🌅 1. Time as Experience: The Beginnings

The perception of time is likely as old as humanity itself.
For the earliest cultures, time was primarily *cyclical*:

- the alternation of day and night,
- the phases of the Moon,
- the cycle of the seasons,
- the growth and decay of plants.

All of these suggested that time had a *circular, recurring* nature.
The idea of *linear*, arrow-like time — time with a clear beginning and end — appeared much later, especially with the rise of monotheistic religions (most notably in the Judeo-Christian tradition).

🏺 2. Measuring Time: The Mesopotamian Legacy

The history of time measurement is deeply connected to astronomy.

Babylon and the Base-60 System

- The division of time that we still use today (60 seconds = 1 minute, 60 minutes = 1 hour) originates from ancient Babylon, around 2000 BCE.
- The Babylonians used a *sexagesimal* (base-60) numeral system, because 60 is highly divisible by 2, 3, 4, 5, 6, 10, 12, 15, 20, and 30 — a practical advantage for astronomical calculations.
- They divided the sky into 360 degrees (6×60), which also stems from this system.

The Division of the Day

- The Egyptians were the first to divide the day into 24 parts: 12 hours for daylight and 12 for the night, based on the movement of stars.
- The term *hour* (Latin *hora*, Greek *hóra*) therefore has astronomical origins.
- The ideas of *minute* and *second* appeared later, with medieval astronomers: *pars minuta prima* (“the first small part of the hour”) and *pars minuta secunda* (“the second small part”).

⏳ 3. The Philosophical Dimension of Time: Between Existence and Consciousness

The Ancient Greeks

- *Heraclitus*: “You cannot step into the same river twice.” → Time as a river, symbol of constant change.
- *Plato*: Time is the “moving image of eternity” (*Timaeus*) — a reflection of cosmic order within an imperfect world.
- *Aristotle*: Time is the measure of motion, defined by “before” and “after.”

Christian Thought

- *Saint Augustine* (4th–5th c.): time is not external, but within the soul.

- The *past* lives in memory,
- the *future* in anticipation,
- and the *present* in attention.
  This is one of the earliest *phenomenological* views of time.

Eastern Philosophies

- In Hindu and Buddhist traditions, time is infinite and cyclical — expressed in the *kalpa*, the great cosmic ages.
  Here, time is not linear but part of the endless repetition within the fabric of *saṃsāra*.

🕰️ 4. The Technology of Time: From Sundials to Atomic Clocks

- **Sundials** – the first man-made instruments to measure time, using the shadow cast by the Sun's position.
- **Water clocks and hourglasses** – based on the steady flow of a material substance.
- **Mechanical clocks** – emerged in 13th-century Europe, mainly in monasteries, to regulate prayer times.
- **Pendulum clocks** (17th c., Christiaan Huygens) – revolutionized accuracy.
- **Quartz clocks** (20th c.) – based on the vibration of quartz crystals under electrical current.
- **Atomic clocks** (1950s) – use the vibrations of cesium atoms; their accuracy is within a few billionths of a second per year.

🧠 5. The Scientific View of Time: From Relativity to Quantum Uncertainty

Newtonian Time – the Absolute Flow

- In classical physics, time was seen as an **absolute, universal flow**: identical everywhere, independent of matter or motion.
- Isaac Newton described it as a container in which events happen — "absolute, true, and mathematical time."

Einstein's Revolution – Time as Relative

- Einstein's *Theory of Relativity* (1905–1915) overturned this view.
- Time is no longer absolute, but **relative to the observer's motion and gravity**.
  - The faster you move, the slower your time flows.
  - Near massive bodies (like stars or black holes), time literally slows down.
    → Space and time form a single, woven fabric: **spacetime**.

Quantum Time – Probabilities and Uncertainty

- In quantum physics, time becomes even stranger:

- Some interpretations suggest that, at the smallest scales, time may **not be continuous** but **discrete**.
- Others imply that time might *emerge* from entanglement and relationships between particles, rather than being fundamental.

- Thus, modern physics doesn't fully agree on what time *is* — only on how it behaves.

💭 6. Time in the 20th and 21st Centuries: Experience, Perception, and Power

Philosophy and Psychology of Time

- *Henri Bergson* (early 1900s): distinguished between **mathematical time** (the measurable kind) and **lived duration** (*durée*) — the flowing, qualitative time of consciousness.
- *Martin Heidegger* saw time as the very condition of human existence: we are beings *thrown into time*, defined by our awareness of finitude.
- *Hannah Arendt*, *Maurice Merleau-Ponty*, and later *Hartmut Rosa* expanded this to a social level: the sense that modern life accelerates, while meaning decays.

Technological and Social Time

- The industrial revolution introduced *clock-time* — mechanical, standardized, external.
- The digital revolution introduced *algorithmic time* — fragmented, personalized, and invisible.
- In today's attention economy, **time is capital**: our value is measured in clicks, views, and engagement time.

Postmodern and Artistic Perspectives

- Artists began to explore time as **material**:
  - performance art → presence and duration,
  - video art → the loop and delay,
  - installation → spatialized time experience.
- The postmodern condition questions whether linear progress still exists — or if we live in a permanent *now*, endlessly refreshed and archived.

⚙️ 7. Time as Control and Power

Throughout history, whoever **controlled time** also controlled people.

Religious Time – Sacred Authority

- In medieval Europe, time was regulated by the **Church**: bells marked prayers, fasting, and holy days.
- The rhythm of daily life was therefore tied to the rhythm of divine order.

Industrial Time – Discipline and Productivity

- The factory system transformed time into a unit of labor.

- “Time is money” — a phrase that turned duration into value.
- Punctuality became moral; lateness, a form of failure.
- The mechanical clock wasn’t just a tool — it was an *instrument of discipline*.

Global Time – Political Centralization

- The 19th-century introduction of **time zones** and the **Greenwich Meridian** established a world clock centered in the British Empire.
  → Time became a geopolitical tool, a symbol of modernity and control.

Digital Time – Algorithmic Governance

- Today, time is monitored not by factories or empires, but by **platforms**.
- Algorithms schedule, prioritize, and filter experience — what you see, when you see it, how long you look.
- In this sense, time has become a new *form of power*: invisible, data-driven, and predictive.

📱 8. Digital and Algorithmic Time

Fragmented Temporality

- The digital environment dissolves continuous time into *notifications, feeds, and scrolls*.
- Time no longer “flows”; it *updates*.
- Every online moment exists in a perpetual present — a loop of “now,” constantly refreshed.

Attention as Currency

- Platforms don’t measure time in hours, but in *engagement*.
- Your timeline is not chronological but *algorithmic*: it serves you what keeps you watching.
- Thus, time becomes **personalized**, **commodified**, and **tracked**.

Acceleration and Exhaustion

- Philosopher Hartmut Rosa describes modernity as an “acceleration society”:
  - technological acceleration,
  - social acceleration,
  - acceleration of the pace of life.
- The result is paradoxical: we save time constantly, yet feel we have less of it.

Temporal Alienation

- The gap between human time (slow, emotional, embodied) and machine time (instant, computational, abstract) widens.
- This creates a subtle existential anxiety — a sense of being *out of sync* with the world.

💫 9. Speculative Futures of Time

Posthuman and AI Time

- Artificial intelligence doesn't "experience" time; it *processes* it.
- In machine learning, time is a parameter — a dataset of past events predicting future patterns.
- This suggests a new temporal logic: not memory and anticipation, but computation and iteration.

Ecological Time

- The climate crisis reintroduces the **deep time** of geology and planetary systems.
- Human history becomes a thin layer within Earth's much longer temporal field.
- The question of time shifts from "how fast can we go?" to "how long can we last?"

Artistic Time

- Contemporary art often resists acceleration — by slowing, repeating, or suspending time.
- In this sense, art becomes an act of **temporal resistance**:
    - creating spaces for stillness, duration, and resonance in a culture of speed.

Speculative Conclusion
Perhaps time is no longer just a dimension to be measured, but a **medium** to be inhabited, bent, and remade.
The 21st century challenges us not only to understand time — but to reclaim it.