Weather Synth

How weather becomes music — every data-to-sound rule in the current build

Build of 19 Nov 2026 · Transcribed from the app's code: it describes what the app actually does, quirks included.

The app turns weather into music in three modes. Local plays the sky above you right now. Time Hop plays either a day (any real date from 1940 to two weeks ahead, hour by hour) or the decades 1950–2050, year by year. In every mode the music is built in three layers. Where the place is, with its average climate, sets its identity: key, register, scale and eeriness. Its 1950–2050 climate sets its character: how far the melody moves, how fast a dry hour plays in Local and A day, and when its scale starts to dim or break. The moment — one year, or one hour — sets the weather you hear: tempo, brightness, space, wind, drones, sparkle and dissonance. Think of an orchestra: the location picks the sheet music, the century sets the conductor's temperament, and the moment is the weather inside the concert hall.

THE INPUTS

1 · What the music listens to

Only the numbers below reach the music. In Decades the app boils each year's daily data down to one value per measurement; in Local and A day it reads one value per hour. Weather icons and the sunrise and sunset times are shown on screen only.

Measurement	Decades: one year	Local and A day: one hour
Temperature	Average of every day's mean temperature, °C	The reading for that hour, °C (Local, live: the reading right now)
Hottest and coldest	Highest daily maximum and lowest daily minimum of the year	Not used (shown on screen only)
Precipitation	Year total, mm	mm in that hour (live: the last 15 minutes × 4, shown on screen; the tempo uses the hour's forecast)
Snowfall	Not used — snow is worked out from cold + wet (section 4)	cm in that hour (live: the last 15 minutes × 4)
Humidity, cloud cover	Yearly averages, %	That hour's values, %
Wind speed	Yearly average, km/h at 10 m	That hour's value, km/h
Pressure	Yearly average, hPa at sea level	That hour's value, hPa
Sunlight	Average daily solar energy, MJ/m² per day	That hour's solar power, W/m²
Day or night	Not used	Whether the sun is up that hour: the weather data's day/night flag (live: right now)
Warming	Average of the 5 years around the slider year (fewer at the ends) minus the place's 1950–79 average	The day's average (all 24 readings) minus that calendar date's 1950–79 average from real records

Missing values use a neutral default: cloud 45%, wind 8 km/h, humidity 60%, pressure 1,013 hPa. Missing rain counts as dry, missing sunlight as no sun (no shimmer) and a missing day/night flag as day. Where the data comes from: Decades — the Open-Meteo Climate API (climate model MRI-AGCM3-2-S, daily values 1950–2050), or a pre-built atlas of the same model (about 20 km squares). Local — the Open-Meteo Forecast API. A day — the Historical Weather API (ERA5 reanalysis) for dates more than a week old, the Forecast API for the last week and the next two weeks. The 1950–79 day normals come from the ERA5 records.

LAYER 1 · SET ONCE PER PLACE

2 · Where you are → the piece's identity

Input	Musical parameter	Rule	What you hear
Longitude	**Key (home note)**	Every 30° of longitude moves the key up one semitone: 12 keys around the globe, starting with C at 180°W (bands below).	East–west neighbours sit a semitone apart.
Average temperature (the place's 1950–2050 mean)	**Register**	18°C and up: high — home note in the middle-C octave. 4–18°C: middle, an octave lower. Below 4°C: low, two octaves lower.	Hot places sing high, cold places low: high, cold Lhasa sits two octaves below steamy Singapore.
Latitude	**Scale family**	Under 23.5°: Lydian or Major. 23.5–50°: Dorian or Natural minor. 50° and beyond: Phrygian or Hungarian minor.	Brighter near the equator, darker toward the poles.
Rainfall: the place's median year	**Scale within the family**	400–1,400 mm: the first option (Lydian / Dorian / Phrygian). 1,400 mm and over: the second (Major / Natural minor / Hungarian minor). Under 400 mm the dry-place rule below takes over.	Wet places get the fuller second mood; neighbours in the same key can still differ.
Dryness: the place's median year under 400 mm	**Dry-place scale**	Replaces the two rows above. Below 50° latitude: Pentatonic minor (five notes). At 50° and beyond: Whole tone (six notes, each a whole step apart). Needs the place's century data.	Deserts get a sparse five-note colour; polar deserts a floating, icy whole-tone colour, unlike wet polar places.
Warming reached (the warmest 11-year average so far, minus the 1950–79 average)	**Scale blends darker: dims, then breaks**	Each change is blended in over the 1°C of warming just below it. A Lydian or Major place mixes in Dorian from +1.2°C and is all Dorian at +2.2°C; from +2.2°C any scale mixes in Locrian, the most unstable mode, and is all Locrian at +3.2°C. The mix is a dice roll: each melody note takes the darker scale with a chance equal to how far through the zone the warming is (+1.5°C = 30% Dorian), and each pad chord rolls once for all its notes. Needs the century data. Every mode counts the warmest 11-year average up to the year being heard, so the same year sounds the same in every mode and the mix never moves back. The Scale box shows the mix, e.g. "Lydian → Dorian 78%" (Nairobi, 2050).	Badly warmed places lose their brightness a few notes at a time — like one choir singer drifting flat, then half the choir — and the worst lose their sense of home. Drift the decades (section 8) lets you hear it creep in.
Latitude	**Eeriness, 0 to 1**	= distance from the equator ÷ 90° (0 at the equator, 1 at a pole). Toward the poles it lowers the melody's cloud-filter cutoff (by up to 42%), adds wind noise, makes the reverb wetter, the drones louder and more out of tune with each other, and the melody slightly bell-like even with no warming. Exact amounts: sections 4 and 5.	Darker, wetter, more detuned and more droney toward the poles.
Average temperature	**Where the melody figure starts**	The 12-step figure starts 0–6 steps in, one step per 10°C band, from 0 (below −20°C) to 6 (30°C and up). Uses the place's 1950–2050 average.	Same key and scale, still a different line — like starting a riff on a different beat.

Key bands (home note by longitude): C 180–150°W · C# 150–120°W · D 120–90°W · D# 90–60°W · E 60–30°W · F 30°W–0° · F# 0–30°E · G 30–60°E · G# 60–90°E · A 90–120°E · A# 120–150°E · B 150–180°E.

The six preset places, with their atlas data

Place	Key (home note)	Register (average °C)	Scale (median rain)	Scale in 2050 (warming reached)	Eeriness
Reykjavík (64.15°N, 21.94°W)	F	Middle (4.8)	Phrygian (1,287 mm)	Phrygian (+1.67°C)	0.71
Phoenix (33.45°N, 112.07°W)	D	High (21.6)	Pentatonic minor (dry, 278 mm)	Pentatonic minor → Locrian 24% (+2.44°C)	0.37
Yakutsk (62.03°N, 129.73°E)	A#	Low (−5.5)	Whole tone (dry, 329 mm)	Locrian (+3.83°C)	0.69
Mumbai (19.08°N, 72.88°E)	G#	High (27.1)	Major (3,466 mm)	Major → Dorian 36% (+1.56°C)	0.21
London (51.51°N, 0.13°W)	F	Middle (10.5)	Phrygian (687 mm)	Phrygian (+1.89°C)	0.57
Nairobi (1.29°S, 36.82°E)	G	High (18.7)	Lydian (495 mm)	Lydian → Dorian 78% (+1.98°C)	0.01

Values from the finished climate atlas (1950–2050). Scale in 2050 is what the app's Scale box shows for that year: one scale, or a mix written "old → new, share of notes in the new scale". The mixes begin in Nairobi 2027, Yakutsk 2031, Mumbai and Phoenix 2040; Reykjavík and London don't mix by 2050.

LAYER 2 · COMPUTED ONCE FROM ALL 101 YEARS

3 · The place's century → its character

Number	How it's computed	What it controls
Own average temperature	Mean of all the yearly mean temperatures	Zero point for "warm year / cold year" (melody pitch), the register (18 / 4°C) and where the melody figure starts
Own temperature spread	Warmest yearly mean − coldest yearly mean (at least 0.25°C)	How far a given year counts as warm or cold
1950–79 baseline	Average of the first 30 yearly means (1950–1979)	Zero point for dissonance in Decades
Long-term warming	Average of the last 11 years (2040–2050) − the 1950–79 baseline	Part of Climate drama, and the number shown on the graph (the scale blend uses the warming reached instead: section 2)
Yearly swing	Average of (hottest day − coldest day) across all years	Part of Climate drama
Median rainfall	The middle year's total when the years are sorted from driest to wettest	The scale (section 2); in Local and A day also the dry-hour tempo (section 7)
Climate drama	swing ÷ 26 + warming (counted 0–6°C) ÷ 8, limited to 0.4–3.0. Label: Gentle under 0.8, Moderate under 1.3, Vivid under 1.9, Wild under 2.4, Extreme from 2.4	How far the melody moves between cold and warm years (or hours, in Local and A day)

In Local and A day this layer is used only when the place's 1950–2050 data is at hand (section 7).

LAYER 3 · DECADES · CHANGES AS YOU MOVE THE SLIDER

4 · This year's weather → the sound of the moment

In Decades the slider picks a year from 1950 to 2050 (it opens on 2024). That year's numbers set the sound (how fast each setting follows: section 8):

Weather this year	Sound parameter	Mapping (input range → output range)	What you hear
Mean temperature vs the place's own average	**Melody pitch shift**	warmth = (year mean − own average) ÷ own spread; shift = warmth × Climate drama × 3.5 scale steps, rounded. So the melody moves at most 3.5 × drama steps from the coldest to the warmest year — 10–11 steps (about an octave and a half) at the ×3 maximum. In the five-note Pentatonic minor each step is wider	Warm years lift the melody, cold years lower it. It stays inside the scale, so it never clashes with the drones and pad.
Mean temperature of the 5 years around this one vs the 1950–79 baseline	**Dissonance D, 0 to 1**	warming = average of the 5 yearly means around this one (fewer at the ends) minus the baseline; D follows the S-curve in section 5. Averaging 5 years stops one freak year flicking it on and off	See section 5 — six ways the music sours.
Precipitation	**Tempo (and so note density)**	One scale for every place, by ratio: 50 mm or less → 64 BPM, 3,000 mm or more → 136 BPM, and each doubling of rain adds about 12 BPM. 100 mm → 76 · 250 → 92 · 500 → 104 · 1,000 → 117 · 2,000 → 129	Like octaves on a keyboard: every doubling of rain is the same step faster. Desert years crawl, monsoon years race.
Cloud cover	**Melody brightness (low-pass filter)**	10% → 5,400 Hz, 95% → 460 Hz, then × (1 − 0.42 × eeriness)	Cloudy years sound muffled, like music through a closed door.
Wind speed	**Melody's left/right balance**	1 → 22 km/h moves the "stereo width" setting 0.15 → 0.95. It doesn't widen: the melody reaches this stage as one channel, which the browser treats as left-only, so windier years lean left	Calm years sit near the centre; windy years lean left and sound hollow. A known quirk (section 10).
Wind speed	**Wind noise**	2 → 24 km/h: level 0 → 0.18 (+ 0.07 × eeriness) and band-pass centre 500 → 1,600 Hz	The "wind wash" rises and whistles higher.
Wind speed	**Echo repeats (ping-pong feedback)**	1 → 22 km/h maps to 0.20 → 0.50. The echo time aims for a dotted 8th note of the tempo (0.70 s at 64 BPM, 0.33 s at 136 BPM)	Windier = echoes trail longer, in time with the beat once the echo has caught up.
Humidity	**Reverb amount**	30 → 95% maps to 0.20 → 0.62 wet (+ 0.22 × eeriness, capped at 0.86); 7-second decay	Humid years sound washier, like a damp cathedral.
Pressure	**Drone and sub-bass loudness**	990 → 1,025 hPa: drone A −6 → −16 dB, drone B −7 → −18 dB (+ 4 dB × eeriness); sub-bass level 0.22 → 0.06	Low (stormy) pressure = heavier drones and more rumble.
Sunlight	**Sun shimmer**	2 → 28 MJ/m² maps to a sun level 0.2 → 0.9. Every 6th step the shimmer plays with a chance of (sun level − 0.3) × 0.8, which rises smoothly with no on/off point: none up to about 5.7 MJ/m², 9% at 10, 20% at 15, 31% at 20, 48% from 28 MJ/m². Missing sunlight = no shimmer	Sunnier years sparkle more often, an octave and a fifth above the melody.
Coldest day, hottest day + precipitation	**Snow bells**	Snow-equivalent = precipitation × (frozen share)², where frozen share = how far the coldest day is below 0°C as a share of the year's range (coldest to hottest day). On from 10 mm. Every 3rd step, chance = snow-equivalent ÷ 450 (limited to 10–70%)	Snowy years add glassy bells two octaves above the melody: deep-frozen places ring most, mild wet ones barely (London, Tokyo), hot ones never. They usually thin out as winters warm, though a wetter year can ring more.
Key (layer 1)	**Drone, pad and sub-bass pitch**	Drones and pad one octave below the home note; sub-bass two octaves below. Not moved by the pitch shift	The drones always hum the place's home note.

WARMING VS 1950–79

5 · The dissonance engine

One number, D, measures how much warmer this moment is than the place used to be: 0 at no warming (cooling counts as 0), rising along a smooth S-curve to 1 at +5°C. D sours the music six ways at once — like an orchestra drifting out of tune as the hall overheats. The meter shows D at once; the sound glides after it (section 8).

Effect	What changes
Wrong notes	Each melody note has a $D^2 \times 50\%$ chance to be bent up: a tritone with chance $D \times 70\%$, else a semitone. Soft minor 2nds first; tritones creep in as it worsens
Souring pad	The pad chord's upper two notes (its 3rd and 5th) are raised by D semitones — a smooth bend, up to a full semitone sharp. The root stays put
Metallic tone	Melody FM harmonicity 2 → 3.6 (+ 0.6 × eeriness)
Harshness	Melody FM modulation index 7 → 17
Drone beating	Drone B detuned against drone A: 4 → 55 cents (+ 40 × eeriness)
Grit	Distortion (fixed drive 0.35) mixed in 0 → 0.45, on everything but the sub-bass

The S-curve in numbers

Warming vs 1950–79	0 or cooler	+1°C	+2°C	+3°C	+4°C	+5°C or more
D (the S-curve)	0	0.10	0.35	0.65	0.90	1
Meter word	calm	calm	tense	harsh	harsh	harsh
Wrong-note chance	0%	0.5%	6.2%	21%	40%	50%
… of which tritones	–	7%	25%	45%	63%	70%
Pad souring	0	+10 cents	+35 cents	+65 cents	+90 cents	+100 cents

After the glides catch up. Meter word changes at D = 0.15 (about +1.2°C) and 0.5 (+2.5°C).

The dissonance meter — works without Sound

Display	Driven by	Rule
Dissonance meter	D	Bar = D × 100%, word as above. Text: the warming in °F (or °C after a temperature tap), "5-yr avg vs 1950–79" (Decades) or "vs this date in 1950–79" (Local, A day; a dash until the normal is known)

REAL NUMBERS

6 · Worked example — Yakutsk, Russia (62.03°N, 129.73°E)

Identity: key A# (the low register, from its −5.5°C century average); eeriness 0.69. Latitude picks the Phrygian / Hungarian minor family, but the dry-place rule (median year 329 mm) gives Whole tone. The 1950–79 average (−6.8°C) warms to −2.9°C by the 2040s, +3.8°C, so the scale slides into Locrian over the 1°C below the switch: from 2031, when its warmest 11-year average first passes +2.2°C, 5% of the notes turn Locrian, about half by 2038 (49%), 83% in 2044, and every note from 2045, when it passes +3.2°C. Every mode plays the same year's mix, so Local today (2026, +1.9°C) still plays pure Whole tone. Character: a 73°C swing between the hottest and coldest day pushes Climate drama to the maximum, ×3.00 (Extreme): the melody spans 10 scale steps from the coldest year to the warmest (−4 in 1972 to +6 in 2049).

Setting	1950	2024	2050
Mean temperature	−7.0°C	−5.0°C	−1.4°C
5-yr warming vs 1950–79 → dissonance D	−0.2°C → 0 (calm)	+2.1°C → 0.37 (tense)	+4.6°C → 0.98 (harsh)
Wrong-note chance ($D^2 \times 50\%$)	0%	7%	48%

Setting	1950	2024	2050
Warming reached (warmest 11-yr avg) → scale	`−0.3°C → Whole tone`	`+1.9°C → Whole tone`	`+3.8°C → Locrian`
Melody pitch shift (scale steps)	`−2`	`+1`	`+6`
Precipitation → tempo	`231 mm → 91 BPM`	`464 mm → 103 BPM`	`438 mm → 102 BPM`
Cloud → filter cutoff	`65% → 1,567 Hz`	`69% → 1,381 Hz`	`66% → 1,514 Hz`
Drone B detune (D + eeriness)	`32 cents`	`50 cents`	`82 cents`
Distortion mix	`0`	`0.17`	`0.44`
Snow bells (snow-equivalent)	`on, 16% (73 mm)`	`on, 27% (124 mm)`	`on, 24% (107 mm)`
Sun shimmer (sunlight)	`on, 13% (11.9 MJ/m²)`	`on, 11% (10.7 MJ/m²)`	`on, 12% (11.1 MJ/m²)`
Reverb (humidity 75 / 80 / 79%)	`0.65`	`0.68`	`0.67`

Climate atlas (MRI-AGCM3-2-S, ~20 km cell), computed with the app's own functions

LOCAL · TIME HOP · A DAY

7 · Local and Time Hop days, hour by hour

Local opens where you are and plays the sky right now. A day plays any real date's 24 hours, from 1 January 1940 to two weeks ahead. Both read hourly data, so an hour plays the part a year plays in Decades — like zooming a time-lapse in from a century to a single day.

What	How it works in Local and A day	What you hear
Which hour plays	Local, live: the place's current hour, with the live readings in place of that hour's forecast (new readings every 15 minutes; a reading more than 40 minutes old gives way to that hour's forecast). Tap an hour on the strip or the graph (in A day also the slider) to preview it instead; tap Now or Back to live to return. Play today / Play the day switches Sound on if needed and walks the 24 hours from midnight, 4 s each (about 1.5 minutes); Local then returns to live	The sky right now, or a time-lapse of one day.
Temperature	Melody pitch: warmth = (hour − day's average) ÷ 12°C, the same fixed scale for every day; shift = warmth × Climate drama × 3.5 scale steps, rounded. So the melody moves one step for about every 3.4°C away from the day's average at ×1 drama, every 1.1°C at ×3: a day with a big range climbs further than an even one, and a foggy day with a 0.3°C range stays flat	The melody climbs into the afternoon and sinks at night — measured against the day's own average, so even a freezing day has a "warm" hour. Like a ruler with fixed marks: a desert day with a 17°C swing climbs about 10 steps from 3 AM to 3 PM at Phoenix's ×2.18 drama, a grey 4.5°C day about 2.
Warming	Dissonance D from the day's average minus that calendar date's 1950–79 normal: the average of real ERA5 daily means over those 30 years, using the 15 days centred on the date. One D for the whole day; same S-curve and effects as section 5	A day much warmer than that date used to be sounds soured all day long.
Rain	Tempo = the place's dry pace + a lift for the hour's rain. Dry pace from the place's median year of rain (section 3): 50 mm or less → 64 BPM, 3,000 mm or more → 96, each doubling about 5.4 BPM faster (Phoenix 77, Yakutsk 79, London 84.5, Reykjavík 89, Singapore 95, Mumbai 96). Rain lift: each doubling of the hour's rain adds about 5.6 BPM, from +0 at 0.05 mm/h or less to +48 at 20 mm/h or more. So 1 mm/h plays Phoenix 101, London 108.5, Singapore 119	A dry hour ambles at the place's own pace — desert towns slower than rainforest towns — and rain speeds it up, like a walker breaking into a jog.
Snowfall	Snow bells use the real snowfall: on whenever it snows that hour; chance = 15% + 50% × cm per hour (limited to 10–70%), every 3rd step	Bells only while it is actually snowing.

What	How it works in Local and A day	What you hear
Sunlight	The hour's own W/m² on its own scale: 0 → 800 W/m² maps to a sun level 0.2 → 0.9 (800 and up = full sun), then the same smooth shimmer chance as Decades (section 4): none up to about 114 W/m², 6% at 200, 20% at 400, 34% at 600, 48% from 800, every 6th step. Missing sunlight = no sun	The sparkle follows the sun's height: a low winter sun or a cloudy sky sparkles rarely, a high summer sun often; never at night.
Day or night	The weather data's day/night flag for that hour. In an hour with the sun down, each off-beat melody note (every second 16th) is dropped with a 70% chance, so about 35% of the melody goes, while every on-beat note plays and the pulse stays. Pad, snow bells, shimmer and the scale are untouched. The thinning fades in and out in about 3 s (section 8). Decades never thins	After sunset the melody thins to a sparser line, so day length is heard: a June night in Reykjavík lasts a few hours, a polar night thins every hour.
Cloud, wind, humidity, pressure	Same rules as Decades (section 4), with that hour's values	Same as Decades, hour by hour.
Key, register, scale, eeriness	Same as Decades, with the scale mix of the day's year. The century-based parts need this place's 1950–2050 data (from the finished atlas, or saved on this device by an earlier Decades visit). Until it is at hand: register by latitude (within 30° high, 30–55° middle, beyond 55° low); the scale family's first or second option alternating every 60° of longitude from 180°W; no dry-place scale and no warming blend; Climate drama ×1; a 70 BPM dry pace; and the melody figure starting from the day's average temperature	Until its century is known, a place can play a different scale here than in Decades.

Until the normal is known, D is 0 (calm) and the meter shows a dash. A first visit to a place downloads 30 years of daily records, which can take about 30 s; after that the normals are kept on this device and fill in at once. If the download fails (this site first gives a stalled or failed connection one more try), the app won't try again for 5 minutes (after the service's daily limit: not until the viewer's next calendar day), and then only when a day is opened again or at Local's hourly forecast refresh. Until then the day stays calm.

WHEN THINGS CHANGE

8 · Timing and glides

Most settings don't jump when the data changes: they slide to the new value, like a fader moved by hand rather than a switch.

What	How it moves to a new value
Tempo, left/right tilt, echo repeats, reverb	Glide over 1.5 s
Cloud filter	Glide over 1.8 s
Wind noise (level and colour), drone loudness, sub-bass level, drone and sub pitch	Glide over 2 s
Drone beating, distortion mix	Glide over 3 s, straight toward the new D
Wrong notes, tritone share, FM tone (harmonicity and index), pad souring	Follow a gliding copy of D with a 4-s time constant, counted in real seconds so the tempo can't change it: 90% of the way in about 9 s. The FM tone retunes every beat; the pad takes the new value at the next bar's chord
Night thinning (Local, A day)	Fades in or out in about 3 s
Echo time	Aims for a dotted 8th of the tempo. Two echo lines take turns: the idle one is retuned while silent, then the feed crossfades to it over 0.5 s — like a relay runner handing over the baton, so echoes never bend in pitch. At most one handover every 6 s
Melody pitch shift, snow bells, sun shimmer	No glide: the next 16th note uses the new value
Key, register, scale, melody start	Change when a place (or its century data) loads (without century data the melody start also follows each new day's average); the drones and sub-bass slide to a new key over 2 s. The scale mix also follows the year being heard and glides to each new year's mix in about a second; a new place jumps straight to its own mix
Meter, globe, graph	At once (the meter bar slides over 0.6 s)

What	How it moves to a new value
Sound on / off	On: starts straight at this place's own sourness, scale mix and day or night, and the master fades in over 0.3 s. Changing place, date or mode while Sound plays glides the sourness over from the old place (section 10); the scale mix jumps straight to the new place's own. Off: the master fades out over 0.25 s and the clock stops, but Drift and Play keep moving the year or hour, meter and globe silently

Drift the decades (Decades only) plays 1950 → 2050 at one year every 0.28 s, about 28 seconds for the century. It plays 1950 too, starting from 1950's own sourness and scale mix, switches Sound on if needed, and stops at 2050 or when you touch the slider or graph (turning Sound off doesn't stop it). Each year is too short for the glides to keep up: the sourness runs roughly a decade behind the year and meter on screen and keeps getting harsher for about 9 s after Drift stops; the weather glides (1.5–2 s) trail about 5–7 years, which smooths the year-to-year jumps; and the echo, retuned at most every 6 s, is often slightly off the beat. In Play today / Play the day (4 s per hour) the dissonance lag doesn't arise: D stays the same all day, and the night thinning's 3-s fade fits inside one walk hour.

SAME EVERYWHERE

9 · The fixed parts (not driven by data)

Part	What it is
Instruments	FM melody synth (16th notes) · AM pad (one chord per bar) · two sawtooth drones that breathe on 17- and 23-second cycles · sine sub-bass · pink-noise wind bed · triangle snow bells · sine sun shimmer
Melody figure	A 12-step pattern over scale degrees 0 2 4 2 5 4 7 4 2 0 3 2, started 0–6 steps in (section 2). Every 12 steps it alternates between the home register and one octave up (a whole scale's worth of degrees, so a true octave in every scale)
Pad chord	Scale degrees 1, 3 and 5 (a triad), one octave below the home note, struck once per bar (2.5-s attack, 4-s release). Major in Lydian and Major places; minor in Dorian, Natural minor, Phrygian and Hungarian minor; diminished in Locrian; augmented in Whole tone. In Pentatonic minor the same degrees give root, 4th and minor 7th — an open, suspended sound.
Feel	Note loudness varies randomly (0.35–0.65); a melody note more than three octaves above or below middle C moves by whole octaves, so it stays in key
Buttons	Sound on / off fades the master in or out. Tapping a temperature in the readout, the day card or under the time bar switches °C / °F (and km/h / mph) in every mode; the music always runs in °C, so this never changes the sound. Save this moment keeps a place and date on this device only; it doesn't change the sound

HONEST NOTES

10 · Known quirks in the current build

Things in the code that don't do quite what their names suggest, or that a listener might not expect.

- Changing place, date or mode while Sound plays carries the old sourness over. Only pressing Sound on jumps the dissonance glide to the new place; otherwise it glides over (90% in about 9 s), so a calm place can sound soured for several seconds after a harsh one. The scale mix doesn't carry over: a new place jumps straight to its own.
- Wind "stereo width" doesn't widen: the melody reaches it as one left-only channel, so windier years lean left and the right fades to near silence somewhere between about 13 and 22 km/h. The lean is mildest in low-humidity places near the equator.
- Hourly tempo mixes two things: how wet the place is and whether it is raining now. Inside one place rain always speeds the music up, but across places a dry hour in Singapore (95 BPM) plays as fast as Phoenix in light rain (about 0.45 mm/h).
- Hourly dissonance waits for the 1950–79 normals: on a first visit the day plays calm (meter shows a dash) until they arrive. If the download fails (after this site's retry of a stalled or failed connection) it stays calm until a day is opened again or Local's hourly refresh.
- Blend leaps: when a 5- or 6-note scale (Pentatonic minor, Whole tone) mixes with 7-note Locrian, each scale counts the melody's steps by its own size, so a borrowed note can land up to 16 semitones from where the other scale would put it. Dry places such as Phoenix, Las Vegas and Yakutsk leap around while they blend. This may change in a later build.