Requirement Gathering For Cycle Pricing Engine

1. Objective

A user wants to develop a pricing engine for a cycle. The engine will calculate the cycle's price based on the selected parts, quantity, size, and type. Since prices change over time, the engine must always use the correct price for the given date.

2. Cycle Components

A cycle consists of several main parts. A user wants the option to choose from:

- Frame: Steel, Aluminum, or Carbon Fiber.
- Handlebar: With Brakes or Without Brakes.
- Seating: Cushioned or Hard.
- Wheels: Includes Spokes, Rim, and Tyre.
    - Tyre options: Tube or Tubeless, available in sizes 24", 26", or 28".
- Chain Assembly: Single-speed or Multi-speed.

3. Pricing Rules

A user wants the engine to:

- Fetch the correct price for each part based on a selected date.
- Multiply the unit price by the quantity and adjust for any size differences.
- Sum up all the prices to calculate the total cycle price.

Component	Type	Size	Quantity	From Date	Price on From Date	To Date	Price on To Date	Total Price
Frame	Steel	-	1	Jan-26-2023	250	Jan-25-2024	300	300
Frame	Steel	-	1	Jan-26-2024	300	Present	300	300
Tyre	Tubeless	28"	2	Jan-20-2016	250	Nov-15-2025	200	400
Tyre	Tubeless	28"	2	Feb-15-2018	300	Sep-23-2024	300	600
Brakes	Disc	-	2	Mar-3-2019	400	Oct-10-2024	500	500
Wheel	Spoked	26"	2	Apr-23-2024	500	present	1000	1000
Wheel	Alloy	26"	2	Jan-12-2020	350	Feb-11-2025	500	500
Total	-	-	-	-	-	-	-	3600

4. Additional Requirements

- A user wants **automated testing** to verify the system works correctly and prevent errors.
- A user wants the system to be **well-structured and modular**, making it easy to update and maintain.
- A user wants the system to **handle bulk pricing efficiently**, processing up to **1,000 cycles** at a time using a maximum of **10 tasks running in parallel** for faster calculations.