

Shoppatomic (WORKING TITLE)

Biggest

June 4, 2021

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Abstract

This document aims to outline the game to be created for all development purposes in enough detail to properly guide and aid in development. The document may be updated as development proceeds, however it is intended to lead development and therefore should be only updated with good reason. "Gunpowder Dream", henceforth referred to as "the game", is a story-driven single player first-person-shooter game with a focus on a host of alternative movement mechanics and strange weaponry. It follows a convenience store employee who has to complete a myriad of "special tasks", assigned to him by his employer randomly during his shift.

1 Overview

1.1 Mission Statement

Welcome to ”—come up with new name —”. Your job is to stack shelves, keep the store clean and handle any special tasks your boss needs. And don’t worry, we have plenty of tools to handle whatever he throws at you. With your help we will become the most successful convenience store around!

1.2 Features

- TODO TODO TODO TODO TODO TODO TODO TODO TODO TODO TODO TODO

1.3 Genres / Tags

- Single-Player
- First-Person-Shooter
- Story
- Indie

1.4 The ”Ws”

1.4.1 What is it?

The game is about traversing a convenience store employee’s dreams as he completes special tasks given to him by his employer throughout the storyline.

1.4.2 Where does it take place?

It takes place on Earth, in a rarely-visited stylised convenience store of the late 90s. The ”dream-world”, which the player gets transported to in certain cases, usually is a abstract version of a convenience store without much logic (infinite isles and nonsensical color patterns for example.)

1.4.3 What am I controlling in the game?

You control a unnamed first-person protagonist. You are able to walk around, interact with certain objects, pick up props, go through your inventory of ”tools” and use these tools on the environment and enemies . The controls can be described as ”FPS-Standard”.

1.4.4 What is the main goal?

Reaching the end of the storyline.

1.4.5 What does the game focus on?

The game mainly focuses on creative and unusual weapons, usually involving movement in a 3D space. It can be described as a linear PvE shooter sandbox with a storyline.

1.4.6 Why did you make it?

I found that I genuinely enjoy fast-paced movement that many old-school arena shooters have and wanted to make a game that focused on weird gun and movement mechanics while also having some sort of "sensible" linear story.

1.4.7 How is your game different to similar titles?

TODO TODO TODO (Singleplayer \neq multiplayer?, more focus on movement?)

1.5 Principles

1.5.1 Goal #1: Creativity with 3D-movement

This game will try to be as creative with movement as possible. It will center around movement in a 3D environment for most of its game mechanic and level design.

1.5.2 Goal #2: Distinct roles for each weapon

No weapon should technically be able to occupy the same role as another. There should not be a weapon that is fundamentally the same as another just with different weapons. Furthermore, the role contributed to the players inventory must be meaningful. Including a fully-automatic rifle just because there isnt one yet doesn't work if a fully-automatic rifle does not add anything meaningful to the gameplay.

1.5.3 Goal #3: Lorem ipsum

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1.5.4 Target Audience

This game will target fans of business and cooking simulators, as well as people who are interested in exploration and scavenging-type games. Furthermore, it will appeal to fans of indie-games and non-mainstream gameplay styles. Finally, the cartoon-inspired artstyle will target creative personality types and younger individuals alike.

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This game will target fans of movement shooters, single player games and indie games in general. It will be available as donationware (with free download as an option) to minimise the bar for entry. Furthermore, it targets other game developers by being open source, which allows for modified games and spinoffs using a simple fork of the repository.

2 Storyline

2.1 Synopsis

Player, unnamed employee of "*yume's convinience store*" - daydreamer, always tired and always wears a white suit-shirt with rolled up sleeves - tries to get through his daily chores but is always *interrupted by his* boss, unnamed unknown identity unknown age. He doesn't know his *bosses* name as the original owner died long ago, but every-time the *boss* calls, there is more work to do. The story begins on a regular work week, a monday. There isn't much to do, just stacking some shelves and picking up some trash from the floor. The *boss* calls and instructs the *player* to go out back and receive a special delivery that will arrive shortly, explaining that the *boss* is expecting demand for a few products to spike soon and that he is taking a gamble. As the *player* opens the door to the storage-room, which he has to pass through to get to the delivery area, he finds himself stuck in another one of his day dreams. He has been having these uncontrollable day-dreams more frequently recently, probably caused by his lack of sleep getting worse. And its usually pretty similar to this one. The *players* hands are turned to machine and he finds himself fighting robots as he tries to reach the end of the impossibly long storage room. The *player* doesn't mind these dreams, since he finds them quite fun. Suddenly he is jumped by one of the enemies hiding in the lockers but as he goes to push the enemy away he finds himself pushing open the back room door to the delivery area.

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2.2 Characters

2.2.1 Lorem Mc Ipsum



Name:

Lorem Mc Ipsum

Relations:

Player: Interactable NPC. Tells short story and offers to sell various stabbing knives.

Steve Fakename: Brother of Fakename Ipsum. They have been competitive with eachother since birth. Lorem always wanted to best his brother in the stabbing competitions

Traits:

helpful

competitive

dealmaker

MISC:

MISC

3 Gameplay

3.1 Core

The player traverses the world using various tools to access normally unreachable places (such as high ledges). He collects various cooking and baking ingredients, as well as a wide variety of processed foods. Items collected can be used to produce product or directly used as product for the storefront. The storefront is a customisable restaurant, where the player has to manage customer interest, manage employees. as well as produce and serve food

3.1.1 Modes

- **Story** - Singleplayer storymode
- **Multiplayer CO-OP Story** - Multiplayer storymode
- **Arena** - Arena PvP mode
- **Sandbox** - Sandbox exploration mode with "cheat-menu"

3.2 Mechanics

3.2.1 Character Movement

The *player* may move forward, backward, left, right (henceforth referred to as *ground plane movement*), up and down (henceforth referred to as *lateral movement*).

Ground Plane Movement is achieved using conventional first person movement controls (WASD for Keyboards, Control Stick for controllers). The player usually walks at a fixed top speed of 4 Units/s. However, the player may hold a designated *run button* to move at a top speed of 6 Units/s. Movement speed above 6 Units/s is considered "sliding" and will drastically limit the control the player has over movement direction and speed until the velocity passes under this threshold by the means of friction or colliding with a wall. Speeds above this limit should not be able to be achieved by the player on his own, but rather must come from tool use or external forces acting on the player. *sliding movement* is roughly 1/5th as effective as regular *ground plane movement*

Lateral movement can only be controlled by the player in the "up"-direction. Hitting a designated *jump button* will cause the player to jump up using a fixed amount of force. Movement in the "down" direction is facilitated by the means of gravity. When not on the ground the player is in a *falling* state, severely limiting his ability to change direction and accelerate, effectively limiting his *Ground plane movement*. This *air movement* is equivalent to 1/10th in strength compared to the regular *Ground plane movement*.

3.2.2 Character World Interactions

The *player* may be moved by *physics props* when colliding with them. Collisions add to the internal momentum value of the player, respecting a simulated amount of mass. The force is then returned to the impacting object in a realistic way, preventing it from moving the player freely and allowing the player to also push around physics props. The player itself is not a fully simulated physics prop, but rather a script-controlled physics entity. Therefore, these interactions must be made possible in code.

3.2.3 Camera

The *Camera* is a conventional mouse-look-based first-person-camera. As such, moving the mouse up, causes the camera to rotate up. Moving the mouse left, causes the camera to rotate left etc.

Mouse sensitivity can be configured in the games settings menu. Furthermore, the mouse directions may be *inverted*, causing the camera to rotate in the opposite direction of what it would normally.

The cameras angles are clamped at 90DEG up/down on the up/down axis to prevent the player looking behind himself without turning around.

Rotating the camera left/right causes the players body to rotate with the camera.

Equipped tools are parented to the camera, making their viewmodels always appear in front of the camera.

3.3 POV

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3.4 Objectives

3.4.1 Per Level

Objective	Required For	Reward	Factors
Collect Min. Amount Items	Finishing Open-World Section	Collected Items	Ability in Traversing Level; Puzzle-solving ability; Avoiding Environmental hazards
Make rent	Passing store management section	Passing to next level/day	Customer patience; Customer Interest; Employee Performance; Cost of bought equipment

3.4.2 Overarching

Objective	Required For	Reward	Factors
Complete upgrade tree	100% game	Upgraded business performance; higher completion percentage	Resources required to upgrade; resources gained in a given period of time; order and efficiency of upgrades chosen
Reach last day	beat base game	Unlock infinite after-game section; complete base game	You have to pass all previous days / make rent consistently

3.5 Restrictions, Principles and Rules

3.5.1 Standardised & Expected Controls for First-Person elements

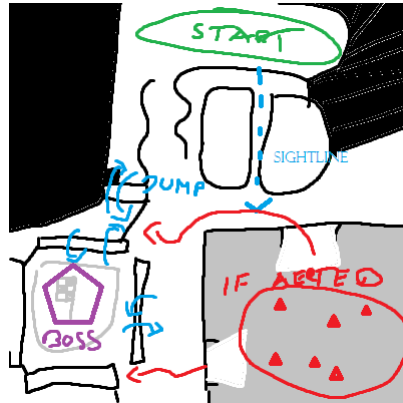
Controls for the first-person controlled elements (walking, running, jumping, camera rotation, tool use) should follow the industry standard control schemes seen in products featuring a similar basic player archetype. This should be true for keyboard/mouse controls, as well as various controller control schemes, unless reconfigured by the player

3.5.2 Prop intractability

Objects in the game world should not be static, unless absolutely necessary to facility a playable gameplay performance or prevent unfixable physics bugs. Objects should be able to be picked up, moved and thrown if they are expected to be lift-able by a human being. Throws and picking up should reflect the simulated weight of the object that is being carried. Objects that cannot be carried should still react to physical interactions (e.g. a non-lift-able cast iron table being hit with a heavy lift-able object should still move as expected from a real simulated object of the respective weight).

3.6 Mapping

3.6.1 Tomato Town



Name:

Tomato Town

Description:

Ten kills on the board rn, just wiped out tomato town. Closed off arena. Defeat the boss and capture the item to win. A enemy base at night, located in sandy planes with many sightlines and cover to hide behind. Don't trigger the alarm, or you will be flooded with enemies.

Hazards:

- Don't trigger the alarm
- Enemies are in the base
- Boss fight at goal (non-avoidable) (2.2.1)

Mechanics used:

- Character Movement (3.2.1)
- Character Interactions (3.2.2)
- Barrier Leap
- Stealth
- Alterable guards
- Base-wide alerting

Speciality:

First stealth map in the game

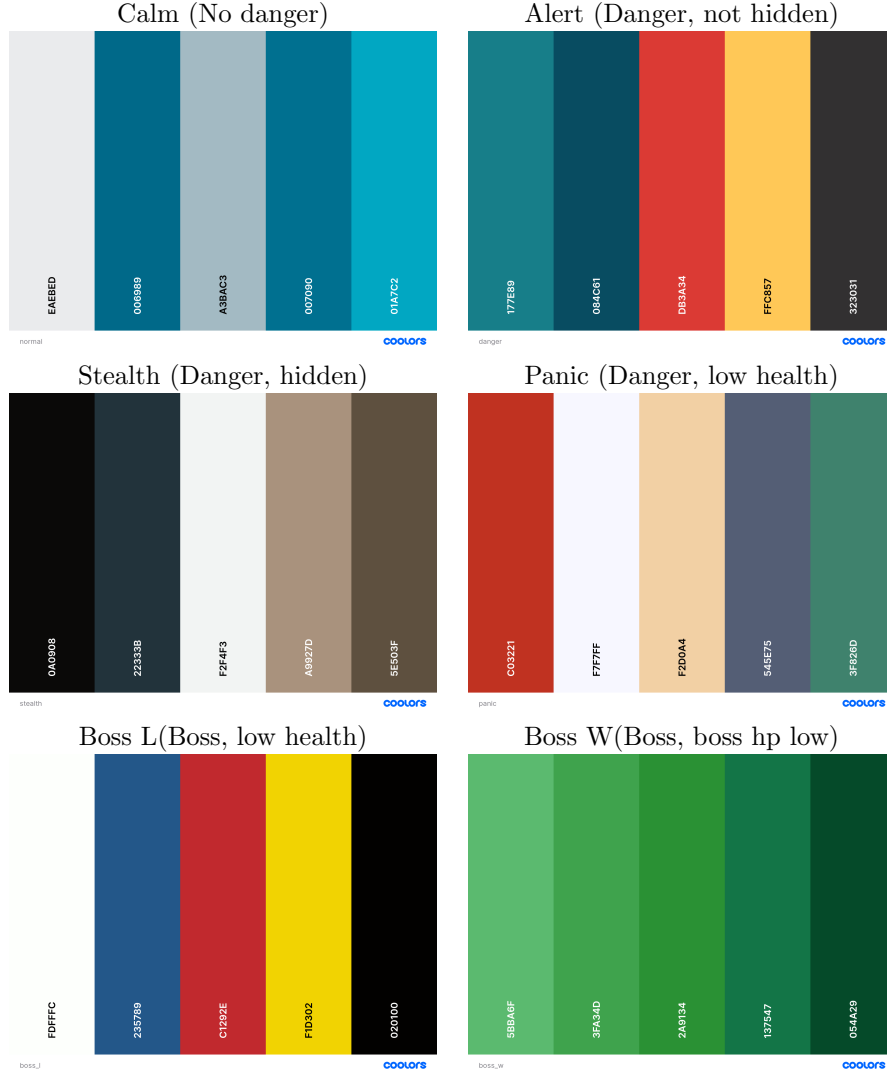
4 Aesthetics

4.1 Principles

4.1.1 Color palette

The game may only use colors from the following palettes in textures and sprites and must be able to switch between them depending on the state of the game.

This may be achieved using special textures and a overarching post processing shader or a modified base albedo shader.



4.2 Lighting

PBR-Shader dynamic realistic provided by FakeEngine3 (v. 1.12.2).

4.3 Mapping

4.3.1 Rough, jagged geometry

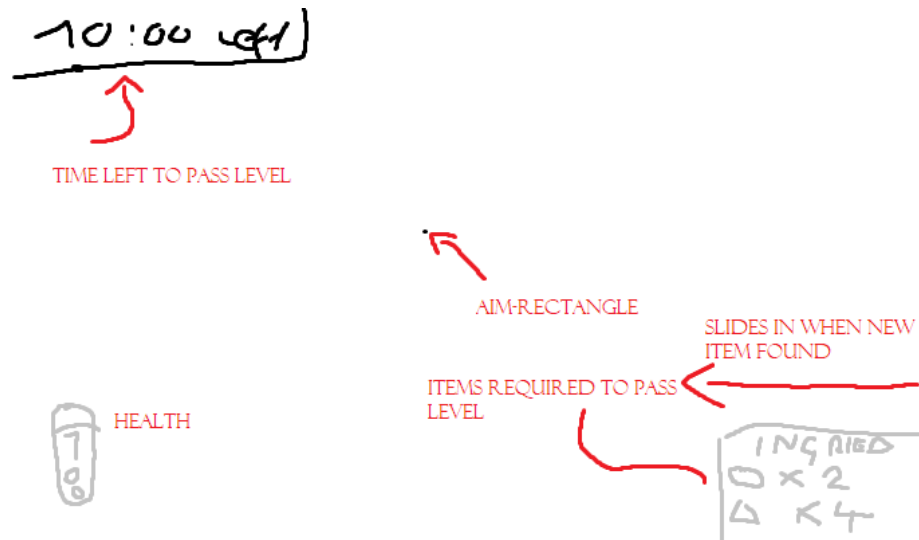
Geometry should look purposefully rough and edged. Rounded corners should be avoided. Arches should be avoided.

4.3.2 Limited draw distance, fog

Game should have permanent fog covering up the limited draw distance of only 200 units.

4.4 User Interface

4.4.1 Ingame-HUD



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4.4.2 Main Menu



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5 Technical Specifications

5.1 Supported Platforms

- Windows
- Linux

5.2 Game Engine

5.2.1 Requirements

Requirement 1 this section is named requirement 1, however it really should be renamed to whatever requirement you have. Describe the requirement here in detail. If the requirement is self explanatory, you may omit the explanation. However, it is highly recommended to include a table detailing the rough criteria you will try and follow when assigning points in the analysis section of the document (see below)

	Point Range	Description
Points	5	Free
	4	below 50 €
	3-1	above 50 €

Requirement 2

	Point Range	Description
Points	5	Lorem
	4-1	Ipsum

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	Point Range	Description
Points	5	Lorem
	4-3	Ipsum
	2-1	dolor

5.2.2 Variants

Fake Engine 01 Fake engine 01, developed by fake company in 1254 BC, is a game engine capable of 2D and 3D graphics using a PBR-Based rendering pipeline. Its mainly used by indie developers and is FOSS.

Fake Engine the second Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

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5.2.3 Analysis

Criteria	Weights	Fake Engine 01		Fake Engine the second		Third one	
		P	W	P	W	P	W
Requirement 1	50%	5	2.5	3	1.5	2	1
Requirement 2	25%	2	0.5	1	0.25	4	1
Lorem ipsum	25%	4	1	4	1	4	1
Sum		11	4	8	2.75	10	3

Table 1: Utility analysis table

Result According to Table 1 Fake Engine 01 has the highest weighted score with 4 weighted points. Therefore it will be used for this project

5.3 Rendering

The game will use a standard PBR-based shading system provided by the game engine chosen. Graphically, the game consists mostly of 3D objects, however *some characters are rendered in 2D*.

5.3.1 2D in 3D

To render 2D characters in a 3D environment, they will be *drawn onto a 3D plane*. This plane will have a "*billboard*" effect applied to it, which causes it to *always face the camera*. Furthermore, the angle between the original forward vector of the plane and the look-vector of the plane (vector between the position of the camera and the position of the plane) will be calculated and the *sprite modified to display a properly rotated version of the character*.

5.4 Control Scheme

5.4.1 Windows

Key	Action
W	PLR_FWD
S	PLR_BCK
A	PLR_L
D	PLR_R
SPACEBAR	PLR_JUMP
MOUSE1	PLR_PRIM
MOUSE2	PLR_SEC

6 Changelog

6.1 Version 0.0.1 - unfinished change

- Changed title from 'gunpowder dream' to 'shoppatomic'
- Removed primary mention of old store name. Come up with a new one (TODO)

Notice: The initial version of this document was filled with some content on the first pages, however I failed to denote this in the changelog. This is the first change made after the initial filling of the document with some basic content a while ago. Refer to git repository for more details.

June 04, 2021