



THE JUNK-PUNK TITAN: MASTER SPECIFICATION

Version: 2.0 (Deep Production Edition)

Platform: Roblox | **IDE:** Cursor AI + Rojo

Architecture: 3-Player Optimal (Hydra Model)

I. CORE PSYCHOLOGICAL ARCHITECTURE

Every mechanic must serve one of these three behavioral pillars.

1. Loss Aversion (The "Scrap Rat" Protocol)

- **The Hook:** Players don't lose "Health"; they lose "Progress."
- **The Implementation:** Enemies (Scrap Rats) target functional buildings. They do not destroy them instantly; they **unscrew** them.
- **The "Sting":** If a turret is stolen, the player sees the "empty slot" where their hard-earned progress used to be. The pain of this loss is \$2\times\$ greater than the joy of building it.

2. The Zeigarnik Effect (Open Loops)

- **The Hook:** The brain remembers uncompleted tasks better than completed ones.
- **The Implementation:** * **Blueprint Ghosts:** Placing a turret creates a semi-transparent "Ghost." It stays until filled with scrap.
 - **The Titan Countdown:** The Rust-Titan is visible from Wave 1. It is divided into 4 massive stages. An unfinished Titan is a "mental itch" that drives session length.

3. Competence & Autonomy (Role Specialization)

- **The Hook:** Players must feel essential to the group.
 - **The Implementation:** The 3-player "Hydra" roles (Scrapper, Fixer, Enforcer) have mutually exclusive buffs. Without a Fixer, the drills overheat; without a Scrapper, the team starves for rare parts.
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II. MATHEMATICAL SCAFFOLDING (THE "ENGINE")

Use these exact formulas in your `src/shared/Constants.luau`.

1. The Progression Wall

Base building costs follow an exponential curve to force players toward **Automation**.

$\$Cost = BaseCost \times (1.15)^n$

- **Target Growth Rate:** \$1.15\$.
- **Reasoning:** At $n=10$, the cost is $\approx 4 \times$ base. At $n=20$, it's $\approx 16 \times$ base. This "wall" is the psychological trigger for players to seek Prestige/Rebirth.

2. 3-to-5 Player Scaling (The Safety Margin)

The game is balanced for 3. If players leave or join, the world adjusts:

- **Enemy Count:** $n_{\text{enemies}} = \text{BaseCount} \times (1 + (\text{Players} - 3) \times 0.5)$.
- **Legacy Multiplier:** If a player leaves, the remaining players gain a +25% Scrap Gathering buff and +15% Reload Speed. This prevents "Quitter Frustration."

III. TECHNICAL DIRECTORY STRUCTURE (ROJO)

Feed this to Claude Opus so it knows where to write code.

Plaintext

```
root/
  └── src/
      ├── shared/
      │   ├── Constants.luau    -- Formulas, Costs, Role Buffs
      │   ├── TheftComponent.luau -- Logic for "Unscrewing" progress
      │   └── Types.luau        -- Strict Luau type definitions
      └── server/
          └── Services/
              ├── EconomyService.luau -- Team Scrap, Purchase Validation
              ├── EnemyService.luau   -- AI, Swarm Scaling, Theft Trigger
              └── RoleService.luau    -- Buff management & Legacy Multipliers
```

```
|   └── client/
|   |   └── Controllers/
|   |   |   └── VFXController.lua -- Loot Fountains, Screen Shakes
|   |   |   └── UIController.lua -- Near-Miss Progress Bars
|   |   └── ToolController.lua -- Role-specific tool behaviors
|   └── default.project.json
```

IV. ENEMY TIER LIST & BEHAVIORS

Each enemy targets a specific player emotion.

1. **The Prowler (Wave 1+)**: Sprints for loose scrap. *Emotion: Annoyance.*
2. **The Socket-Monkey (Wave 3+)**: Dismantles turrets. *Emotion: Panic (Loss Aversion).*
3. **The Siphon-Fly (Wave 5+)**: Drains power/fuel. *Emotion: Urgency.*
4. **The Magnet-Mite (Wave 8+)**: Disables automation. *Emotion: Strategic Frustration.*
5. **The Trash-Compactor (Wave 10 Boss)**: Consumes walls to drop "Loot Cubes." *Emotion: High Stakes.*

V. THE SCRAP STORM (GLOBAL EVENT)

Occurs every 10–15 minutes. High Risk / High Reward.

- **Mechanic:** Wind and debris reduce visibility. All players must man "Tether Stations."
- **Mini-Game:** "Core Anchor" rhythm game. If failed, the base takes structural damage.
- **Exclusive Loot: Storm-Hardened Steel.** (Required for Tier 4 & Rust-Titan).
- **The Hook:** Variable-Ratio Reinforcement. The storm is scary, but the loot is too good to ignore.

VI. THE ENDGAME: THE RUST-TITAN

The "North Star" project that finishes the session.

1. **Construction:** 4 Stages (Chassis, Boiler, Harvester, Command Pit).
2. **The 99% Stand:** A final, 5-minute onslaught. The Titan is stationary and vulnerable.
3. **The Reward:** Upon completion, the Titan stands up. It becomes a **Mobile Base**.
4. **The Loop:** The Titan travels to "The Deep Scrapyard," where resource drops are \$10\times\$ but enemies are "Elite."

VII. "JUICE" & POLISH CHECKLIST

Never ship a feature without these three layers of feedback.

- **Layer 1 (Visual):** Impact frames, screen shake on hit, "Loot Fountains" of gears.
 - **Layer 2 (Auditory):** Heavy metallic "clinks," steam hisses for repairs, low-frequency "thuds" for Titan footsteps.
 - **Layer 3 (Mechanical):** Item magnetism (loot flies to you), "Wobble" animations on damaged buildings.
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Next Step for You:

Since we have this ultra-detailed map, **would you like me to write the "Skeleton" scripts for the TheftComponent and the EnemyService?** These are the most complex parts to code because they handle the unique "Unscrewing" logic instead of standard health.