Project Proposal

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# Description

A remake of the classic arcade game of Pac-Man, with infinite map generation and additional bonus items

# Competitive Analysis

The original arcade game is clearly the inspiration for the project, but there is a vast library of pac-man remakes (for ex: <https://github.com/masonicGIT/pacman>) that have their own twist on the game.

# Structural Plan

Helper functions and class definitions in a helper file(helpers.py),main.py handles core runtime operations, and a folder for art assets

# Algorithmic Plan

Two main sources of algorithmic complexity:

1. Unique pathfinding algorithms for each of the four ghosts (A\* and DFS probably)
2. Map generation with tight constraints (refer [here](https://shaunlebron.github.io/pacman-mazegen/))
3. Powerups that temporarily change state of the game

# Timeline Plan

* Pathfinding by TP1
* Map generation by TP2
* Polish for TP3

# Version Control Plan

I’m using GitHub for version control (click [here](https://github.com/arthgupta2003/pacman)). Screenshot:

Graphical user interface, text, email

Description automatically generated

# Module List

No modules being used except cmu112graphics

# TP2 Update

No design changes.

# TP3 Update

No design changes.

# Sources

1. <https://gameinternals.com/understanding-pac-man-ghost-behavior>
2. <https://www.geeksforgeeks.org/a-search-algorithm/>
3. <https://www.geeksforgeeks.org/prims-minimum-spanning-tree-mst-greedy-algo-5/>