PacMan Online (PMO)

***Design Document - Revision 3***

# Introduction

PMO is an online version of the classic PacMan game where players can assume the role of PacMan or one of the Ghosts chasing PacMan.

# Player Roles

## PacMan

Players assuming the role of PacMan have the objective of collecting all pellets on the current map. Pellets are visible on PacMan’s radar regardless of where he is. PacMan has a radius view of the map and so can detect the presence of a ghost much earlier than ghosts can detect PacMan’s presence. PacMan must avoid Ghost players at all costs.

## Ghosts

One or more players other than the player assuming the role of PacMan can play as a Ghost character trying to catch PacMan. To catch PacMan, the Ghost character must physically touch the PacMan character. Ghost players have a limited “tunnel” vision where they can only see down a map corridor that they are adjacent to. This limits visibility and gives PacMan an advantage enough to make the game competitive when multiple ghost players are in-game.

# Ghost Base

A ghost base is where all Ghosts start the game. Ghost bases can also be used as a retreat for a Ghost when PacMan has eaten a Power Pellet or if the Ghost player wishes to gain some bearings on the current location of the PacMan player.

Ghost bases change the radar in that they allow all power pellet locations to be seen on their radar and therefore see PacMan’s current location should he be eating pellets at the time.

# Options

## Game

* [0%-100%] Music volume. (50%)
* [0%-100%]Sound effects volume. (50%)

## Lobby

* [On/Off] Show pellets to Ghost players. (Off)
* [On/Off] Ghost voice chat. (On)
* [On/Off] Ghost powerups: Listed (Mixed)
* [Mixed] Map selection with preview. (Random)

# Radar

The radar is a tool for both PacMan and Ghost players to utilise. Ghosts can use the radar to determine both PacMan’s and fellow teammate’s locations on the map while PacMan can use the radar to find any pellets he may have missed on his rounds. The exact features for each role are as follows:

## PacMan

* Can view the locations of all pellets including power pellets.

## Ghosts

* Can view the locations of all other Ghosts.
* When in the ghost base can view locations of all pellet types.

# PowerUps and Traps

## PowerUps

### Beacon

Ghost has the ability to click on the radar and have a “Ping” and marker placed at the same location on all other Ghost radars for five seconds. This can be used to inform other players of PacMan’s location.

### Hacker

For three seconds the Ghost radar shows the locations of all pellets as if the Ghost was back in base or for PacMan, shows the location of all Ghosts.

### Invisible

For eight seconds, PacMan can become invisible on the map. Pellets will still disappear if eaten but PacMan will not be physically visible where he usually would be.

## Traps

### Blinding Trap

When triggered, either by a Ghost or PacMan himself, the trap reduces the player’s field of vision to one block in each direction. Once the trap is placed, it remains invisible to all players until triggered when touched. This trap can be picked up and placed by PacMan only but any type of player can trigger it.

### Dizzy Trap

When triggered all controls for the player are randomised for a period of ten seconds. This trap can be placed and triggered by any player and remains hidden until touched. There is the possibility of a future addition of a shader to distort the screen.

# Interface

## Splash Screens

The splash screens are quick displays of the company and engine logos. These should fade in with a white or black background, display the logo for three seconds and then fade out. All splash screens can be skipped either by left-clicking or by pressing any key.

## Sell Screen

The sell screen is designed to show the difference between the STANDARD and PRO versions of the game. It should list all features clearly, include screenshots if possible and show how the user can upgrade. This screen needs to display for a minimum of 5 seconds and will remain there until the application is closed or clicked on once the game is over.

## Main Menu

The main menu is where the default game modes are listed. This screen should have a scrolling background and animated links with the possible addition of an animated sprite event playing in the background. All credits should be displayed at the bottom in small text. Available links should include:

* Play Online
* Tutorial
* Options
* Credits
* Exit

## Play Online

The play online menu is the first step users will take in getting a game started. As online play can be quite confusing to beginners, it is important to keep this process as simple as possible. The available links should be as follows:

* **Host a New Game:** A new game is created on the local machine. An option dialog pops up asking if the game should be advertised on the company web-server for matchmaking.
* **Search for an Existing Game:** A search window is executed and servers are contacted and listed with QoS information. Searches are seen five at a time and are listed as soon as contact is made. Servers are picked by oldest listing first.
* **Join a Friends Game:** This allows private sessions. The user is presented with a small window with which to enter the server address and/or port before attempting the connection.
* Return to Main Menu

Each of these options has a unique mode attached to it but all ultimately go into the lobby screen.

## Online Lobby

The online lobby is shown once a successful connection has been made. The host can use this screen to alter gameplay options. All players are given access to changing their avatar colour and nickname as well as a text-chat system and possibly voice chat.

The lobby consists of a user listing section, an options section, a player-options section and a text chat section. Clickable transitions include “Return to Main Menu” and “Start Game” if applicable.

When the minimum numbers of players for the selected map have joined, the host is given the option of starting the game. When the game starts, the lobby listing is removed from matchmaking and gameplay begins.

## Character Select

The character select screen is shown to randomise player character selection and tell each player their role. This is shown before each level and includes the names of the players (or AI), the character underneath and a “Continue” button to start the level. The level name may also be displayed on this screen.

## Tutorial

The tutorial screen will be responsible for running new players through the basics of the game. It will feature a series of static/animated images or in-game simulations of the lesson along with a description and “Next”, “Previous” and “Exit” buttons.

## Options

The options screen displays the current global game options including audio controls. These are outlined in the options section of this document.

## Credits

The credits screen is a simple text box displaying credits for the game. A “Return to Main Menu” button should be clearly present.

# Game Play

## Initial Positioning

PacMan is always positioned in one of several random locations on the map. Ghosts are placed in a random, unallocated, ghost base spot.

## Movement

Both PacMan and Ghosts have the same movement speeds. The only exception to this rule is when PacMan has eaten a Power Pellet and all Ghosts movement speed is halved. Ghosts can travel freely through each other.

## Power Pellets

If at any time, PacMan eats a power pellet; all Ghosts will enter an edible mode for eight seconds. In this time, PacMan will have a counter displayed clearly on his own screen showing him the time he has remaining. If PacMan touched any Ghost in this time, the Ghost is “Eaten” and all that remains are a pair of eyes. While in this state, ghosts lose their radar and ability to see or capture PacMan. To regain their physical properties, Ghosts must return to their base for a period of three seconds as their body re-appears around their eyes.

## PowerUps & Traps

PowerUps and Traps will randomly appear on the map, visible to all players. If the player is able to use the ability, it is collected and added to the player’s inventory. If the player is not able to use the ability, it is destroyed. Once an ability has been collected, collecting any other abilities will discard the current if it has not yet been used.

## Field of Vision

### PacMan

PacMan’s vision is based on a radius around him; much like a spotlight was being shined on him. The spotlight should extend at least four squares in each horizontal and vertical direction from him.

Ghosts  
Ghosts have a very restrictive “tunnel” vision in which they can only see down the corridor they are adjacent to. As the ghost transitions from one tunnel to the next, the current visual region fades to black and immediately, the next tunnel fades into the characters vision.

## **Game Screen**

All players have score, status, current PowerUp/Trap, a radar, game field and FoV mask.

## Pellet Meter

PacMan is given a pellet meter showing how many pellets he has eaten and the target of pellets to win the round. Pellet meters are complete when a certain percentage of pellets have been eaten.

## Game Flow

* All players are placed in random locations.
* A countdown displays on screen counting from “3” to “1” then “Go!”
* After the countdown, all players are given control over their characters.
* PacMan begins eating Pellets and Ghosts begin to chase PacMan around the map.
* If PacMan is eaten, the game is over and the Ghosts are declared the winner.
* If PacMan eats all the pellets on the screen, PacMan is declared the winner.
* The game displays the winner and transitions back to the lobby.