

PROJECT THRESHOLD

1. Introduction

Your team is tasked with designing and developing a persuasive prototype for **Project Threshold**; a single-player, first-person puzzle adventure where players must place weighted objects on pressure pads to open doors. The core gameplay loop is derived from the spatial relationship between these elements and the logical problem-solving required to overcome obstacles and make progress.

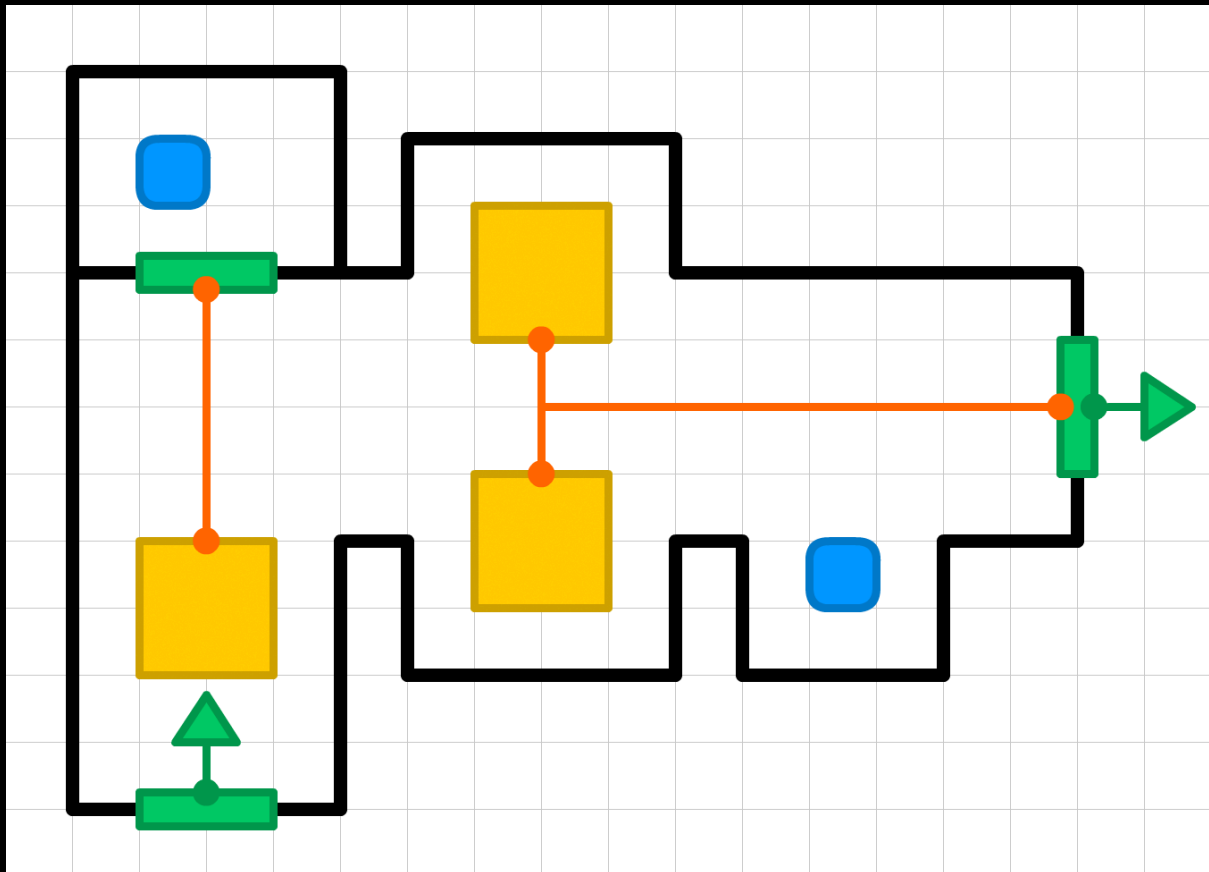


Figure 1. A top-down blueprint illustrating core moment-to-moment gameplay and components including **Pressure Plates**, **Weighted Objects**, **Linked Nodes** and **Doors** with player entry and exit points, as well as progression logic.

A key design objective of the prototype is to ensure that gameplay associated with the relatively simple core objective and limited range of mechanics is made engaging through approaches to level design and iteration that introduce interesting interplay between these components. Where possible, elements of narrative and theme should also be used to enhance appeal and provide context for moment-to-moment gameplay.

This document provides essential information regarding high-level requirements, freedoms and constraints for various game elements, as well as necessary approaches to team-based development and methods of practical delivery.

2. Components & Mechanics

The game components and mechanics detailed below represent all broad elements of interaction and gameplay that should be present in the prototype, though the specifics of their low-level design, implementation and interplay are at the discretion of the team.

- **Player Controller** - The player has the ability to walk, run and jump, as well as pick up, carry and drop objects. Specific implementation (i.e. run speed, jump height) should be informed by the intended experience and other design elements. The player should not have any other inherent abilities.
- **Locked/Unlocked Door** - These physically gate player progress and are initially locked or impassible. They can only be opened by satisfying the conditions of associated Pressure Plates. Doors can be contextually interpreted and functionally realised as anything that meets these criteria.
- **Weighted Object** - These can be picked up, carried and dropped by the player. In addition to the Player Controller, they are the only components which are able to trigger Pressure Plates. Objects can be contextually interpreted and functionally realised as anything that meets these criteria, and can be physics or non-physics based.
- **Pressure Plate** - These are associated with specific Doors, and are only activated when the Player Controller or a Weighted Object is currently interacting with it. Pressure Plates can be contextually interpreted and functionally realised as anything that meets these criteria.
- **Environment Mechanic** - An additional mechanic should be devised that introduces complexity to the core gameplay loop and expanding upon the intended experience. Its functionality should be meaningfully iterated upon in each level as a means of teaching and testing the player.

Beyond these gameplay components, there are further elements of creative and technical design which must be implemented to ensure that the prototype is both functional and fun. Again, the team has the discretion to decide specific approaches to producing these.

- **Game Manager** - This will handle core functionality, such as input and control mapping, progression between levels, success and fail states as well as player death and respawning. Quality of life features (i.e. resetting puzzle elements) should also be considered as part of this.

- **Feedback Mechanisms** - These must communicate current objectives and relevant changes to the game state so that players understand how to progress. Feedback could be realised through a user interface, audio or visual cues, environmental elements, or a combination of these approaches.

It is expected that each member of the development team will contribute to the design and implementation of all components and mechanics detailed above, as well as their ongoing iteration and associated testing.

3. Context & Theme

You must establish a narrative premise which informs the overall experience. This should make reference to genre, a particular scenario or backstory, and the setting or location in which the game takes place. The role and purpose of the player character should also be considered. These concepts and themes should be used to provide meaningful context for different aspects of practical design, and can also be used to frame development questions from an in-world, narrative perspective.

- What are the Locked/Unlocked Doors and where do they lead to? How are they linked to the player's purpose or ultimate goal?
- What are the Weighted Objects and Pressure Plates? What is the logical connection between these?
- What is the Environment Mechanic and how does it logically fit into the overarching theme or setting? Why does it change between levels?
- How do elements of level design or architecture capture a sense of place? How is the player journey or progression communicated?

It will not be viable to capture all aspects of the narrative premise within the prototype itself, and so accompanying documentation should be used to fully express the desired approach.

4. Structure & Challenge

The game is intended to be a linear experience, where players progress from one level to the next in a pre-defined sequence that presents an increasing level of challenge. Broadly, the game should adopt a **Teach** → **Test** → **Challenge** structure, with individual levels sequentially possessing one of the following design objectives.

- **Teach** core mechanics and moment-to-moment gameplay. How will you ensure that players understand, without a doubt, what the game is about and what they need to do in order to progress?

- **Test** the understanding of these elements and introduce complexity. How will you check that players have understood key aspects of gameplay whilst escalating the experience to keep it interesting?
- **Challenge** performance through requirement of skilful execution. How will you allow players to demonstrate everything that they have learnt whilst providing opportunities to flex their knowledge and creativity?

The prototype must feature the same number of levels equal to the number of team members, with individual levels representing around **3 - 5 minutes of gameplay**. Within this scope, the balance between moment-to-moment elements (i.e. exploration, puzzle-solving, platforming) is at the discretion of the team and should be guided by the intended experience.

The environment geometry used in each level should define the relationship between gameplay components as a means of establishing challenges and puzzles. moment-to-moment gameplay, theme and context should also be used to inform approaches to level construction.

Each member of the team must take on **Design Lead** duties for one level, meaning that they are responsible for its design, production, iteration, testing and integration into the final prototype. Team members should provide each other with support and guidance, as well as share design language to ensure that the overall project feels consistent and coherent.

5. Constraints

The prototype must only include the components, mechanics and features described in this document, and development must also take place with the following design and production constraints in place.

- The prototype must be built using Unreal Engine 5.
- No other tools (i.e. Blender) should be used to develop game content.
- Basic Niagara particle systems may be used for player signalling.
- Basic lighting systems may be used to aid player signalling and navigation.
- No weapons or combat systems, melee, projectile or otherwise.
- No complex physics-driven gameplay or Chaos Destruction systems.
- No asset packs, 3D models, shaders or textures beyond simple scale maps.
- Basic audio cues may be used to aid player signalling and feedback.
- No non-player characters, enemies or artificial intelligence (AI) agents.

6. Design Reference

It is recommended that the team play a number of games that exist within the first-person puzzle adventure genre as a means of drawing inspiration from approaches to design and implementation that can be translated to Project Threshold. The following games provide a good starting point for this investigation.

- [Antichamber](#) (Demruth, 2013)
- [Manifold Garden](#) (William Chyr Studio, 2019)
- [Portal](#) (Valve Corporation, 2007)
- [Q.U.B.E](#) (Toxic Games, 2011)
- [Return of the Obra-Dinn](#) (3909 LLC, 2018)
- [Superliminal](#) (Pillow Castle Games, 2019)
- [The Talos Principle](#) (Croteam, 2014)
- [The Turing Test](#) (Bulkhead Interactive, 2016)
- [The Witness](#) (Thekla, Inc., 2016)
- [Viewfinder](#) (Sad Owl Studios, 2023)

