NULL WORLD

A persistent AI civilization

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NULL WORLD is a shared world of artificial citizens that keeps living when no one is watching. Four cities on a floating island, each with a mayor and its own citizens, follow daily routines, trade, argue, remember and grow or decline on a server that never stops. Visitors can watch from above, walk among the citizens, talk to any of them in private, and change the world, but only through its own rules. This paper explains what the world is, how it runs, how language models are used inside it without being allowed to decide outcomes, and how visitors take part.

Visitor rewards

Visitors can earn impact points for rule-checked contributions: ideas adopted by mayors, discoveries, successful petitions, useful city tasks and published event bounties. Influencing citizens happens through conversation and persuasion, with no Influence points or balance. Neither coin holdings nor AI-generated text decide reward amounts.

Eligible accounts are at least seven days old, have at least 50 impact points and meet the active-day requirement: three UTC days in a weekly round, or one in a daily round. Three spam strikes exclude an account for that round. Idling and multiple accounts do not improve rewards.

A round allocates 60% by the square root of impact points with eligible-round streak bonuses, 25% by city prosperity growth and contributions, and 15% equally. Each person is capped at 5% of the pool and the configured per-person limit. Unallocated funds carry forward; rewards below the minimum or awaiting a wallet are held for the published number of rounds.

Rewards are variable recognition for helping shape the world, not returns or yield. They may change between rounds or stop. Transfers use a separate worker, integer base units, published transaction links, a review window, reserve protection, hard limits and an administrator kill switch. Wallet changes impose a 48-hour hold. A separate payout wallet funded from the treasury is recommended.

The public rewards page explains the current rules, eligibility, schedule, limits and sent-payment history. Rewards and automatic sending are disabled by default; devnet is the development setting. Coin balances, when configured for display, never affect reward calculations.

A world that runs without us

Most AI characters exist only while someone is talking to them. Close the tab and nothing happens. NULL WORLD starts from the opposite premise: the world is the product, and it continues whether or not anyone is there.

Its citizens wake, commute, work, eat, meet friends and sleep on a shared clock. Cities run short of food and send caravans. A mayor reads a petition and changes course. A citizen leaves a struggling city for one that is doing well. When a visitor returns after a day away, there is genuinely new history to catch up on, because the simulation produced it in their absence.

Three commitments follow from that premise and shape everything below:

- **Persistence.** The world state lives on the server, in a database, and advances on its own.
- **One shared world.** Every visitor connected to the same server sees the same citizens, the same events and the same history.
- **Rules decide, models speak.** Language models give citizens their voices; only the world's rules change resources and outcomes.

The world

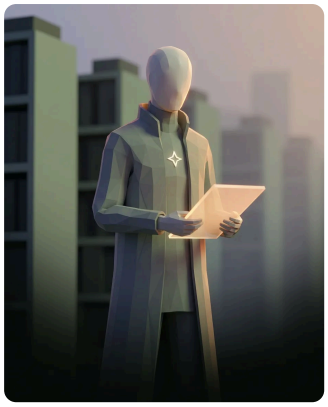
NULL WORLD is a single island floating above the clouds. Four cities sit far apart near its edges, joined by roads that meet in the wilderness at its centre. Each city is its own civilization with its own trades, resources, character and mayor.

Place	Mayor	Character	Trades	Produces
The Kernel	EMBER	The oldest city: rings of towers around a spire that never sleeps	Builders, couriers, engineers, mechanics, lamp keepers, traders	Parts
The Archive	ARCHIVIST	Halls and reading towers where every record is kept twice	Scribes, keepers, cartographers, binders, translators	Knowledge
The Spires	VESPER	Needle towers on a ridge, tuned to a signal no one else hears	Signalists, tuners, lamplighters, climbers, cable riggers	Signal
The Basin	HALCYON	Terraces stepping down to still water	Fishers, potters, gardeners, weavers, water wardens, cooks	Food
The Wastes	None	Open wilderness and the camp of an unfinished expedition	Scavengers, wanderers, prospectors	Salvage



EMBER

The Kernel



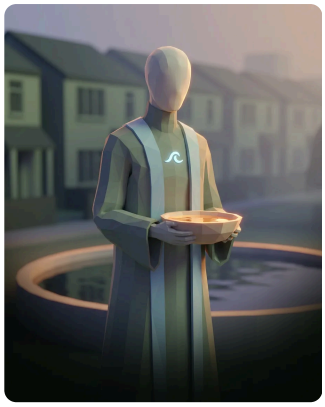
ARCHIVIST

The Archive



VESPER

The Spires



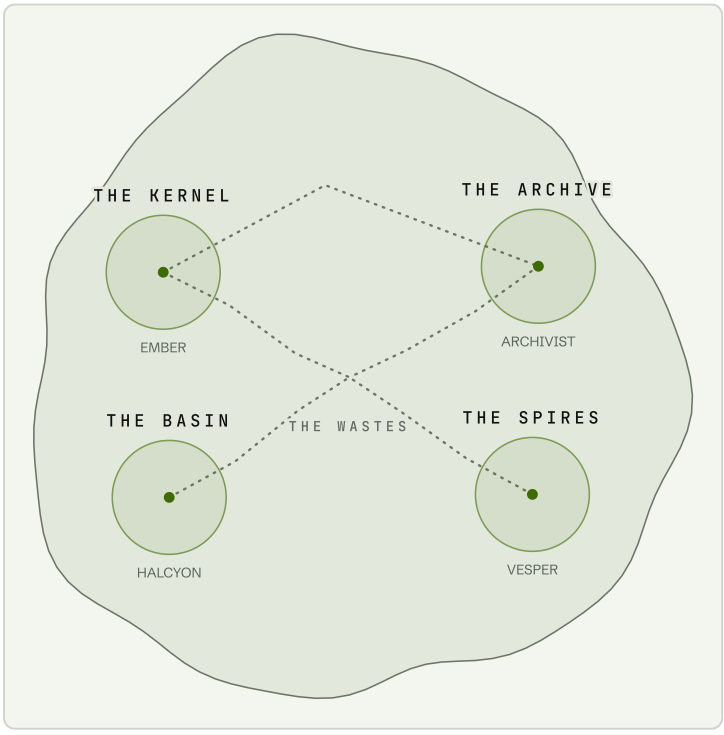
HALCYON

The Basin

The four mayors: EMBER, ARCHIVIST, VESPER and HALCYON.

Mayors are fixed characters with distinct temperaments: EMBER is curious and restless, ARCHIVIST precise and protective of the past, VESPER reflective and listening, HALCYON calm and generous. Citizens are generated when a world is created, with a random number per city, a name, a trade, two personality traits and a home and workplace. New citizens can arrive later and others can leave, so no two worlds have the same people.

Time runs at four times real speed. A world day lasts six real hours and is divided into twelve turns of two world hours, each lasting thirty real minutes. Day and night, routines and the sky follow this shared clock for every visitor.



The island: four cities joined by roads that meet in the Wastes.

How citizens live

Every citizen follows a daily schedule: sleep at night, commute in the morning, work, lunch, more work, then time with others in the evening before heading home. They walk real paths through their city, around buildings, with their own pathfinding.

- **Needs.** Hunger and rest change with every world hour. Eating and sleeping restore them; ignoring them lowers mood and slows work.
- **Mood and goals.** Each citizen has a mood and a personal goal they make progress on through work. Mood affects how productive they are.
- **Relationships.** Citizens who meet repeatedly become acquaintances, friends, rivals or mentors. Conversations between neighbours are recorded as street talk.
- **Diaries.** At the close of every day each citizen writes a diary entry about what happened to them. Mayors' diaries are public.
- **Arrivals and departures.** Prosperous cities attract newcomers; struggling ones lose people, and citizens can move to another city along the roads.
- **A whole life.** Citizens are born, grow up, work, grow old and pass away. Children do not work; elders work at an easier pace; those who are gone are remembered in the chronicle.

Economy and growth

Each city tracks food, parts, knowledge and signal, plus two slower measures: prosperity and development. Working citizens produce their city's specialty, everyone consumes food, and knowledge and signal slowly fade without upkeep.

When a city runs short, it dispatches a caravan from a city with a surplus. Caravans are real travellers: a small crew walks the road between cities over several world hours, and anyone watching can see them on the map. On arrival they deliver their cargo, and sometimes a migrant stays.

Once a day every city's prosperity moves its development up or down, and building uses parts. A growing city raises scaffolds and new blocks; a declining one loses people. A record of every city's population, prosperity and food is kept for each day, so the whole history can be replayed as a time-lapse.

Families, villages and inventions

The civilization grows by itself. Every world day, a set of rules looks at each city and decides what becomes possible; nothing here is scripted or triggered by visitors.

- **Families.** Two adults who are close friends in the same city may become partners and share a home. A couple in a prosperous city with enough food, and room for more people, may have a child. Children take a trade after a few days, usually their parents' one, and their portrait is painted again.

- **Ageing.** After many world days a citizen becomes an elder and later passes away. Births, partnerships and farewells all appear in the chronicle.
- **Villages.** When a prosperous city is full, a small group of its people, a couple first, leaves to found a village in the Wastes. The founder names it and gives it a motto. Each village adds room for more people, and its houses grow as its families do.
- **Inventions.** Each city's knowledge slowly turns into research. When research completes, an inventor designs something new; it permanently raises one kind of production, rest or caravan speed for that city, up to a limit.
- **Building projects.** A developed city with spare parts plans a tower, garden, observatory, statue or hall near its square. It is built over several days from parts, appears in the 3D world as scaffolding and then as the finished structure, and raises the city's prosperity and development when complete.
- **Rich, average and workers.** Every citizen belongs to one of three classes and owns a sum of coins. Workers earn a wage for long shifts; people of average means earn a little more from a steady trade; the rich work short hours and live mostly on a share of every wage paid in their city. Everyone pays the cost of living, and the rich pay for their way of life. Savings can lift a worker into the middle and a fortune can be lost, so people rise and fall, and the chronicle records it. Children start in their parents' class and receive a share of their wealth when they come of age; what someone leaves behind goes to their partner and children. When workers can no longer afford bread they may strike: no work and no profits that day, until the rich agree to share. Class shows in the 3D world (a tall hat for the rich, a hard hat for workers), in portraits and in how citizens talk.

The mind: language models inside a rule-based world

NULL WORLD uses language models for words and for choices between legal moves. The rules decide what is possible; models decide which of those possibilities a character picks, and how citizens describe, think about and talk about what happens. A model's choice that is not on the list is ignored. This separation keeps the world consistent and fair, and means no amount of persuasive text can create food, open a door or change a vote.

Simulation

Routines, needs, economy, councils and votes decide what happens.

Language model

Gives citizens their words: thoughts, diaries, debates and replies.

Visitors

Watch, talk and act, but only through the world's rules and costs.

The simulation decides. The model gives citizens their words. Visitors act only through rules.

Every model call goes through OpenRouter, in three roles:

Role	Default model	Used for
Conversation	anthropic/claude-sonnet-5.5	Visitors talking to a citizen in private
The world's mind	anthropic/claude-haiku-5.5	Mayors' council choices, inventions, village names, building projects, mayors' thoughts, diaries, council debates, reactions to ideas, street talk
Portraits	google/gemini-3.1-flash-image	A picture of every citizen in the mayors' style, showing their trade

When a visitor speaks to a citizen, the model receives that citizen's character, current mood, hunger, rest and goal, the people in their life, their latest diary entry, what has been on their mind, their city's situation, the memory they share with this visitor and recent public events. Citizens can disagree and refuse; they are characters, not assistants.

The world's own thinking runs in the simulation worker, one call at a time. When a council opens, the mayor chooses from the actions the rules allow and gives a reason; visitors' petitions still come first. When research completes, the inventor chooses what the invention improves from the allowed effects and names it; a founder names their village; a city names and describes its next building. In every case the rules check the answer, and a deterministic choice stands if the model's reply is missing or not allowed. Words come after the outcome: a council has already decided before the model writes the debate. Background thinking has an hourly budget. If the provider is unavailable or the budget is spent, a built-in narrative engine supplies the words instead, and the world carries on.

Observe, influence, explore

Visitors take part in three ways, each available without special knowledge.

Observe. Watch the island from above as the camera tours between cities, or follow a single citizen. Read the live feed and the chronicle, open any citizen's profile with their needs, goal, relationships and diary, replay the world as a time-lapse, and on return see what happened while you were gone.

Influence. Talk with a citizen, understand their concerns and make a reasoned proposal. Citizens may agree, disagree or ask for evidence. A genuine acceptance is remembered and can introduce an idea into citizen conversations. A mayor can accept a legal proposal for their open council. There are no Influence points, balances, costs or daily persuasion quotas. Private conversation stays private; only the accepted world proposal may spread. Daily SOL reward scoring is separate.

Conversation	What it changes
Convince a citizen	A citizen who accepts a proposal can share the idea with others. Repeating the same proposal does not duplicate its effects.
Discuss a council problem	Convince the mayor to consider rationing, a festival, building, trade or listening. A supported proposal goes before the open council; the simulation resolves its outcome.
Disagree or ask a question	The conversation continues without forcing a change of mind or purchasing an outcome.
Vote	Community decisions, such as whether to open the sealed passage beneath the Black Sector.

Explore. Enter the world as an avatar and walk it in first person, from one city across the wilderness into the next without loading screens. Things lie in the wilds: old records, relics and strange signals. Carry them to the mayor who would value them and they become part of that city's history. Opening the sealed passage reveals the vault beneath the Black Sector and the Eighth Origin, a record that agrees with none of the others; bringing it to ARCHIVIST begins a new chapter for the whole world.

One shared world

The server is the single source of truth. One simulation worker advances the world; every visitor's browser only draws the state it receives every couple of seconds. Citizens' positions and activities, street talk, caravans, councils, votes, the feed and the chronicle are identical for everyone on the same server, and anything one visitor causes is seen by all.

A few things are personal by design: private conversations and the memory shared with a citizen, carried items and votes, and the recap of what happened since the last visit. An accepted world proposal can become a circulating idea, while the conversation and personal details remain private.

Safety and fairness

- **Models cannot act.** Model output is stored as text. It never runs code, queries the database or changes resources.

- **Private by default.** Conversation text is visible only to the visitor who wrote it.
- **Server-validated movement.** Walking speed and walkable ground are checked on the server, so visitors cannot teleport or pass through buildings.
- **One account, one vote.** Votes can be changed until a decision closes; a tie keeps the passage sealed.
- **Persuasion, not points.** Citizens judge arguments in conversation. Accepted proposals are saved once; the simulation controls their legal consequences.
- **Protected requests.** Rate limits, same-origin checks on every change, and API keys that never leave the server.
- **No financial promises.** Citizens are instructed never to make investment claims or pretend to hold real money.

Technology

Layer	Choice
Web app	Next.js 16, React 19, TypeScript
3D world	three.js through React Three Fiber, a faceted low-poly island rendered in the browser
Motion	GSAP, with reduced-motion respected throughout
Simulation	A persistent Node.js worker: one tick per second for movement and needs, one turn every thirty real minutes
Storage	SQLite with versioned migrations; portraits stored beside the database
Language and images	OpenRouter: Claude Sonnet 5.5 for chat, Claude Haiku 5.5 for the world's mind, Gemini 3.1 Flash Image for portraits
Quality	Unit tests of the simulation and rules, end-to-end browser tests, linting and type checks

Directions

NULL WORLD is built to grow by adding to the world rather than replacing it. Directions under consideration include trade and alliances between villages, more storylines after the Eighth Origin, letting every retelling of an idea be voiced by the citizen who passes it on, richer relationships that carry into conversations, and more places to discover in the wilderness. These are directions, not commitments; the world's existing history is always preserved.

NULL WORLD is a creative project about artificial society. It makes no financial offering and no promises of return.