Design Document for Myco Game

*Team*:

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*Working Title:*

* “Myco-“ prefix relates to fungi.
* <https://en.wikipedia.org/wiki/Mycology>
* (The name is not really that important at this stage, but “Myco” is easier and shorter to spell than “Mycelium”.)

*Game Concept:*

* Arcadey arena battler with sensor management, various abilities, and dynamic levels. Featuring playable fungi supported–and menaced–by other denizens of the forest floor,
* Myco is a fun and moderate-paced romp through the understory.



*Genre Connections:*

* ”Vehicular combat”
* “Third-person Shooter”
* “MOBA”

*Sources of Inspirations:*

* World of Warships
* Missile Defense
* Fantasia
* Mario Kart (Balloon Battle Mode)
* Splatoon

*Mechanics:*

* Mycelium (expand later, but it’s also covered under other items)
  + Represented in the game as “Nodes”
    - (Size, quantity, lifespan, and other parameters will have to be tested and iterated)
  + Hostile mycelium
    - (effects and behavior here)
  + Friendly mycelium
    - (effects and behavior here)
  + Nodes decay after a set period of time (gets deleted from the game)
* “Sensor” Control
  + Nearby passive detection radius
  + Active sensors
    - Toggle with E-key
    - Select from the options at spawn[? May just have one to start with]
      * “Firefly”
        + Shines a cone of vision.
        + Visible to everyone. (Think flashlight in the dark)
      * “Moth”
        + Has a circular radius of detection, like passive detection but larger.
        + Visible to everyone. (Think pheromones… or maybe a lantern?)
      * “Carpenter Bee”
        + Flies an orbit around the controlling mushroom, or maybe around the point of aim.
        + Provides vision to the controlling mushroom and is also visible to everyone else.
        + Can be “shot down” (and should then respawn after a cooldown).
  + Mycelium pulse
    - Activate with Q-key
    - On a cooldown
    - Temporarily provides vision near friendly mycelium
* Abilities
  + Activated with SPACEBAR-key
  + Cycle through different abilities with R-key
  + “Blink”
    - Short range teleport
    - Instant cast, cooldown
    - Much longer range on friendly mycelium
  + “Submerge”
    - Temporary underground movement
    - Toggle, with a finite meter that refills over time
    - Can’t cross hostile mycelium[? Seems reasonable]
  + “Shell”
    - Immobilizes self temporarily
    - Short term invulnerability
* “Riders” (Weapons)
  + Select different riders with #Keys 1-5
  + Fire with Left Mouse Button [LMB], Alt-fire option with Right Mouse Button [RMB]
  + Infinite ammo, with various cooldowns
  + Set to “auto-fire” with SHIFT-key[? Not a huge priority for first iteration]
  + “Locust”
    - Long range missile launched with LMB / Waypoint setting with RMB
  + “Ant”
    - Spreads mycelium along its path of travel launch with LMB / zigzag movement with RMB?
  + “Gnat”
    - Interceptor missiles, launched with LMB / toggle 1,2, or 3 gnats with RMB
  + “Slug”
    - Slow moving and high damage torpedo, launched with LMB / seeker toggle with RMB?
  + “Spore Burst”
    - Close range point defense mode -OR- Medium range ‘gun’ mode. Fire with LMB / Toggle modes with RMB
* Movement
  + WASD-keys
  + Controlling the player mushroom feels a bit like “plowing” through the earth, with a small bit of inertia. Starting and stopping should be responsive, but not instant.
  + The player mushroom “front” should have some clear visual indication, as the point-of-aim is independent from the facing of the mushroom.
  + Strafing is possible. [? Will have to be tested]
  + As mushrooms move, they leave behind mycelium. This lasts a period of time before it decays away (and is deleted).
  + Maybe movement is different on friendly or hostile mycelium.
* User Interface (develop further)
  + Minimal, with no “mini-map”
  + Visual representation of player “health” via mushroom condition
  + “Riders” sit on the mushroom cap, and have some indication to show which is active/cooldown at any given moment [? No clue yet what this would look like]

*Level Design:*

* Forest floors and open meadows. Trees, rocks, grass, and other details are appropriately huge compared to the mushrooms.
* Probably should have randomly spawned “rogue riders” that are hazards to all mushrooms (mobs).
* Dynamic level movement and hazards [? Not in first iteration, may be tricky to figure out AI implementation for]
  + Falling trees
  + Rain
  + Tall grass that limits detection or vision [? No grass in first iteration]

*First Iteration Asset Requirements (Minimum):*

* The same assets can use different coloring to indicate friendly or hostile (ie green for player, red for hostile mushroom AI, yellow for “rogue riders” AI)
* The different asset objects will probably need to be composed of multiple sub-objects for animation later (ie, the mushroom object is made up of the cap and the stem sub-objects)
* Actors
  + 1 Mushroom for “players”
    - (First iteration will probably just use numbers/hit-points bar to indicate mushroom health)
  + 1 Locust/Grasshopper
  + 1 Ant
  + 1 Gnat
  + 1 Slug
  + 1 Sensor (Pick from Firefly/Moth/Carpenter Bee)
* Environment
  + 1 Tree
    - (Not sure if foliage will be necessary at first)
  + 1 Rock/Stone
  + 1 Ground
  + 1 Mycelium (May be better suited as a VFX/Particle)
* VFX/Particle
  + 1 Spore
  + 1 Impact “Splat” (use the same one for all impacts for First Iteration)
  + 1 Blink
  + 1 Submerge
  + 1 Shell
* Animations
  + (Probably none required for First Iteration, can discuss this)