1. **Introduction**

This document is based on the research and design principles for developing "**Slime Up**", a structured game concept that has evolved through new insights and experiences in game design. The intention of this document is to provide a clear, modular blueprint for fellow developers and game designers, covering a broad range of design principles beyond a single platform or genre.

To ensure clarity and flexibility, this document is divided into three sections:

1. Game Concept Document – Outlines the core idea, narrative, and world-building.
2. Game Mechanics Document – Details gameplay systems, combat, and progression.
3. Game Tech Document – Covers technical implementation and development structure.

This document serves as a foundation for game design, but it does not predict the final playability or development roadmap. It is crucial to test game mechanics through prototyping and iteration—using tangible methods like sketches, cards, and paper playtests—before committing major development resources.
While many aspects of game design are influenced by factors such as licensing, genre, and creative direction, this document aims to provide structured documentation that allows designers to focus on creativity and innovation in game development.

Slime Up
To the Sky

2. Concept Document

2.1 Title Page

- Game Name: Slime Up
- Game Catch Phrase: “Slime up to the skies”
- Document Type: Game Design Document
- Document Version: 1.0

2.2 Credit Page

- Game Document Author: Saumya Pande
- Registration Number: 12218027
- Roll no: 43
- Section: KO055
- Document Version: 1.0
- Game Concept: A 3D platformer starring a shape-shifting slime that can grow or shrink to overcome obstacles, solve puzzles, and collect rewards.
- Working Title: Slime Up
- Document Purpose: To define the mechanics, gameplay structure, and design intentions of Slimebound.

2.3 Sign-Off

This section is reserved for team leaders to confirm that they have reviewed and approved the current game design.

2.4 Introduction

Slime Up is a 3D platformer adventure where you play as a young slime determined to reunite with its family, who live at the very top of a towering structure. To make the climb, the slime must rely on its unique ability to suck in air and transform into a balloon-like form, floating upward to reach new heights and overcome obstacles.
The journey is divided into **three** main levels, each representing a stage in the slime’s growth and proving its worth. The player gets to experience growth with the progression of levels. ‘**The First Wind’** teaches the player about the world mechanics, ‘**The Path of Turbulece’** is about the hazards of the world which seemed more welcoming before and ‘**One Last Flight’** is to test if the player is worthy of reaching to the top.
The heart of Slime Up lies in mastering the slime’s playful physics, adapting to new platforming challenges, and feeling the reward of progress as you ascend the tower. It’s a story of perseverance, family, and finding one’s place in the world — told through squishy, bouncy, and uplifting gameplay.

Genre: 3D Platformer / Adventure
Player Type: single player
Gameplay: 3D Platformer, Puzzle-Platformer, Collectathon, Exploration

- **Technical Form:** Physics based platformer, basic enemy AI, and collectible progression.
- **References:** Spyro, Super Mario 3D World, Crash Bandicoot.
  3D platformer: Super Mario 3D World, Crash Bandicoot
  Adventure: Spyro
- **Theme:** Playful, colorful, cartoonish, with nature-inspired environments and bouncy slime aesthetics.
- **Design Intentions:** Accessible fun with progressive challenges, celebrating slime physics and offering replayability through time trials and hidden paths.

2.5 Game Analysis

This is the general overview of the game.

Game Description	
Genre:	• 3D Platformer • Adventure
Game Elements:	• Game elements are the basic activities the player will be doing for fun during the game. • *Example:* ▪ Collect loot ▪ Float ▪ Dodge obstacles ▪ Find ways to climb up.

Game Content:	• *Example:* ▪ Adventure ▪ Narrative ▪ Strategic
Theme:	• *Example:* ▪ Adventure ▪ Playful ▪ Color - Pop
Style:	• *Example:* ▪ Low poly ▪ Color - Pop ▪ *More Examples: Appendix A*
Game Sequence:	• *Example:* ▪ Linear
Player:	• Single Player

Game Reference	
Game Taxonomy:	• *Slime Up* follows a **Game/Mechanics-driven design**, focusing on physics-based platforming and playful movement abilities. • The game falls under the **Fictional category**, set in a whimsical, cartoonish world with colourful and exaggerated environments. • It is further classified as a **3D Platformer / Puzzle-Platformer**, with elements of **Exploration** (hidden paths, collectibles) and **Challenge** (time-bound trials, tricky traps).
Player Immersion:	• This is an attempt to understand what kind of enjoyment the player will receive from the game. • *Example:* ▪ Adventure ▪ Strategy ▪ Narrative ▪ Risky Moves
Reference:	• Spyro • Crash Bandicoot • Super Mario 3D World
Game Technical	
Technical From:	• 3D
View:	• Third person Perspective
Platform:	• C#
Device:	• PC
Game Sales	
Consumer Group:	• People ranging between the age groups of 6 to 35
Payment:	• Online
Estimated Price:	• 450
Device Support List	• PC

2.6 Game Atmosphere

Slime Up creates a lighthearted and whimsical atmosphere, filled with vibrant colors, bouncy animations, and playful sound effects. The environments are cartoonish and nature-inspired, with floating platforms, soft clouds, and lively backgrounds that make the tower feel alive. Music is upbeat and cheerful in early levels, gradually becoming more energetic and tense in later stages to reflect rising challenges. Overall, the atmosphere balances fun and charm with a sense of adventure and discovery, making the journey feel both exciting and heartwarming.

The levels are built to invoke different emotions in the player.

- Level 1 – Lighthearted Discovery :Bright skies, soft colors, and simple platforms create a joyful and curious mood. Players feel relaxed while learning controls, enjoying playful music and the squishy physics of the slime.
- Level 2 – Tension and Growth : The introduction of enemies, trickier traps, and hidden pathways builds suspense and alertness. Slightly darker tones and more upbeat music signal rising stakes, giving players a sense of challenge and determination.

- Level 3 - Victory and Triumph : The final, time-bound level creates urgency and pressure with intense music, glowing keys, and dramatic visuals. Completing it invokes relief, pride, and accomplishment, as the slime proves worthy and reunites with family.

Atmosphere Mood Board

Slime Up embraces a bright, colorful, and cartoonish 3D art style designed to feel approachable and playful. The slime character features squash-and-stretch animations, giving it a bouncy, expressive personality.
Color Palette: Soft pastels and vibrant tones (greens, blues, yellows, and pinks) to create a cheerful, uplifting mood.
Environment: Stylized tower platforms suspended in skies and nature-inspired settings, with floating clouds, glowing coins, and exaggerated hazards (spikes, moving platforms).
Character Design: Simple, rounded shapes with exaggerated expressions and animations. Enemies are designed to look playful but mischievous, not frightening.
UI/HUD: Minimal, colorful, and easy to read — hearts for lives, coins and stars with sparkle effects, and playful icons for abilities.
Camera Style: Slightly zoomed-out third-person camera that keeps the slime in focus while showcasing vertical tower progression.
The overall visual design aims to make the game feel lighthearted, approachable, and fun, appealing to both casual players and fans of classic 3D platformers.

Level Sketch & Description

- **The First Wind –** A lighthearted introduction designed to teach the player the basics. Here, the slime faces moving platforms, spikes, traps, and tricky jumps. Long glides and floating segments let the player get comfortable with the blow-up ability in a playful, forgiving environment.
- **The Path of Turbulence –** Things get tougher as the slime encounters its first enemies: creatures that shoot projectiles to knock it down. Alongside enemies, the player must navigate trickier traps, hidden pathways, and tighter timing to progress further up the tower.
- **One Last Flight –** The ultimate test of the slime's skill and determination. This is a time-bound challenge, where the slime must complete a gauntlet of hazards within strict limits to collect the keys needed to unlock the path to its family. Success proves the slime's worth and secures its role as a Slime Instructor, a guardian and teacher for future generations.

Mood Board

Audio Description

The audio design of Slime Up is playful, dynamic, and mood-driven, reinforcing the game's cartoonish visuals and emotional journey. Music and sound effects adapt across levels to reflect progression, while maintaining a cheerful undertone.

Music: Upbeat, melodic tracks with electronic music.

Sound Effects: Squishy sounds for slime movement, airy "inflate/deflate" noises, sparkly jingles for coin and star collection, and soft boings for jumps.

UI Sounds: Gentle clicks and chimes to maintain a friendly tone.

- **Level 1** : Playful Discovery: Light, bouncy music with exaggerated squishy effects.
- **Level 2** : Rising Challenge: Faster, slightly tense tunes with sharper enemy and trap sounds.
- **Level 3** : The Trial: Urgent, rhythmic soundtrack with triumphant key jingles and timer cues.

2.7 Gameplay

The player starts at the lowest possible point in the climb and can see the platforms leading to the top. Progression in Slime Up is framed around the slime's climb up a flight of platforms, starting from the very bottom where the vast, seemingly endless height of the structure looms overhead. Each level represents a new stage of the journey—beginning with lighthearted, simple platforming, then introducing enemies and trickier hazards, and finally culminating in a time-bound trial that tests all the skills learned. The sense of growth comes not only from overcoming harder challenges but also from the visual climb itself, as the slime steadily ascends toward its family waiting at the top, giving players a clear, motivating sense of upward progress..

Game Elements

- **Platforms:** Handcrafted platforms with traps, challenges etc.
- **Exploration:** The different platforms have places to explore.
- **Progression:** Linear level based.
- **Narrative Choices:** Level dependent dialogues that pop up to guide the player.

Player's Controls

- **Movement:** basic 3D movement and jump using the WSAD and space bar respectively
- **Special abilities:** The player can float and dash.
- **Light Attack:** Slime can jump on enemies to destroy them.
- **Interact:** Dialogue, looting, collecting coins

Win State: Reaching the top and reuniting with the slime's family.

Losing: Falling down, getting hit and dying.

Why it's Fun?

Squishy physics, playful platforming, and the joy of mastering unique inflate-and-float mechanics.

2.8 Key Features

- Number of regions: three
- Number of Enemies/ Characters: one type of enemy
- Time of Game Play: 2 to 3 hours
- Replayability: The game encourages players to try different strategies to clear levels
- Number of Players: 1

2.9 Selling Features

- The player gets to play as a slime ball which can grow and float.
- The colorful, low stake gameplay feels like a breath of fresh air.

3. Game Mechanics Design

3.1 Design Version

version 1.0
C#
Platforms: PC

3.2 Game Design Definitions

- Menu: The menu is always accessable and allows the player to change level or exit game.
- Player Control: Player can control the main agent using simple WSAD for movement, E for float, Space for jump and Shift for dash.
- Game Over (Winning & Losing):
  Winning: Reaching the top. Losing: Death, Failing the timed levels.
- Game Play:

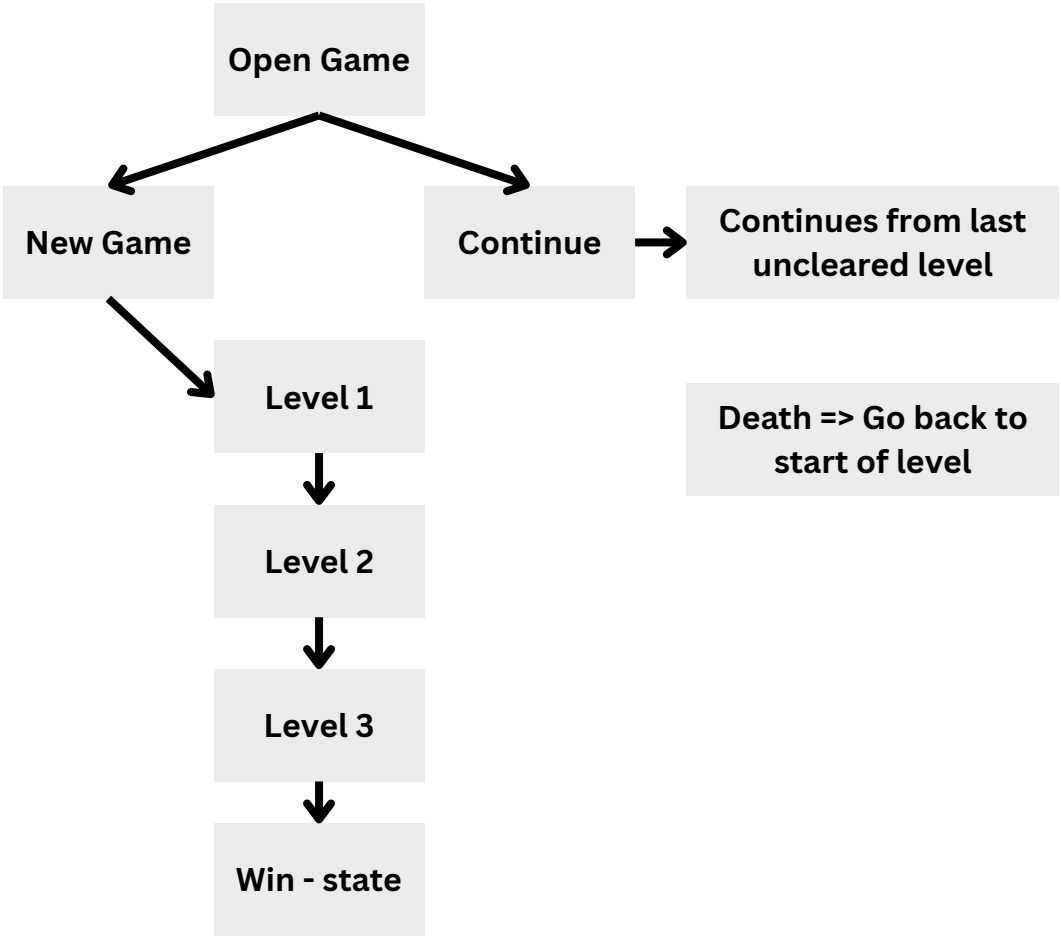
Spikes & Traps: Instantly cost a life if touched.
Abilities: float, dash.
Enemy Projectiles: Knock the slime back, risking falls.
Falling: Losing footing results in losing a life.
Collectibles:

- Stars: removes cooldowns for limited time.
- Hearts: extra lives.
- Coins: points

3.3 Game Matrix

Feature	Player Action	Game Response	Impact
Inflate Ability	Presses E	Player floats	Can climb platforms
Collect coins	Collide	Adds to score	More score is desirable
Enemy Attack	Gets hit	Loss of life	Can lead to game over state

3.4 Game Flow Chart



3.5 Player Elements

- Avatar → The slime, controlled by the player.
- Abilities → Move, jump, dash, inflate/float.
- Resources →

1. Coins → Points/progression.
2. Stars → Temporary power-ups (infinite jump, continuous dash, etc.).
3. Hearts → Extra lives.

- Keys → Required to unlock the final reunion with family.
- Lives/Health → Losing lives from falls, traps, or enemy hits.
- Progression → Climbing levels of the tower, completing challenges, and reaching the top.

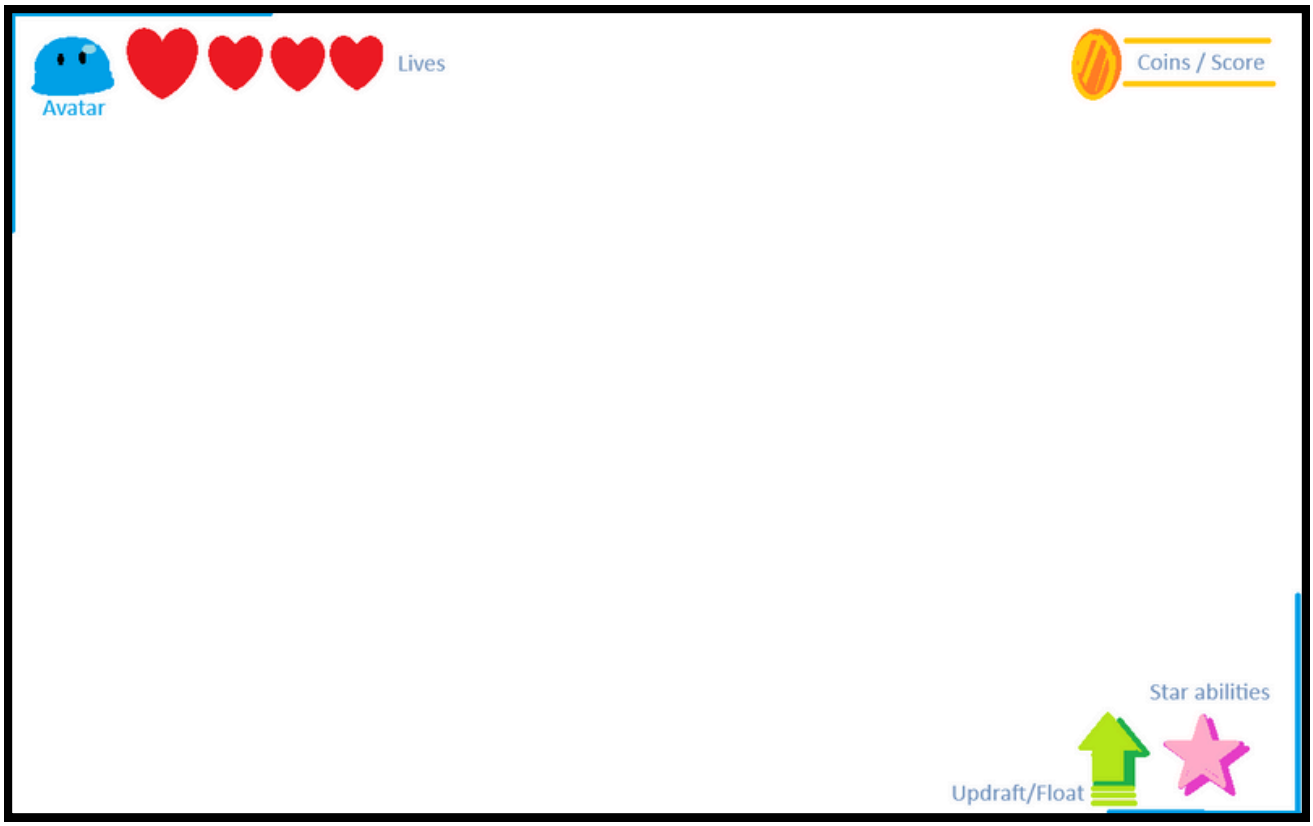
3.5.1 Player Definitons

- Role/Identity: A playful but determined slime undergoing trials to prove its worth.
- Representation: Cartoonish 3D slime with squash-and-stretch physics, controlled in third-person.
- Perspective: Third-person camera that follows the slime while keeping the tower climb in view.
- Relationship to World: The slime interacts with platforms, enemies, collectibles, and hazards, with progress tied to skillful platforming and strategic use of abilities.

3.5.2 Player Properties

- Size: Small (fits through tiny spaces) / Large (balloon float)
- Movement Speed: Base and boosted by dash
- Jump Height: Standard and enhanced via jump boost
- Float Duration: Time the slime can stay airborne while inflated
- Dash Distance: Distance covered per dash
- Health/Lives: Number of hits before losing a life
- Collision Resistance: How the slime interacts with enemies or hazards

3.5.3 HUD



3.5.4 Antagonistic Elements

- The enemy slimes

4. Technical Document

- Unity Engine for digital adaptation.
- Programming Languages: C# for game logic
- Physics Engine: Unity's built-in physics (Rigidbody, Gravity)

4.2 Visual Content

- 2D & 3D Assets: Background art, character model, collectibles etc.
- UI Elements: HUD, menu, save screen

4.3 Audio Content

- Background music for areas: Playful, fast paced, upbeat

4.4 Programming Content

- Game AI for the NPCs
- Game mechanics: Player movement, Environment design

4.5 Code Structure

- GameManager.cs: Handles game logic.
- PlayerControllerScript.cs: Manages movement and abilities.
- EnemyAI.cs: Game AI for enemy mobs.
- EnvEventManager.cs: Controls random events.
- CollectibleRotation.cs : rotation of collectibles
- UImanager.cs : handles UI logic.

4.6 Concerns and Alternatives

- Performance Optimization: Reducing the number of random occurences and elements on screen.
- Optimizing the models to be low poly.

5. Conclusion

Slime Up is a playful 3D platformer where players master a growing, floating slime to overcome tricky obstacles and reach the top, reuniting with family in a fun, colorful adventure.