Use Cases (PMO)

# Actors

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| Actor | Description |
| Player Character (PC) | Either PacMan or a Ghost. |
| PacMan (PM) | PacMan is the main character of the game and only one instance of PacMan can exist at any one time. |
| Ghost (GH) | The Ghosts are characters controlled by all other players in the game. There can be multiple instances of these actors. |
| Power-Ups (PU) | Power-Ups randomly appear at various locations on the map. These are collected or destroyed when the either type of player touches them. |
| Traps (TR) | Traps can be laid on the game board at any valid map square. These are triggered when the either type of player touches them. |
| Mouse Cursor (MC) | The mouse cursor available at all points in the game. |
| Ghost Base (GB) | The part of the map that only ghosts can enter. |
| Pellet (PL) | A standard pellet for PacMan to collect. The game is over if PacMan collects each and every one of these on the current map. |
| Power Pellet (PP) | A pellet type that PacMan can eat to put all Ghosts into edible mode. |

# Events

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| Event | Description |
| PM touches PU | PM collides with a PU left on the map somewhere. |
| PM touches GH | PM collides with a GH be it Edible or Not-Edible. |
| PM touches TR | PM collides with an invisible TR on the map somewhere. |
| GH touches PU | GH collides with a PU left on the map somewhere. |
| GH touches TR | GH collides with an invisible TR on the map somewhere. |
| GH enters GB | GH moves to a GB map square. |
| PM touches PL | PM collides fully with an active PL. |
| PM touches PP | PM collides fully with an active PP. |
| MC clicks [Close] | MC clicks the [Close] button on the application window. |

# Use Cases

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| Player Character enters a map square with an active Power-Up. | |
| Description | The player enters a map square with an active powerup. The powerup is collected and destroyed or just destroyed. |
| Basic Course | 1. The player begins movement into a square with a powerup. 2. The square is collision checked for an active powerup assigned. 3. Player Character is assigned the powerup if it is allowed. 4. The powerup is destroyed and removed from the square. |
| Extensions | N/A |
| Preconditions | 1. Powerup is available on the specified square. 2. Player Character can move to the square. |
| Postconditions | 1. Powerup is added to inventory. 2. Powerup is destroyed. |

# Abstractions

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| Abstraction | Type | Notes |
| PC | Base Class | Represents a moveable, networkable, controllable character with powerups and states. |
| PM | Class | Derived from PC with PacMan specific functionality. |
| GH | Class | Derived from PC with Ghost specific functionality. |
| PU | Base Class | Represents a generic base class type that can be assigned and rendered as a player state. |
| TR | Base Class | Represents a generic trap at the base level with overloadable triggers, entry effects and life spans. Contains a PU class to assign to the PC. |
| MC | N/A | N/A |
| GB | Attribute | Part of the map rendering system. |
| PL | Attribute | Part of the map rendering system. |
| PP | Attribute | Part of the map rendering system. |
| Edible/NonEdible | Attribute | Belongs to the ghost derived class describing its edible state. Can we add this into the GhostState? |