/UI system that I am creating. I have decided that I will be making a basic space flight/combat simulation game that will provide a reason for the system to exist, as well as a theme to design the system around.

I view the project portion of my proposal as a way to demonstrate my understanding of the analyzed UX/UI system. I believe this approach will best show my ability to research and analyze UX/UI by showing my thinking process, as well as highlight my technical capability as a designer developer through a demonstrable example.

Project Schedule

I intend for the project schedule to closely mirror the analysis schedule as closely as possible due to project being highly dependent upon what my analysis discovers. By having both the analysis and its project module completed in the same two-week schedule, I should be able to keep this project modular and flexible if any problems should arise:

- Week 2 (1/22): Input Systems (Keyboard/Mouse/Game Pad)
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