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**Design Document for:**

# Pan-demonium

**Food Cooking Game**

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Written by Lighthouse Studios

Version # 1.00

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Name of Game 1

Design History 5

Version 1.10 5

Version 2.00 5

Version 2.10 5

Game Overview 6

Philosophy 6

Philosophical point #1 6

Philosophical point #2 6

Philosophical point #3 6

Common Questions 6

What is the game? 6

Why create this game? 6

Where does the game take place? 6

What do I control? 6

How many characters do I control? 6

What is the main focus? 6

What’s different? 7

Feature Set 8

General Features 8

Multi-player Features 8

Editor 8

Game play 8

The Game World 9

Overview 9

World Feature #1 9

World Feature #2 9

The Physical World 9

Overview 9

Key Locations 9

Travel 9

Scale 9

Objects 9

Weather 9

Day and Night 9

Time 10

Rendering System 10

Overview 10

2D/3D Rendering 10

Camera 10

Overview 10

Camera Detail #1 10

Camera Detail #2 10

Game Engine 10

Overview 10

Game Engine Detail #1 10

Water 10

Collision Detection 10

Lighting Models 11

Overview 11

Lighting Model Detail #1 11

Lighting Model Detail #2 11

The World Layout 12

Overview 12

World Layout Detail #1 12

World Layout Detail #2 12

Game Characters 13

Overview 13

Creating a Character 13

Enemies and Monsters 13

User Interface 14

Overview 14

User Interface Detail #1 14

User Interface Detail #2 14

Weapons 15

Overview 15

Weapons Details #1 15

Weapons Details #2 15

Musical Scores and Sound Effects 16

Overview 16

Red Book Audio 16

3D Sound 16

Sound Design 16

Single Player Game 17

Overview 17

Single Player Game Detail #1 17

Single Player Game Detail #2 17

Story 17

Hours of Game-play 17

Victory Conditions 17

Multi-player Game 18

Overview 18

Max Players 18

Servers 18

Customization 18

Internet 18

Gaming Sites 18

Persistence 18

Saving and Loading 18

Character Rendering 19

Overview 19

Character Rendering Detail #1 19

Character Rendering Detail #2 19

World Editing 20

Overview 20

World Editing Detail #1 20

World Editing Detail #2 20

Extra Miscellaneous Stuff 21

Overview 21

Junk I am working on… 21

“XYZ Appendix” 22

“Objects Appendix” 22

“User Interface Appendix” 22

“Networking Appendix” 22

“Character Rendering and Animation Appendix” 22

“Story Appendix” 22

# Design History

This is a brief explanation of the history of this document.

In this paragraph describe to the reader what you are trying to achieve with the design history. It is possible that they don’t know what this is for and you need to explain it to them.

## Version 1.10

Version 1.10 includes some tuning and tweaking that I did after making my initial pass at the design. Here is what I changed.

1. I rewrote the section about what systems the game runs on.
2. I incorporated feedback from the team into all parts of the design however no major changes were made.
3. Just keep listing your changes like this.

## Version 2.00

Version 2.00 is the first version of the design where a major revision has been made now that much more is known about the game. After many hours of design, many decisions have been made. Most of these large design decisions are now reflected in this document.

Included in the changes are:

1. Pairing down of the design scope. (Scope, not design)
2. More detailed descriptions in many areas, specifically A, B and C.
3. Story details.
4. World layout and design.

## Version 2.10

Version 2.10 has several small changes over that of version 2.00. The key areas are in many of the appendixes.

Included in the changes are:

1. Minor revisions throughout entire document.
2. Added “User Interface Appendix”.
3. Added “Game Object Properties Appendix”.
4. Added concept sketch for world.

# Game Overview

A cooperative multiplayer game called **Pan-demonium**, where players manage a chaotic sustainable restaurant. Players must coordinate to serve dishes under time constraints while balancing sustainability goals and customer satisfaction. Like Overcooked, the game emphasizes teamwork, time management, and strategy but incorporates eco-friendly choices to elevate gameplay dynamics.

## Philosophy

### Philosophical point #1

**Consumerism vs. Sustainability**: Players navigate the tension between profitability and eco-consciousness. Decisions such as sourcing ingredients sustainably, managing food waste, or using biodegradable packaging impact the environment and the restaurant’s reputation.

### Philosophical point #2

**Human Interaction**: Emphasizes teamwork, communication, and empathy among the restaurant staff. Players experience the importance of coordination to maintain efficiency and resolve conflicts in a high-pressure environment.

### Philosophical point #3

**Ethics in Business**: Introduces dilemmas around fair wages for staff, ethical sourcing of ingredients, and inclusive menu options. Choices shape the restaurant’s identity and customer loyalty.

## Common Questions

### What is the game?

Pan-demonium is a fast-paced cooperative game where players manage a bustling restaurant focused on eco-friendly practices. The goal is to prepare meals efficiently while striving for sustainable solutions, ensuring customer satisfaction

### Why create this game?

This game aims to address sustainability and teamwork creatively while filling the niche for socially conscious gaming. It’s inspired by the fun chaos of Overcooked but with an ethical twist, ideal for those who enjoy collaborative and strategic gameplay.

### Where does the game take place?

Set in an urban cityscape, the restaurant operates in diverse locations—from eco-communities to industrial zones—reflecting the socio-economic challenges of sustainability.

### What do I control?

Players control chefs as they chop, cook, serve, and solve logistical puzzles. Players also influence business decisions that shape the restaurant’s eco-friendly trajectory.

### How many characters do I control?

Each player controls a single character, but teamwork is paramount. Up to four players collaborate simultaneously.

### What is the main focus?

Players aim to keep the restaurant running smoothly, achieve sustainability targets, and satisfy customers under tight deadlines.

### What’s different?

Unlike other culinary games, Pan-demonium weaves sustainability into its core mechanics, pushing players to balance ethical choices with operational efficiency

# Feature Set

## General Features

Chaotic Kitchen gameplay

Sustainability focused mechanics

3D graphics with vibrant visuals

## Multiplayer Features

Co-op gameplay for 1-4 players

Voice chat for seamless communication

## Editor

Custom level editor for designing unique restaurant setups

## Gameplay

Decisions on eco-friendly practices like dishwashing manually.

Dish preparation, ingredient sourcing, customer service

# The Game World

## Overview

Pan-demonium’s world blends urban environments with sustainability challenges. The restaurant adapts to different socio-economic conditions.

## World Feature #1

Players will experience urban and suburban restaurant locations, each presenting unique challenges, from energy-efficient upgrades to water-saving practices.

## World Feature #2

Ingredients come from local farms or industrial suppliers, highlighting the trade-offs between cost and environmental impact.

## The Physical World

### Overview

Describe an overview of the physical world. Then start talking about the components of the physical world below in each paragraph.

The following describes the key components of the physical world.

### Key Locations

Restaurants in eco-villages, city centers, and food truck hubs.

### Travel

Players navigate kitchen spaces and world map with smooth transitions.

### Scale

Restaurants vary in size, impacting strategy and difficulty.

### Objects

Interactive tools like kitchen tools and equipment, plates, service table, and produce crates.

### Weather

Dynamic weather affects customers and energy consumption, adding layers of challenge.

### Day and Night

Time of day impacts order influx.

### Time

Rounds last 5-10 minutes, simulating breakfast, lunch or dinner rush.

## Rendering System

### 2D/3D Rendering

3D rendering with top-down or fixed-angle perspectives for clear visibility.

## Camera

Adaptive camera angles to capture hectic gameplay moments.

## Game Engine

### 

### Collision Detection

Optimized to manage crowded kitchen spaces effectively

## Lighting Models

Natural and artificial lighting enhances immersion, with visual cues for mood and time progression.

# The World Layout

## World Layout Detail #1

Multifaceted restaurants, each with unique layouts and challenges.

## World Layout Detail #2

Interactive kitchen stations for cooking, recycling, and composting.

# Game Characters

## Overview

Chefs and customers

## Creating a Character

Players can customize their avatars, choosing outfits and tools.

## Enemies and Monsters

Time pressure, equipment malfunctions, and unsatisfied customers.

# User Interface

## Overview

Provide some sort of an overview to your interface and same as all the previous sections, break down the components of the UI below.

## User Interface Detail #1

## User Interface Detail #2

# Weapons

## Overview

Cooking tools like knives, spatulas, and pots double as strategic implements for gameplay tasks.

# Musical Scores and Sound Effects

## Overview

This should probably be broken down into two sections but I think you get the point.

## Red Book Audio

If you are using Red Book then describe what your plan is here. If not, what are you using?

## 3D Sound

Talk about what sort of sound APIs you are going to use or not use as the case may be.

## Sound Design

Take a shot at what you are going to do for sound design at this early stage. Hey, good to let your reader know what you are thinking.

# Single-Player Game

## Overview

Single-player mode focuses on managing a smaller restaurant while completing sustainability challenges.

## Story

Describe your story idea here and then refer them to an appendix or separate document which provides all the details on the story if it is really big.

## Hours of Gameplay

Talk about how long the single-player game experience is supposed to last or what your thoughts are at this point.

## Victory Conditions

How does the player win the single-player game?

# Multiplayer Game

## Overview

Describe how the multiplayer game will work in a few sentences and then go into details below.

## Max Players

Up to four players.

## Servers

Client-server architecture ensures smooth gameplay.

## Customization

Players can design unique restaurant layouts and goals.

## Internet

The game, Pan-demonium, will leverage Unity's Multiplayer Networking System (Netcode for GameObjects) to enable seamless online play. Unity's robust infrastructure ensures reliable and efficient client-server communication.

**Client-Server Model:** Unity will act as the foundation for creating dedicated servers or hosting peer-to-peer connections, depending on the players' preferences. This ensures low-latency gameplay and minimizes disruptions during multiplayer sessions.

**Synchronization:** Unity's Netcode will manage real-time synchronization of player actions, game state, and environment changes. This guarantees smooth interactions and accurate updates, even in fast-paced gameplay scenarios.

**Matchmaking:** Utilizing Unity's Multiplayer Matchmaking features, players can quickly find and join games, either with friends or other online players, ensuring a steady flow of multiplayer engagement.

Cross-Platform Connectivity: Unity's networking API supports cross-platform play, allowing players from different devices (PC, console, mobile) to connect and collaborate effortlessly

## Gaming Sites

Describe what gaming sites you want to support and what technology you intend to use to achieve this. Perhaps Dplay or TCP/IP or whatever. It is probably a good idea to break the tech stuff out into a separate area, you decide.

## Persistence

The game world saves progress, including eco milestones and customer ratings.

# Character Rendering

## Overview

Provide an overview as to how your characters will be rendered. You may have decided to include this elsewhere or break it out to provide more detail to a specific reader.

## Character Rendering Detail #1

## Character Rendering Detail #2

# World Editing

## Overview

Provide an overview about the world editor.

## World Editing Detail #1

## World Editing Detail #2

# Extra Miscellaneous Stuff

## Overview

Drop anything you are working on and don’t have a good home for here.

## Junk I am working on…

Crazy idea #1

Crazy idea #2

# “XYZ Appendix”

Provide a brief description of what this appendix is for and then get down to business and provide data to the reader.

Here are a few examples of some of the appendices in my latest design…

# “Objects Appendix”

# “User Interface Appendix”

# “Networking Appendix”

# “Character Rendering and Animation Appendix”

# “Story Appendix”

Okay, that’s it. I wanted to spend more time on this and really make it a great roadmap for putting a game design together. Unfortunately it would take a ton of time and that is something that we don’t have enough of in this business. I think you get the idea anyhow. Also, don’t get the impression that I think a design should provide the information in any particular order, this just happened to be the way it fell out of my head when I sat down. Change this template any way you want and if you feel you have improved on it, send it back to me and I can pass it out as an alternative to anyone that asks me in the future.

Good luck and all that!

Chris Taylor