

COBBLE & TROUBLE

THE FIERY YET RUSTY CREATIONS OF A
WITCH AGAINST AN UNRELENTING ENEMY



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1 - CONCEPT

Subject: **Cobble & Trouble** started as a second-year project for the ENJMIN School Master 2. Developed by a team of 12 people of complementary skills and specialties, the game is a **First-Person Shooter / Tower Defence** that lets the player **create** and **play** with **chaos**. It is targeted toward a wide audience of players seeking fantasy action, and unlike conventional takes on the « niche » tower defence genre, the gameplay focuses on **improvisation** and **action** over strategic planning.

In **Cobble & Trouble**, the player controls a young **apprentice Witch** in her master's workshop, a confined environment inspired by « Tower defence »-type arenas. **Assaulted by successive waves** of ice-born enemies, the Witch must **defend the Forge**, a powerful artefact from which she draws her powers and energy, and a crucial piece of balance in the world. To do so, she'll need to search and use mundane and magical objects from the environment to **conjure golems**; these magical, autonomous entities will defend their direct vicinity, and their abilities and attributes will depend on their composition. In a pinch, the Witch can also use her **telekinesis powers** to propel objects at high speed toward foes, in case they slip through her golem defence!



Platform and relevance: The game is initially developed for the **PC platform**, although subsequent console ports (current gen: PS4, Xbox One, Switch) are entirely feasible if the initial PC release is successful. For now, the project is independent and entirely managed by the team and is opened to potential editors' offers.

Regarding **distribution**, the game would be released in **digital** form, through platforms such as Steam or Epic Games Store. This distribution model seems like the most relevant for that kind of products, cutting costs on manufacture and allowing for more flexibility in terms of communication, pricing, and marketing.



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2 - Project Overview and Originality

With Cobble & Trouble, our main goal was to provide the players with an **action-packed First-Person experience** inspired by the Tower Defence genre, where they'll be able to **breathe life into inanimate objects** to organize a dynamic line of defence against waves of enemies.

Aimed toward a wide audience thanks to its “low fantasy”, **accessible universe** and **intuitive** gameplay mechanics, Cobble & Trouble sets itself apart from the other staples of the genre through its heavy use of the environment props in its core game loops, both as a resource for crafting golems and as ammunition to throw at opponents.

The sheer number of enemies combined with satisfying visual effects and a fun physical simulation of most game elements allows for a **spectacular chaos** to arise, in which the player will draw the resources needed to repel the assaults. The goal from the start is to offer a good **balance between strategy** (golem placement, golem composition, resource management) and **action** (fast pace, telekinesis mechanic, exploration of the game area).



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3 - Game Design and Gameplay Overview

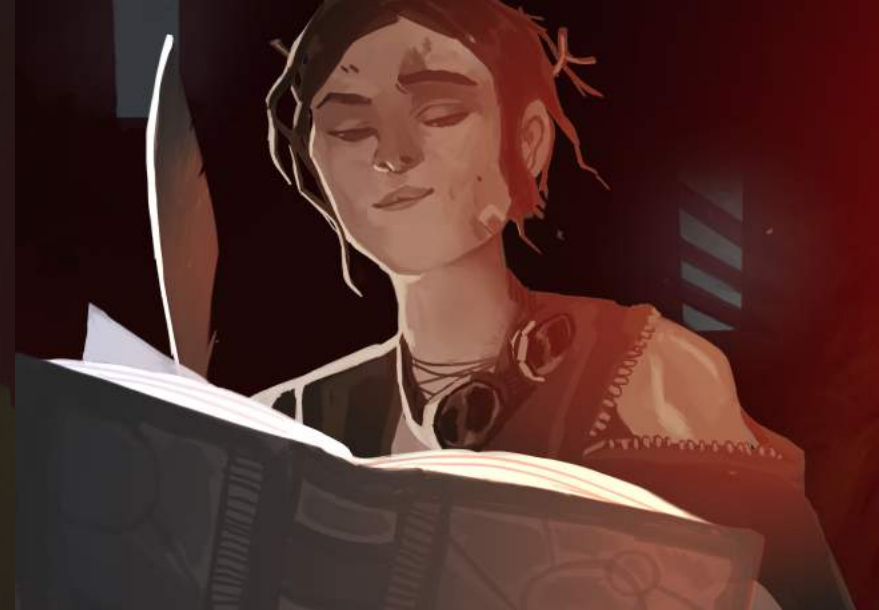
A - 3C

CHARACTER

In the first Chapter, the player embodies a **young apprentice Witch**, going through an internship in the workshop of a powerful, wise sorceress. Left on her own while her mistress travels abroad for a very important Magical Council meeting, our hero will have to face the **assault** of an army of frozen minions! Relying only on the few skills and spells she learned, she'll scramble to make the best out of a tricky situation and use her **telekinesis** powers to repel the assailants and build her own personal army of **golems** out of pots, books, silverware... and other strange magical artefacts she'll find lying around the workshop. Desperate times call for desperate means!

At the beginning of the Chapter, our Witch sounds scared, hesitant, and panicky. But as they progress in the game, the players will find the character more confident, powerful and wiser, owning her mission instead of going through the motions against her will. These changes translate in the game through the player's powers and abilities, the Witch's voice lines and the narration snippets and cinematics occurring in-between levels.

For subsequent Chapters, the player will each time control a new Witch, with a different personality, history and most importantly, **powers**. While our first Witch focuses on telekinesis to supplement her golem crafting ability, others will have different skills, more suited to their environment. Once the game is completed a first time, the players will be able to choose between all 4 characters to replay all Chapters, finding new ways to succeed and **adapting** their game style each time.



CAMERA

Since the player controls the character in **First Person**, only the Witch's arms are visible during play. The animations on the hands convey some information regarding the powers and state of the game (such as the gathered objects hovering over the Witch's right hand).

As with most FP games, the player could adjust the Field of View to their liking, the rest is pretty straightforward. There is no mini-map or inventory/action menus, limiting the player's point of view to that of the Witch at all time; only some **HUD** elements give external information on the state of the game (such as the **wave state**, **Forge** and **player health**).



CONTROLS

Players can play the game both on **keyboard/mouse** and **controllers**.

- With keyboard/mouse, the player uses WASD keys to move and strafe, SHIFT to sprint, SPACE to jump, RIGHT CLICK to gather props, LEFT CLICK to shoot and create a golem, E to switch to golem creation mode and F to disassemble one

- With an xBox controller, the player uses the two sticks to move and look around, RT to sprint, A to jump, RB to gather props, B to shoot props and create a golem, LB to switch to golem creation mode and X to disassemble one

B - Game Design and Rules

GOALS

Each level contains a **Forge**, a central artefact that the player will have to defend against **successive waves of enemies**, spawning from fixed points (doors, wall crevices, tunnels...).

To do so, the player will need to interact with the environment by **gathering props** and objects and either use them as **direct projectiles** with telekinesis or as resources to **craft Golems**, autonomous entities able to attack and destroy enemies in a fixed ranged around them.

Thus, **exploration** of the level, **good aim** and **smart use of props** and objects are essential to achieve an effective defense and win the level.



GATHERING PROPS

By exploring their environment, the player will encounter several objects scattered around the level. Gathered objects **hover above the Witch's right hand** (to a maximum of 6 objects), displaying at all time the player's current "inventory". These props typically represent mundane objects that could be found in the different environments that the player explores; for instance, in the first Chapter, the sorceress' workshop, players will encounter pots and potteries, potions and cauldrons, wood and stones... **Coherence** is key, and the objects' appearance intuitively tells a story and **inform** the player for **golem creation** (see "CRAFTING GOLEMS").

Depending on the Chapter and the level, some **special props** can also be found; these typically display visual effects to separate them from the rest, and their **rarity** is tied to their **power**.

SHOOTING PROPS

As long as the player has one or several props in their inventory, they can shoot them at high speed towards enemies, using telekinesis, to bump and damage them. Doing so will not destroy the object used, but the speed and unpredictable bounces will sometime make it hard to find it again!

Therefore, it is often preferable to use this mechanic to supplement the golems, to take care of stragglers or to save the day in a pinch... A good balance is key to victory!



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CRAFTING GOLEMS

Finally, and most importantly, the player has the ability to **create golems with the props** they gathered. Representing the main line of defense against the hostile waves, these **AI-controlled** entities will defend their direct surrounding against all threat stepping in their area of influence.

The golem's abilities, strength and weakness are defined by their **composition**: depending on the number and nature of the props used, they can be **specialized** in numerous ways to fit the level's layout and the different challenges encountered during the game.



Golems concept art

Base attributes of the golems are:

- **Strength:** the amount of damage the golem does with each swing
- **Health:** the number of hits they can withstand before dying
- **Speed:** the speed at which they attack and move

A golem can be crafted with as few as a single object, so it's entirely up to the player how to invest their resources!

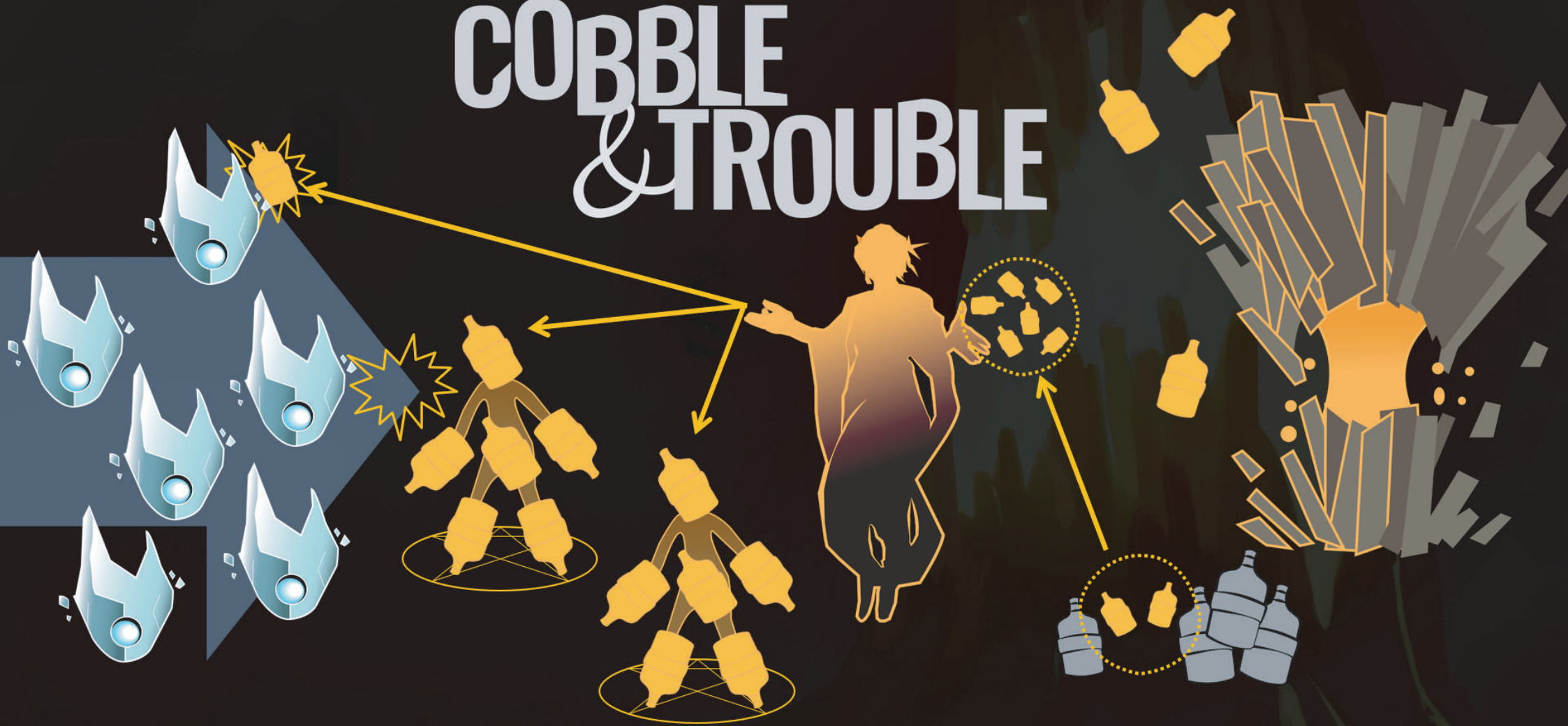
When using a **special prop**, the crafted golem will earn a **special ability** that will greatly change the way it attacks, behave, or affect the enemies. For instance, using a firestone to craft a golem will give it the ability to attack in an area of effect, allowing it to damage several enemies at once! Use them wisely, as you only have a limited quantity of special props available in the level...

Finally, the player can **disassemble** individual golems. This results in the return of all the props, allowing the player to reuse them elsewhere or change the composition of golems depending on the situation.

Example for a 4-objects golem:



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CORE GAMEPLAY LOOP SCHEMATIZED

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C - Level Design and Progression

The base game will be divided in 4 Chapters, each containing 4 Levels.

Each Chapter presents its own atmosphere, mood and music, as well as special props and even environmental mechanics. They will each focus on a certain type of magic; fire, nature, ice and Arcane. In addition, new Chapters will unlock new abilities for the Witch, such as bigger golems or better powers!

Each level will be built around the Forge, which the player must defend, and will contain one or several spawn points from which the enemies will flow.

The levels' structure will vary from level to level, ranging from simple arenas like in the vertical slice, to more complex layouts containing lanes, obstacles, and verticality. As the game progresses, this variety will accommodate the player's new abilities and powers, offering new situations and challenges to scale up the difficulty and depth of the game without overwhelming the player.



Enemies

The waves will contain a set number of enemies of different types; after each successful wave, the player will be allowed a bit of time, depending on the level, to organize their defense and gather more props. Among the foes the Witch will have to fend off, you'll find:

- **The Harasser:** your standard, run-of-the-mill minion. They're slow, clumsy and can only attack a single target in close quarters, but be careful, their strength lies in numbers! They'll attack both the player and the Forge, depending on which one's closest. For now, this is the only enemy present in the vertical slice.
 - **The Pusher:** way bigger and threatening, but also less frequent, this beefy guy will go straight to the Forge, stomping on anything that's on its way. You'll need to focus your efforts to take this one down.
 - **The Assassin:** fast on its feet and able to deal a lot of damage, the Assassins will try to go around your line of defense to attack the player directly. Think fast and adapt to repel them!
- Other types of foes will appear as the game progress, constantly challenging the player to adapt their tactics and offering new situations with each level, including ranged enemies, AOE brawler, or even flying creatures!

ENEMIES - Harasser



The Forge

Source of the Witch's powers, a Forge is present in **each level of the game**. Their appearance may vary, as well as some of its powers and effects, and the player will always have to defend it no matter the cost.

The Forge can only take so many **hits** before it **breaks** and collapse on itself, **losing you the game instantly!** Whatever the threats, it must endure.

After each **defeated wave** of enemies, the Forge will emit an **Outburst**: a powerful wave of magical energy bathing everything around it.

The Forge outburst will:

- **Heal your golems to full health**
- **Spawn new regular props for the player to use**
- **Break cages, walls or other obstacles, allowing the player access to new areas and special props to help them face the onslaught!**
- **Open new spawns for enemy waves**



The Forge in-game

D - Multiplayer

In the full version of the game, we plan on releasing **2 multiplayer modes**:

- **Double Trouble**: in this classic coop mode, 2 players can team up and face all the campaign's maps with cranked up difficulty and minor adjustments to balance. Choose your Witch and explore the combo possibilities!
- **Witch's Quarrel**: in this competitive mode, 2 players will be pitted against each other's in specially designed maps. While the chosen playable characters will retain their skills and abilities, they'll also be able to directly send golems and minions to the opponent's side of the map, controlling both offense and defense, with an additional layer of economy and resource management adding depth and strategy to the game.

Although the Double Trouble mode is fairly straightforward in terms of design and development, the Witch's Quarrel mode still requires a lot of designing and risk management, hence the 3 additional months of pre-production focused on dispelling doubts and studying the mode's feasibility. We're confident that with enough dedicated time, this mode could represent a key selling point to the game, adding online presence and replayability.

UNIVERSE & ART DIRECTION



Art Direction

Cobble & Trouble is a game about crafting magical golems in a place of power. As the character is a witch, we anchored the universe in a stylized fantasy setting centered around a whimsical source of magic. To guide the vision, we chose to work on three pillars: the **magic**, the **objects** and the **chaos**. These keywords are echoed in each visual parts of the game, from the clunkiness of the golems to the chaotic magic that holds the Forge together.

Style & Tone

The art direction of **Cobble & Trouble** is stylized but not too cartoony, mainly to differentiate ourselves from big names of the tower defence genre (*Orc must die...*). Most of the work of modeling and texturing is meant to reinforce the magical tone of the game, the serious backgrounds and lore contrasting with a more absurd situation where the witch is not entirely in control of her power. The visuals are reinforcing the gameplay where the objective is to organize objects in a chaotic situation.

Environment & Props

The vertical slice of **Cobble & Trouble** focuses on an arena-type fantasy environment. The art is directly related to the game design and the level design in order to make a coherent space and to fill the verticality of the level.

The player is immersed in a fantasy setting where magic holds everything together. In this context, the notion of contrast is at the center of the artistic direction, making the warmth of the Forge confront the cold and snow of the outside world. This contrast is emphasized by the lighting and the mood of the night outside the scene.



The Forge in-game

The **Forges** are the heart of the world and environment of **Cobble & Trouble** . They are an objective for the enemies and a place to defend for the player. As the main **landmarks** of the levels, they need to be the center of the attention.

In the vertical **Slice**, the Forge is a place of fire and stones, a power linked to the characteristics of our witch. It's an unnatural monument going from the ground to the ceiling with light and effects at its center. Around it, the architecture is **chaotic**, floating stones united as columns and wood planks stuck in strange shapes. The Forge and its power is what gives life to the golems through the hand of the witch. We kept warm colors and “fire” themed effect to keep a coherence between the power in the hands of the witch, the energy keeping the golems together and the landmark of the Forge.

To build the **golems**, the player needs to find props. Every prop is usable in the game, a constraint that helped us choose which objects could fit in the universe and in the Level Design of the vertical slice. The objects are mostly related to witches and magic (Hourglass, cauldron, chest...)



Characters

The main character of the game is an **apprentice witch** who just learnt to use magic in her daily life. She is **clumsy** but **fierce**, something that is reflected in her design. To link the witch to the magic, a **tattoo** similar to the symbol of the golem's summoning is drawn on her hand. Other **symbols** of "astral" and **geometric patterns** are used in the environment and props as well, keeping a coherence between the setting and the character.

In the game, the **enemies** are creatures of **cold** attacking from outside the Forge. They are designed as a menacing adversary. In the vertical slice, we only meet one kind of enemy which are the most "common". These "**harassers**" are more **clunky** than threatening in their animations, creating a **humorous contrast** between the designs (hostile and triangular) and their actions.

Building golems is the core mechanic of the game. They are **made of props** snapped to a skeleton **rig**, the player being able to create them naturally from a **pool of assets**. By changing the sizes and orientations of the objects and by adding eyes to the crafted golems, the main focus is to create a real personality for them all. The objects are hold together by the energy of the Forge, lighting going from props to props forming a bipedal form. The size of the golem varies with the size of the props, creating two types of golems, tiny and big.



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Magic and VFX

The magic is what holds the game together : it's **messy** and **chaotic** and at the center of the gameplay and lore alike. There is a big contrast between **cold** and the **heat**. The Forge placement is surrounded by a warm atmosphere while next to the doors and windows there is a freezing cold illustrated by ice and snow. The lava of the forge emit embers, particles , distortion and of course a fluid lava with some lava splash.

For the **Witch**, as we only see her hands in the level, a lot of VFXs were needed to **link** the power of the **Forge** to the **spells** she casts. The same colors and particles are used when she builds and summons her creations. You can see on her hands that when she invokes the power of the forge her skin burns as if there was a **price to pay** to use such a power.

The **enemies** are made of **ice**. When they die they explode and let a trail of snow on the ground. To successfully defeat your foes, magic props with special faculties are available in the map : the electric props, the fire props, the AOE props, the freeze props and the explosion props. Using them, the Witch can, respectively, **electrocute** the enemies with shiny red and violet lightning; set them on **fire**; emit a wave of damage illustrated by embers and distortion; **freeze** enemies with a cage of rocks (the same rocks than the forge); and **explode** enemies with fire when the golem dies. You can of course make **combos** with all the magic props to make a monstrous golem.



Tools and technique

Unreal Engine 4 is used as the engine of the game.

The assets are modeled in **Maya**, **Blender** and **Zbrush**. They are textured in **Substance Painter** and **Substance Designer**. A modular approach was used for the environment of the vertical slice, allowing the games designers and level designers to iterate quickly around grey blocks.

Houdini, **photoshop** and the **Particles System** of **Unreal Engine 4** were used for the conception of all the **VFX**.



Commercial potential

Budget

Our final estimation for the full project including additional pre-production and post-launch amounts to **2.7M€**, for a team of **24** and a **22 months** development. See appendix for more details.

Business Model

Cobble & Trouble would be a premium game with a base price of **19.99€**. The game would be sold on digital platform such as Steam or Epic Store depending on opportunities, and the price would be open to temporary sales and discounts (factored in the Average Unit Price).

Average revenue per unit :

Item	Percentage	Based On	Amount
Regular Unit Price			€ 19.99
Average Adjustment for Discounts	30%		€ 6.00
Average Unit Price (Sub-Total)			€ 13.99
Unreal Engine Share	5%	Gross Revenue*	€ 0.70
Sales Platform Share (20%)	20%	Gross Revenue*	€ 2.80
Taxes	20%	Gross Revenue*	€ 2.80
Average Revenue Per Unit (Total)			€ 7.70

*After average adjustment for discounts

With these numbers, the breakeven point would amount to **350k copies** sold

Tools and Methods

For pre-production, the team used a homebrew version of **SCRUM**, with successive sprints, Kanban boards and dependencies tracking. We adapted the methods to accommodate classes and other constraints. Since Agile is mainly a **toolbox**, we use it in a flexible fashion to keep track of progress and documentation and to ensure collective decision making. To implement the method, we used a mix of **Jira** and physical supports (whiteboard and paper) to ensure a smooth communication between members and to avoid uncertainty as much as possible. We also use **GitHub** for versioning, ensuring continuous integration and parallel progress.

For game design, level design and environments, our developers and artists came up with a set of tools and methods allowing rapid **prototyping** and tweaking of the game metrics, especially regarding the golem's **systemic** design, through the props' attributes and effects. World building and level design was thought in a **modular** fashion to save time and iterate more easily.

Developing the full game in a professional setting (and with a bigger team) will imply a more structured approach, taking full advantage of the tools we're already familiar with, and splitting the production team in several pods to reduce complexity and time spent in meetings.



Production Pipeline

Regarding content creation, now that most uncertainty are lifted and the design pillars are final, we have a solid vision of what pipeline to set up to achieve a good production rhythm, using levels as metrics. Chronologically, it would look like this;

- Defining the **identity** of a new Chapter; visual identity (concept arts), story, gameplay intention and original challenges
- **Prototyping** and playtesting a new mechanic, new enemies and potentially new player abilities
- Iteratively **producing** content as we narrow down what works and what doesn't
- Ensuring continuous **integration** to ease playtests and feedbacks

We estimate a full level to be complete in the span of one month, considering the possibility of multiple levels being crafted in parallel using a common pool of assets.

This approach would allow us to stay flexible in terms of final content, adding or cutting content without impacting the whole project, and staying open to budget or timescale constraints and opportunities.

Team presentation

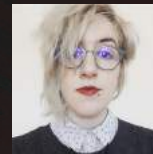
Originally, we're a team of 12 people of various backgrounds and complementary skills, always learning and focused on rapid iteration to ensure common vision and goals. We're confident that our experience working together on Unreal during the pre-production phase will ensure a steady content production while efficiently managing risks.



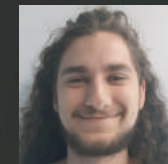
Anaïs RIFF
FX Artist



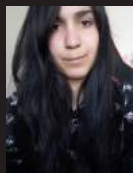
Quentin BORDES
Producer



Romane GARCIA
3D / Concept Artist



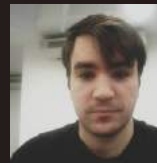
Ulysse ROUAULT-LELIEVRE
Game Designer



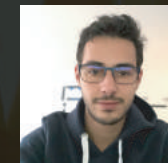
Meryem ERIKCI
Animator



Sebastien VIOLIER
Developer



Paul EYHERAMOUNO
UX Designer



Benjamin DARMON
Sound Designer



Hugo Dunas-Wald
Game Designer



Ronan HOUZE
Level Designer



Tim HOFFMAN
Producer



Baptiste PREVOST
Developer

The development of a full game as it is presented in this document would require scaling up the team size up to **24 people** in order to reach a **AA quality** level. Reaching our funding goal would allow us to found our own professional studio to guarantee good working conditions for everyone involved.

Planning

With a team of 24, a feature-complete Cobble&Trouble could be made in a **total 22 months**, including additional pre-production for the Multiplayer and the post-release live. Aiming for a release on **October 2021**, we aim a period of the year favorable for AA and indie games. See budget appendix for details on personnel efforts.



Vertical Slice Content

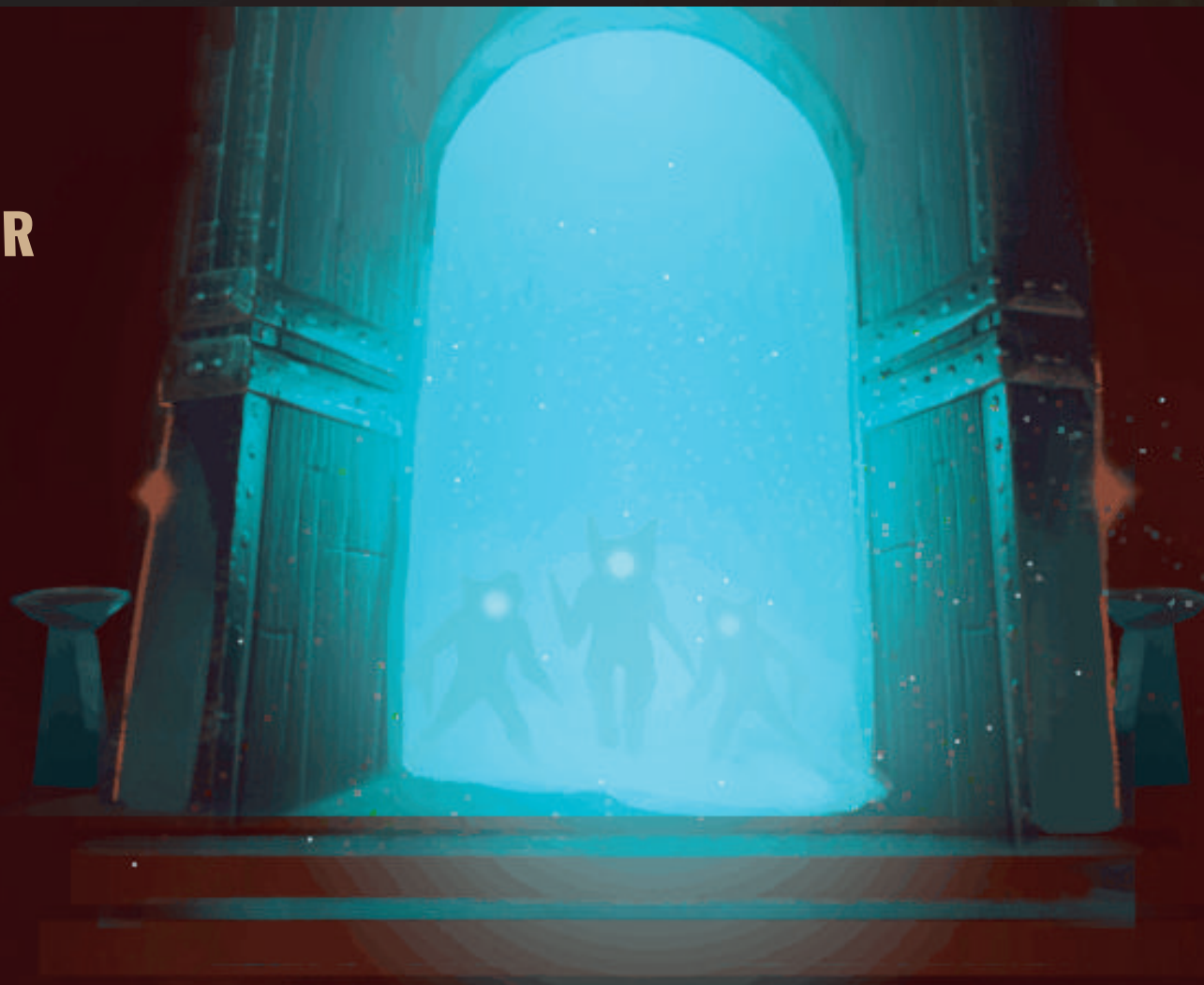
The Cobble&Trouble vertical slice includes the following

- **All core features:** basic golem creation, telekinesis, base move set, victory and defeat conditions
- **One playable level:** Representing the 2nd level of the first Chapter, the level contains regular and special props, multiple waves, and a single enemy type (Harasser). It also embodies our intended standard for visuals (models, FX and textures), sounds and atmosphere.
- **30 interactive props** (basic & special) to build golems or throw at the enemy
- **Basic menu and settings**
- **6min music soundtrack**
- **Animated cinematic introduction**



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**THANK YOU FOR
READING!**



Ulysse ROUAULT-LELIEVRE / Hugo DUNAS-WALD / Ronan HOUZE / Meryem ERIKCI / Romane GARCIA / Anaïs RIFF / Baptiste PREVOST /
Sébastien VIOLIER / Paul EYHERAMOUNO / Benjamin DARMON / Tim HOFFMAN / Quentin BORDES

APPENDIX

- Final architecture and commented Code
- Playtests, UX analysis and interaction principles
- Budget and planning spreadsheet

