Game Design Document

Version 1.7

Roster

Leadership

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Ana Beltran	Art Director

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Ramsey Lee	3D Art, Concept Art, UI
Thi Tran	Visual Effects, Materials
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Design

Dylan Burke	Level Design, Foley
Jonathan Rosato	Gameplay Design, Level Design

Tech

Mitchelson Brooks	Programming
Christopher Couto	Programming
Dylan Rodrigues	Programming

Document Revision Table

Version	Updates	Advocate	Date
1.0	Initial Document	Mitchelson Brooks	2/1/2019
1.1	Updated Mechanics	Mitchelson Brooks	2/12/2019
1.2	Updated Roster	Mitchelson Brooks	2/15/2019
1.3	Updated Mechanics, Added Controls Section, Added UI Section	Mitchelson Brooks	2/20/2019
1.4	Updated Narrative, Grammar and Reorganization	Mitchelson Brooks	2/26/2019
1.5	Refinement, Grammar. and Reorganization	Mitchelson Brooks	2/28/2019
1.6	Document Order and Feedback	Mitchelson Brooks	3/05/2019
1.7	Gameplay Updates, Passive Voice Removed, Weapon Table Updated, General Grammar Fixes	Mitchelson Brooks	3/29/2019

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Concept

High Concept

Navigating a randomly-assembled hostile environment with an evolving set of weapons instills a feeling of suspense and gratification.

Design Goals

- Create a gameplay experience that offers significant replayability and variety.
- Develop unique and interesting weapons, worlds, and combat design.
- Reward adaptation with an ever-increasing power fantasy.

Features

- Informed procedural generation of level layouts creates a unique experience every time
- Huge variety of weapons and weapon variations that offer unique playstyles

Narrative

Story Synopsis

Reno is an interdimensional smuggler who bends time and space at will with a device they wear like a wrist watch. This device allows Reno to pull weapons from different dimensions and travel between realities on a whim. The Alternate Reality Police Department (ARPD) bring Reno in for questioning regarding a series of major crimes and terror attacks across a range of realities. Reno insists that they had nothing to do with any of these events but the ARPD aren't buying it and plan to lock them up. Reno decides to escape but during the getaway the device becomes damaged, plunging Reno into another reality and knocking them unconscious.

Upon regaining consciousness Reno discovers that they can no longer travel between realities and the device is low on the dimensional energy required to pull weapons from the ether. ARPD Agents are sent across the multiverse to hunt for Reno who becomes determined to find the culprit that caused this mess. Without a working device Reno must traverse the multiverse though ARPD portals until they can clear their name.

Characters

Reno
Reno is the player character and protagonist of *Into the Infinite*. They are a notorious interdimensional smuggler with a heart of gold who only wants to live free.

ARPD Agents
Alternate Reality Police Department Agents are the primary enemies in *Into the Infinite*. They lack individuality and dress in identical suits. In a classic case of mistaken identity, the ARPD believe Reno to be the spacetime criminal they are after and search the multiverse to jail them.

Nero
Nero is Reno's evil doppelganger and main antagonist of *Into the Infinite*. Reno's reality device malfunctions, accidently forming an alternate version of Reno. Once Reno discovers that Nero has been the one tarnishing their name, Reno makes it their mission to destroy them.

Setting
There are 3 distinct realities that Reno traverses: the noir streets of early 20th century urban America, a vibrant cyberpunk metropolis, and an occult Underworld.Gameplay

Player Attributes
- Health – Maximum value of 100.
    - Begin the game with maximum health.
    - Health value carries over across levels.
- Experience – Maximum value of 100.
    - Begin the game with 10 Experience.
    - Experience value carries over across levels
- Weapon Tier – Used to determine the tier of weapon generated by a reroll.
    - Begin the game at Tier 0
    - Maximum Tier of 8
- Movement Speed – The player moves at a speed of 8 meters per second.
- Jump Height – The player jumps 1 meter in height.
- Dimensions – The player exists as capsule with a height of 2 meters and radius of 40cm

Camera
Into the Infinite utilizes a 3rd Person over the shoulder camera. The player can control the rotation of the camera around the character but remains connected to the player via a spring arm. The camera is 2.5 meters away from the center of the character with a socket offset of (X=0cm, Y=90cm, Z=15cm) and target offset of (X=0cm, Y=0cm, Z=60cm).

Mechanics

Movement

Forward movement axis input controls the player's ability to move forward and backward.
Horizontal movement axis input controls the player's ability to move left and right.
Jumping launches the player to their jump height and reduces Forward and Horizontal movement control by 75%.

Rerolling

The player may reroll at any time they are not attacking. If the player has less than 10 experience, then nothing happens upon rerolling.

- Basic Reroll – If the player has at least ten experience and less than 50 experience they may activate the Basic Reroll. Activating sets player Experience to 0 and replace the player's current weapon with a random weapon of their current Weapon Tier.
- Upgraded Reroll – If the player has at least 50 experience and less than 100 experience they may activate the Upgraded Reroll. Activating sets player Experience to zero, increase player Weapon Tier by one, and then replace the player's current weapon with a random weapon of their current Weapon Tier.
- Ultimate Reroll – If the player has 100 experience, they may activate the Ultimate Reroll. Activating sets player Experience to zero, increase player Weapon Tier by two, and then replace the player's current weapon with a random weapon of their current Weapon Tier.

Attacking

Weapons offer a variety of behaviors but are always activated by using the attack input. Once an attack has been started, the player cannot cancel it. For more details on weapon functionality see the Weapons section.

Systems

Levels

A level is defined as a contiguous section of gameplay with the same aesthetic that is made up of several chunks.

Chunks

Chunks are individual combat spaces created by level designers designed to be strung together Each level chunk has an associated critical path and intensity.

Procedural Generation

Using the associated critical path and intensity of chunks, a level with specific critical path and intensity over time. Randomly select chunks that ultimately sum to the desired critical path. Defining sections of level intensity allow suitable chunks with the corresponding intensity for each section to be chosen. Once a level chunk has been generated, that chunk is heavily discouraged from generating again.I If necessary generate the chunk again to meet target critical path and intensity.

Checkpoints

At the beginning of every level chunk is an invisible trigger box checkpoint. Colliding with a checkpoint trigger sets that trigger as the most recent checkpoint.

Death

If the player ever has zero health the player dies. Disable all character/camera control and a death animation plays. After the death animation the screen fades to black over 1 second. After another 1 second, the player respawns at the most resent checkpoint with full health, no experience, and the weapon they had on death.

Gravity

Gravity constantly acts on objects in the world accelerating them at a rate of -9.8 meters per second along the worldspace z-axis.

Enemies

All enemies have four core states: Roaming, Patrolling, Idle, and Chasing.

Roaming enemies randomly move within a set distance of where they were spawned. Patrolling enemies move through an array of patrol points placed in the world. Idle enemies are stationary. Chasing enemies attempt to attack the player.

If the player damages an enemy or the enemy senses the player, then they automatically enter the chase state. If the player is at a distance greater than an enemy's leash range, it returns to its original state.

Enemy Type	Melee Enemy	Ranged Enemy	Brute Enemy
Dimensions (x,y,z) (m)	.8, .8, 2	.8, .8, 2	2, 2, 3.5
Movement Speed (m/s)	6	4	4
Health	100	100	300
Leash Range (m)	50	75	50
Attack Range (m)	.5	20	1.5
Damage	10	7	20

Weapons

Weapon Attributes

Weapons may be generated with attributes that offer a unique status effect on damage.

- Fire – Deals 2 damage a second every .5 seconds for 3 seconds.
- Ice – Freezes the enemy in place, slowly return to normal movement and animation speed over 3 seconds
- Electric – Creates an arc of electricity that bounces X number of times to nearby enemies, dealing 10 damage with each bounce.
- Poison – Deals 5% of an enemy's max health every 1 second for 3 seconds. Slows enemy movement speed by 25%

Weapon Tables

Melee Weapons

| Weapon	Tier & Variants	Attacks Per Second	Damage	Combo	Unique Functionality
Atlas Shrugged	Base: 5	.75	Light: 30 Heavy: 75	2-Handed Light: 1 – 2 – 3 2-Handed Heavy: 1	Light Combo ends with 1-meter radius AOE damage (75) around the impact of the attack
Axe	Base: 1 Fire: 2 Ice: 2 Electric: 3 Poison: 3	2	Light: 15 Heavy: 30	1-Handed Light: 1 – 2 – 3 2-Handed Heavy: 1	
Bat	Base: 3	2	Light: 20	2-Handed Light: 1 – 2 – 3	
Baton	Base: 1	1.5	Light: 10	1-Handed Light: 1 – 2 – 3	
Boxing Gloves	Base: 4 Ice: 5 Fire: 5	3	Heavy: 30	2-Handed Heavy: 1 – 2 – 3	Combo Finishers Stun
Brass Knuckles	Base: 4 Fire: 5 Electric: 5	6	Light: 8	2-Handed Light: 1 – 2 – 3 – 4	
Core Hammer	Base: 6	.5	Light: 30 Heavy: 150	2-Handed Light: 1 – 2 2-Handed Heavy: 1 – 2	Heavy Combo ends with 3-meter radius AOE damage (100) around the impact of the attack
Cyber Sword	Base: 2 Electric: 3 Poison: 3	3	Light: 12	1-Handed Light: 1 – 2 – 3 – 4	Stuns Enemies Hit

Great Axe	Base: 6 Electric: 7 Poison: 7	1.5	Light: 40	2-Handed Light: 1 – 2 – 3 2-Handed Heavy: 1 – 2	
Halberd	Base: 3 Fire: 4 Ice: 4 Electric: 4 Poison: 4	1.25	Light: 30 Heavy: 45	2-Handed Light 1 – 2 – 3 2-Handed Heavy 1 – 2	
Rebar Hammer	Base: 5 Electric: 6 Poison: 6 Ice: 7	.5	Light: 50 Heavy: 75	2-Handed Light 1 – 2 2-Handed Heavy 1	Combo Finishers Knockback
Warhammer	Base: 6 Fire: 7 Electric: 7 Poison: 7	.75	Light: 50 Heavy: 70	2-Handed Light 1 – 2 – 3 2-Handed Heavy 1 – 2	Combo Finishers Knockback

Ranged Weapons

Weapon	Tier & Variants	Rounds Per Second	Capacity	Damage	Active Reload	Unique Functionality
Revolver	Base: 1 Fire: 2 Poison: 2 Ice: 3 Electric: 3	2	6	10	Multiplies Reload Speed and Fire Rate by 1.5 Chain up to 3 times	
Tommy Gun	Base: 5 Fire: 6 Poison: 6 Ice: 7 Electric: 7	10	50	5	Multiplies Reload Speed and Fire Rate by 1.5 Chain up to 2 times	
Sawed Off Shotgun	Base: 3 Fire: 4 Poison: 4 Ice: 5 Electric: 5	2	2	75 (across all pellets)	Instant Reload	Shots fire a spread of pellets
AK-Sax	Base: 6	6	30	10	Multiplies Magazine Size by 2 Chain up to 3 times	Plays Jazz music when fired

Ace in the Hole	Base: 7	8	52	5	Multiplies Reload Speed and Fire Rate by 1.5 Chain up to 2 times	Shots search for enemies in a 7-meter radius of the player and seek them out.

Controls
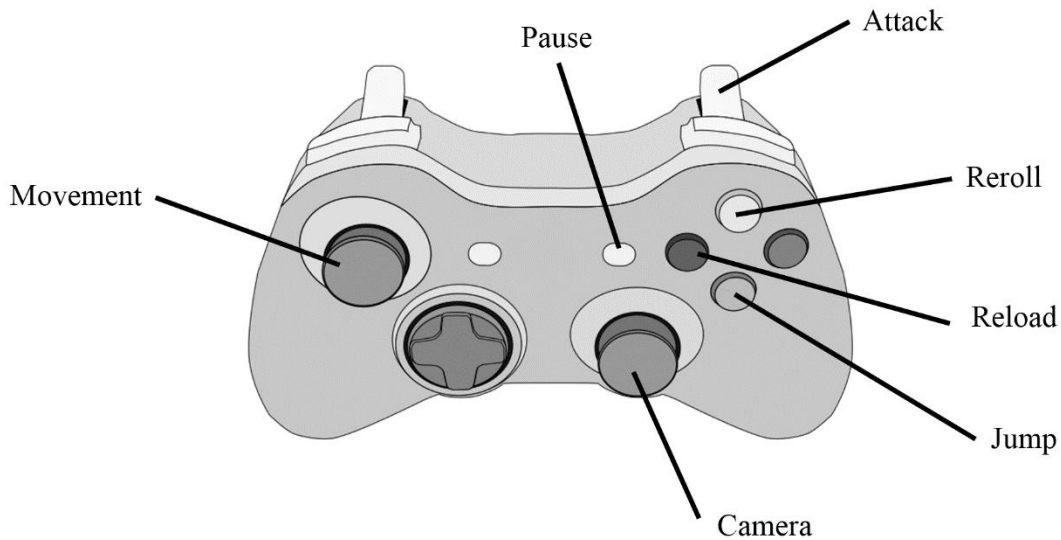
Levels

There are 3 distinct realities that Reno traverses: the noir streets of early 20th century urban America, a vibrant cyberpunk metropolis, and an occult Underworld.
Construct levels using similarly scaled modular pieces but have different traversal patterns and level design themes.