FlowTrack Data Model (MVP)

1. Session Fields (Human-Level Spec)

Pulled from the End Goal/vision and the flow physiology research, focusing on what's needed to make flow **measurable, trainable, and explainable for *you***.

End goal

Building Your Flow Operating Sy…

1.1 Field List

Legend:

- **Ratings** are 0–10 `int` unless otherwise noted
- "Derived/computed" = best handled in queries / generated columns, not manually logged
- "Nice-to-have / v2+" is explicitly labeled

field_name	label	description	data_type	example_value	required (MVP)
date	Session Date	Calendar date of the session (used to join with `daily_physio`). Typically derived from `start_time` but stored explicitly for easy querying.	`date`	`2025-11-24`	yes
start_time	Session Start Time	Timestamp when focused work/flow attempt starts.	`timestamptz`	`2025-11-24 07:30:00+03`	yes
end_time	Session End Time	Timestamp when session ends. Can be null if user logs mid-session (but ideally filled).	`timestamptz`	`2025-11-24 09:00:00+03`	yes (for "complete" sessions)
session_duration_min	Session Duration (min)	Total minutes between start and end. **Derived/computed** from timestamps; useful for metrics (e.g., "90-min ultradian blocks").	`int`	`90`	no (derived)
activity	Activity / Task Name	Short description of what you worked on.	`text`	`Draft FlowTrack data model`	yes
task_type	Task Type / Domain	Category or domain of work (writing, coding, planning, study, etc.).	`text`	`Writing`	no

field_name	label	description	data_type	example_value	required (MVP)
goal	Immediate Goal	Clear, proximal goal for this block (supports flow trigger “clear goals”). Building Your Flow Operating Sy…	text	Write section 1 of data model	yes
planned_duration_min	Planned Duration (min)	Intended length of this block, to support constraint/time-pressure triggers.	int	90	no
session_tags	Tags / Labels	Free-form or comma-separated tags (e.g., “client_work, high_stakes”).	text	deep_work, high_importance	no
session_was_planned	Planned vs Ad-hoc	Whether this session was planned in advance or spontaneous.	boolean	true	no

Pre-session internal state

field_name	label	description	data_type	example_value	required
pre_sleep_quality_rating	Sleep Quality (Subjective)	How good last night’s sleep *felt* on 0–10, regardless of tracked metrics (captures subjective effects at session level). End goal	int	7	yes
pre_mood	Mood (Label)	Short mood description before starting (happy, flat, anxious, etc.).	text	slightly anxious	no
pre_energy_rating	Energy Level	Subjective energy before starting.	int	6	yes
pre_stress_rating	Stress Level	Perceived stress/tension before starting (maps to LC-NE / flow window). Building Your Flow Operating Sy…	int	4	yes
pre_distraction_risk_notes	Distraction Risk Notes	Any known risks (phone nearby, noisy house, travel day, etc.).	text	Phone on desk, Slack open on laptop	no

Environment & context

field_name	label	description	data_type	example_value	required
environment_location	Location	General location of work (home office, café, coworking, etc.).	text	Home office	yes

field_name	label	description	data_type	example_value	required
environment_noise_level_rating	Noise Level	Subjective noise level in environment (0 = silent, 10 = very noisy).	`int`	`3`	no
environment_music_type	Music / Sound	What you listened to, if anything (silence, white noise, focus playlist, etc.).	`text`	`Lo-fi focus playlist`	yes (if relevant; empty if silence)
environment_richness_notes	Environmental Richness / Novelty	Notes on novelty/complexity/risk in environment (e.g., new place, time pressure, public setting). Supports environmental triggers. Building Your Flow Operating Sy…	`text`	`New café, public seating near window`	no
pre_ritual_steps	Pre-session Ritual	What you did right before starting (planning, breathing, warm-up set, etc.). End goal	`text`	`2-min physiological sigh + 3-min planning`	yes

Challenge / skill & task framing

field_name	label	description	data_type	example_value	required
subjective_difficulty_rating	Challenge Level	How hard the task felt before/at start (0 = trivial, 10 = impossible).	`int`	`7`	yes
subjective_skill_rating	Skill Level	Your perceived skill relative to this task (0 = noob, 10 = expert).	`int`	`6`	no
challenge_skill_balance_notes	Challenge–Skill Notes	Short note on balance (under-challenged, sweet spot, overwhelmed).	`text`	`Slightly above comfort zone, good stretch`	no

Flow characteristics (session-level)

These reflect key phenomenological markers of flow (intensity, time distortion, enjoyment, control, ego quieting).

Building Your Flow Operating Sy…

field_name	label	description	data_type	example_value	required
flow_intensity_rating	Flow Intensity	Overall strength of flow experience during session (0 = none, 10 = very strong).	`int`	`8`	yes

field_name	label	description	data_type	example_value	required
time_distortion_rating	Time Distortion	Degree to which time felt distorted (0 = normal, 10 = extreme distortion).	`int`	`9`	yes
enjoyment_rating	Enjoyment	How enjoyable/autotelic the work felt (activity for its own sake).	`int`	`8`	yes
sense_of_control_rating	Sense of Control	Subjective sense of control/agency over task and outcome.	`int`	`7`	no
inner_critic_quietness_rating	Inner Critic Quietness	How quiet the self-critical voice felt (0 = very loud, 10 = fully quiet).	`int`	`8`	yes
action_awareness_merging_rating	Action–Awareness Merge	Degree to which "doer and doing" felt merged (classic flow dimension).	`int`	`7`	nice-to-have / v2+
clarity_of_goals_rating	Goal Clarity	How clear the goals felt during the block.	`int`	`8`	nice-to-have / v2+
feedback_immediacy_rating	Feedback Immediacy	How quickly you got feedback on progress (compiler, draft, visual, etc.).	`int`	`7`	nice-to-have / v2+

Performance metrics

field_name	label	description	data_type	example_value	required
output_quality_rating	Output Quality	Self-rated quality of the output of this session (0–10).	`int`	`7`	yes
output_quantity_description	Output Quantity (Description)	Free-form description of what got done (pages, words, tasks, etc.).	`text`	`Wrote ~1,500 words and finalized the schema outline`	yes
goal_achieved	Goal Achieved?	Whether the main session goal was achieved.	`boolean`	`true`	no
session_effectiveness_notes	Effectiveness Notes	Short judgment of effectiveness ("great progress", "lots of rework", etc.).	`text`	`High quality, but slower than expected`	no

Resilience metrics (drop-in, distractions, recovery)

field_name	label	description	data_type	example_value	required
drop_in_time_min	Drop-in Time (min)	Minutes from start until you first felt "in the zone".	`int`	`18`	yes
flow_reached	Flow Reached?	Whether you *ever* reached flow in this block (even briefly).	`boolean`	`true`	yes

field_name	label	description	data_type	example_value	required
distractions_count	# of Distractions	Number of meaningful distractions (phone, people, apps, etc.).	`int`	`3`	yes
recovered_from_distractions	Recovered After Distractions?	Whether you successfully re-entered flow / strong focus after being distracted (at least once).	`boolean`	`true`	yes
recovery_attempts_count	# Recovery Attempts	How many times you consciously tried to recover (close apps, breathe, etc.).	`int`	`2`	no
recovery_quality_rating	Recovery Quality	How effective your recovery felt overall.	`int`	`6`	nice-to-have / v2+
main_distraction_types	Main Distraction Types	Text list of primary distraction sources.	`text`	`WhatsApp, email, kitchen noise`	no
session_end_reason	End Reason	Why you stopped (timer, fatigue, external interruption, finished, etc.).	`text`	`Block complete, mental fatigue rising`	no

Flow triggers & killers (session-specific)

field_name	label	description	data_type	example_value	required
flow_triggers_used	Flow Triggers Used	Which triggers were intentionally used (clear goals, novelty, risk, deep embodiment, social, etc.). Building Your Flow Operating Sy…	`text`	`Clear goals, time-box (risk), music, novelty (new location)`	yes (free-text)
flow_killers_observed	Flow Killers Observed	Conditions that clearly harmed flow (notifications, multi-tasking, low sleep, etc.). End goal	`text`	`Phone notifications, unplanned Slack messages`	yes

Reflection & learning

field_name	label	description	data_type	example_value	required
what_helped_notes	What Helped	Free-text reflection on what supported flow/performance in this session.	`text`	`Physiological sigh + clear start note helped a lot`	yes
what_hurt_notes	What Hurt	What made flow harder (internal or external).	`text`	`Started with inbox; wasted first 15 min`	yes
tweak_next_time_notes	Tweak for Next Time	Concrete tweak to try in the next similar block (core for self-experiment loop).	`text`	`Start directly in editor, inbox after block`	yes

2. Daily Physiology Fields (Human-Level Spec)

These are logged once per day (usually morning) from your Garmin / watch app plus subjective notes, to provide context for that day's sessions.

End goal

2.1 Field List

field_name	label	description	data_type	example_value	required (MVP)
date	Date	Calendar date this physio data refers to.	`date`	`2025-11-24`	yes
hrv_ms	HRV (ms)	Morning readiness / average HRV in milliseconds from Garmin (or similar).	`numeric`	`74.5`	yes
		Building Your Flow Operating Sy…			
sleep_duration_min	Sleep Duration (min)	Total sleep time in minutes for the previous night.	`int`	`435`	yes
sleep_score	Sleep Score	Device-provided sleep score (0–100 or device scale).	`int`	`83`	yes
resting_hr_bpm	Resting HR (bpm)	Resting heart rate on waking / daily baseline in beats per minute.	`int`	`58`	no
stress_score	Stress Score	Daily or morning stress score from device (scale defined by app).	`int`	`32`	no
subjective_readiness_rating	Readiness (Subjective)	0–10 rating of how "ready" you feel for deep work today (resilience proxy).	`int`	`7`	yes
sickness_flag	Sick / Run Down	Whether you're sick or clearly under the weather.	`boolean`	`false`	no
physio_notes	Physio Notes	Free-text context (travel, heavy training, poor sleep, jet lag, etc.).	`text`	`Late-night flight, minor sore throat`	yes
physio_source	Data Source	Where these numbers came from (Garmin, Oura, manual, etc.).	`text`	`Garmin`	no

> You can later **derive** metrics like HRV z-scores, rolling averages, or HRV–sleep composites purely in queries; no need to store them as columns for MVP.

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3. Database Schema (Tables & Columns)

MVP schema using three core tables:

- `sessions`

- `daily_physio`
- `flow_recipes`

All tables:

- Use `uuid` primary keys
- Include `user_id` (FK → `auth.users.id`)
- Use `timestamptz` for creation timestamps
- Include a `date` column where we need easy joins

3.1 `sessions` table

column_name	data_type	constraints	description	example_value
id	`uuid`	`PRIMARY KEY, DEFAULT gen_random_uuid()`	Unique identifier for the session.	`e6d0…-…`
user_id	`uuid`	`NOT NULL, REFERENCES auth.users(id) ON DELETE CASCADE`	Owner of this session.	`f123…-…`
created_at	`timestamptz`	`NOT NULL, DEFAULT now()`	When this row was created in DB.	`2025-11-24 09:10:00+03`
date	`date`	`NOT NULL`	Calendar date of session (for joining to `daily_physio`); usually derived from `start_time`.	`2025-11-24`
start_time	`timestamptz`	`NOT NULL`	When the focused block started.	`2025-11-24 07:30:00+03`
end_time	`timestamptz`	nullable	When the session ended (nullable while in-progress).	`2025-11-24 09:00:00+03`
session_duration_min	`int`	optional; can be `GENERATED ALWAYS AS (...) STORED`	Duration in minutes (`end_time - start_time`). **Derived/computed** convenience.	`90`
activity	`text`	`NOT NULL`	Short description of what you worked on.	`Draft FlowTrack data model`
task_type	`text`		Category/domain (writing, coding, planning, etc.).	`Writing`
goal	`text`	`NOT NULL`	Proximal goal for the block.	`Write session fields section`
planned_duration_min	`int`		Intended block length; supports constraint/time-pressure triggers.	`90`
session_tags	`text`		Free-form tags (comma-separated).	`deep_work, high_importance`

column_name	data_type	constraints	description	example_value
session_was_planned	boolean	DEFAULT false	Whether this block was planned in advance.	true
pre_sleep_quality_rating	int		Subjective sleep quality (0–10).	7
pre_mood	text		Mood label before starting.	slightly anxious
pre_energy_rating	int		Subjective energy (0–10).	6
pre_stress_rating	int		Subjective stress (0–10).	4
pre_distraction_risk_notes	text		Notes on likely distractions.	Phone on desk, Slack open
environment_location	text	NOT NULL	Location (home office, café, etc.).	Home office
environment_noise_level_rating	int		Subjective noise level (0–10).	3
environment_music_type	text		Music/sound used or silence.	Lo-fi beats
environment_richness_notes	text		Notes on novelty, complexity, or risk in environment.	New café, lots of visual motion
pre_ritual_steps	text		Pre-session ritual details (breathing, planning, etc.).	3-min planning + 2 physiological sighs
subjective_difficulty_rating	int	NOT NULL	Challenge level (0–10).	7
subjective_skill_rating	int		Skill relative to task (0–10).	6
challenge_skill_balance_notes	text		Notes on under/over-challenge.	Slightly above comfort zone
flow_intensity_rating	int	NOT NULL	Overall flow intensity (0–10).	8
time_distortion_rating	int	NOT NULL	Time distortion (0–10).	9
enjoyment_rating	int	NOT NULL	Enjoyment/autotelic feeling (0–10).	8
sense_of_control_rating	int		Sense of control (0–10).	7
inner_critic_quietness_rating	int	NOT NULL	Inner critic quietness (0–10).	8
action_awareness_merging_rating	int		Action–awareness merge (0–10). Nice-to-have / v2+.	7
clarity_of_goals_rating	int		Clarity of goals (0–10).	8

column_name	data_type	constraints	description	example_value
feedback_immediacy_rating	int		Immediacy of feedback (0–10).	7
output_quality_rating	int	NOT NULL	Self-rated output quality (0–10).	7
output_quantity_description	text	NOT NULL	Description of what got done.	~1,500 words, schema draft
goal_achieved	boolean		Whether main goal was achieved.	true
session_effectiveness_notes	text		Extra context on effectiveness (rework, blocked, etc.).	Good quality, slower pace
drop_in_time_min	int		Minutes until first felt “in the zone”.	18
flow_reached	boolean	NOT NULL	Did you reach flow at all in this session?	true
distractions_count	int	NOT NULL	Number of significant distractions.	3
recovered_from_distractions	boolean	NOT NULL	Did you successfully recover at least once after distraction?	true
recovery_attempts_count	int		# of deliberate recovery attempts.	2
recovery_quality_rating	int		Overall quality of recovery (0–10).	6
main_distraction_types	text		Main types of distractions (free-text list).	WhatsApp, email, kitchen noise
session_end_reason	text		Why the session ended (timer, fatigue, interruption, etc.).	Timer end, mental fatigue
flow_triggers_used	text	NOT NULL	Triggers used (clear goals, time pressure, music, novelty, etc.).	Clear goals, time-box, music
flow_killers_observed	text	NOT NULL	Flow killers that showed up.	Phone notifications
what_helped_notes	text	NOT NULL	Reflection: what helped flow/performance.	Breathing + clear start note
what_hurt_notes	text	NOT NULL	Reflection: what hurt flow/performance.	Checking email during first 15 min

column_name	data_type	constraints	description	example_value
tweak_next_time_notes	`text`	`NOT NULL`	Concrete tweak for next time.	`Start directly in editor, postpone email`

3.2 `daily_physio` table

column_name	data_type	constraints	description	example_value
id	`uuid`	`PRIMARY KEY`, `DEFAULT gen_random_uuid()`	Unique identifier for daily physio record.	`a5b1…-…`
user_id	`uuid`	`NOT NULL`, `REFERENCES auth.users(id) ON DELETE CASCADE`	Owner of this record.	`f123…-…`
created_at	`timestamptz`	`NOT NULL`, `DEFAULT now()`	When this row was created.	`2025-11-24 07:00:00+03`
date	`date`	`NOT NULL`, `UNIQUE (user_id, date)`	Date the physio data belongs to (join key with `sessions`).	`2025-11-24`
hrv_ms	`numeric`		Morning HRV in milliseconds.	`74.5`
sleep_duration_min	`int`		Sleep duration in minutes.	`435`
sleep_score	`int`		Device sleep score (0–100).	`83`
resting_hr_bpm	`int`		Resting heart rate in bpm.	`58`
stress_score	`int`		Daily/morning stress score from device.	`32`
subjective_readiness_rating	`int`	`NOT NULL`	How ready you *feel* for deep work (0–10).	`7`
sickness_flag	`boolean`	`DEFAULT false`	Whether you're sick/run down.	`false`
physio_notes	`text`	`NOT NULL`	Context notes (travel, training, illness, etc.).	`Late-night flight, bit groggy`
physio_source	`text`		App/source of data (Garmin, Oura, manual).	`Garmin`

3.3 `flow_recipes` table

Represents your **current best hypothesis** about how to engineer flow for yourself — versioned over time.

End goal

column_name	data_type	constraints	description	example_value
id	`uuid`	`PRIMARY KEY`, `DEFAULT gen_random_uuid()`	Unique identifier for each recipe version.	`c7aa…-…`

column_name	data_type	constraints	description	example_value
user_id	uuid	NOT NULL, REFERENCES auth.users(id) ON DELETE CASCADE	Owner of this recipe.	f123…-…
created_at	timestamptz	NOT NULL, DEFAULT now()	When this recipe version was created.	2025-11-24 19:00:00+03
version	int	NOT NULL, e.g. UNIQUE (user_id, version)	Recipe version number.	3
effective_from	date		Date from which you consider this recipe “active”.	2025-11-25
is_active	boolean	NOT NULL, DEFAULT false	Whether this is the current active recipe.	true
best_time_windows	text	NOT NULL	Description of best time(s) of day for deep work.	Weekdays 07:30–10:30, Saturdays 11:00–13:00
ideal_session_length_min	int		Ideal block length (e.g., 60–90 minutes).	90
preferred_environment	text		Environment details (location, noise, lighting).	Quiet home office, moderate light, standing desk
pre_ritual_steps	text		Step-by-step pre-session ritual.	Physiological sigh ×2, 3-min NSDR fragment, plan next step in note
optimal_challenge_range	text		Description of optimal subjective difficulty range (e.g., “6–7/10”).	Aim for difficulty 6–7/10; avoid 3–4 and 9–10
reliable_triggers	text		Triggers that consistently work (clear goals, time-box, environmental novelty, etc.).	Clear 90-min goal, timer, lo-fi music, phone in another room
flow_killers	text		Known flow killers to avoid.	Notifications, context switching <30 min, late-night sessions
recovery_strategies	text		Strategies that restore capacity after flow (NSDR, walks, social time, etc.).	10–20 min NSDR, 10-min walk, no phone
notes	text		Extra notes/lessons for future self.	Avoid back-to-back high-stakes blocks; schedule admin after flow

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4. SQL DDL (Supabase / Postgres)

```
-- Enable pgcrypto for gen_random_uuid if not already enabled CREATE EXTENSION
IF NOT EXISTS pgcrypto; -- sessions CREATE TABLE public.sessions ( id uuid
```

```
PRIMARY KEY DEFAULT gen_random_uuid(), user_id uuid NOT NULL REFERENCES
auth.users (id) ON DELETE CASCADE, created_at timestamptz NOT NULL DEFAULT
now(), date date NOT NULL, start_time timestamptz NOT NULL, end_time
timestamptz, -- optional generated duration; you can omit or comment this out
for pure-MVP session_duration_min int GENERATED ALWAYS AS ( CASE WHEN end_time
IS NOT NULL THEN (EXTRACT(EPOCH FROM (end_time - start_time)) / 60)::int ELSE
NULL END ) STORED, activity text NOT NULL, task_type text, goal text NOT NULL,
planned_duration_min int, session_tags text, session_was_planned boolean NOT
NULL DEFAULT false, pre_sleep_quality_rating int, pre_mood text,
pre_energy_rating int, pre_stress_rating int, pre_distraction_risk_notes text,
environment_location text NOT NULL, environment_noise_level_rating int,
environment_music_type text, environment_richness_notes text, pre_ritual_steps
text, subjective_difficulty_rating int NOT NULL, subjective_skill_rating int,
challenge_skill_balance_notes text, flow_intensity_rating int NOT NULL,
time_distortion_rating int NOT NULL, enjoyment_rating int NOT NULL,
sense_of_control_rating int, inner_critic_quietness_rating int NOT NULL,
action_awareness_merging_rating int, clarity_of_goals_rating int,
feedback_immediacy_rating int, output_quality_rating int NOT NULL,
output_quantity_description text NOT NULL, goal_achieved boolean,
session_effectiveness_notes text, drop_in_time_min int, flow_reached boolean NOT
NULL, distractions_count int NOT NULL, recovered_from_distractions boolean NOT
NULL, recovery_attempts_count int, recovery_quality_rating int,
main_distraction_types text, session_end_reason text, flow_triggers_used text
NOT NULL, flow_killers_observed text NOT NULL, what_helped_notes text NOT NULL,
what_hurt_notes text NOT NULL, tweak_next_time_notes text NOT NULL ); -- Index
to speed up common queries by user/date CREATE INDEX sessions_user_date_idx ON
public.sessions (user_id, date); -- daily_physio CREATE TABLE
public.daily_physio ( id uuid PRIMARY KEY DEFAULT gen_random_uuid(), user_id
uuid NOT NULL REFERENCES auth.users (id) ON DELETE CASCADE, created_at
timestamptz NOT NULL DEFAULT now(), date date NOT NULL, hrv_ms numeric,
sleep_duration_min int, sleep_score int, resting_hr_bpm int, stress_score int,
subjective_readiness_rating int NOT NULL, sickness_flag boolean NOT NULL DEFAULT
false, physio_notes text NOT NULL, physio_source text, CONSTRAINT
daily_physio_user_date_uniq UNIQUE (user_id, date) ); CREATE INDEX
daily_physio_user_date_idx ON public.daily_physio (user_id, date); --
flow_recipes CREATE TABLE public.flow_recipes ( id uuid PRIMARY KEY DEFAULT
gen_random_uuid(), user_id uuid NOT NULL REFERENCES auth.users (id) ON DELETE
CASCADE, created_at timestamptz NOT NULL DEFAULT now(), version int NOT NULL,
effective_from date, is_active boolean NOT NULL DEFAULT false, best_time_windows
text NOT NULL, ideal_session_length_min int, preferred_environment text,
pre_ritual_steps text, optimal_challenge_range text, reliable_triggers text,
flow_killers text, recovery_strategies text, notes text, CONSTRAINT
flow_recipes_user_version_uniq UNIQUE (user_id, version) ); CREATE INDEX
flow_recipes_user_active_idx ON public.flow_recipes (user_id, is_active);
```

This markdown should drop straight into `docs/data_model.md`, and the SQL should be directly usable in Supabase (or via migrations) to stand up your MVP backend.