Assignment 0

Question: Create 10 such object examples by following the structure above.

Each example must include:

- Object Name

- State (minimum 5)

- Behavior (minimum 3)

- Identity

- Responsibility

for e.g

Object Name: Fan

State:

- Number of Blades: 3

- Color: Black

- Company Name: Bajaj

- Model: Maxima 600mm

- Price: ₹1500

- RPM: 300

- Motor Type: Induction

- Serial Number: BAJ1234FAN20240721

Behavior:

1. When I switch on the button, the fan starts rotating.

2. When I switch off the button, the fan stops rotating.

3. When I rotate the regulator clockwise, the speed of the fan increases.

4. When I rotate the regulator anti-clockwise, the speed of the fan decreases.

Identity:

- Serial Number: BAJ1234FAN20240721

Responsibility:

1. When I switch on the button, the fan should start rotating quickly.

2. When I switch off the button, the fan should stop rotating quickly.

3. When I rotate the regulator clockwise, the fan should increase its speed accurately.

4. When I rotate the regulator anti-clockwise, the fan should decrease its speed accurately.

1]. Ballpoint Pen

\* State

- Body material:Stainless steel

- Barrel diameter:10mm

- Ink colour: Blue Quinflow

- Tip size: 0.5 mm medium

- Weight: Approximately 14g

Behaviour:

1. When the top button is clicked ,the tip extends or restracts.
2. When writing pressure is applied,ink flows smoothly across paper.
3. When removed from pocket,the clip hold pen securely.
4. When refill rund out, it clicks dry and must be replaced.

Identity:

* Serial Number: PJ-8521364789

Resposibility:

1. Deliever consistent,skip-free ink flow.
2. Retract tip cleanly to prevent ink stains.
3. Withstand at least 50000 click cycles.

2]. Office chair

Seat: Mest textile back + padded fabric seat

Adjustments: Height 46–57 cm; tilt tension knob; tilt lock

Weight capacity: 110 kg maximum load

Dimensions: width 62 cm, depth 60 cm (seat depth 47 cm, back height 129–140 cm)

Movement: Five‑arm aluminum base + castors

Warranty: 10 years

**Behavior:**

1. When user sits, seat height and tilt adjust smoothly.
2. When reclined, synchronized tilt keeps feet flat and gaze level.
3. If weight shifts forward, chair rebalances to support.

* **Identity:**
  + Article number: 702.611.50 (Markus Medium, Vissle Dark Grey)
* **Responsibility:**
  + Maintain ergonomic posture for up to 8 hours seated.
  + Support safe tilt and height adjustment without sudden collapse.
  + Lock wheels automatically when unoccupied.

**3. Ceramic Coffee Mug (300 ml capacity)**

* **State:**
  + Material: Glazed ceramic, breakable
  + Capacity: 300 ml (10 oz) typical for eve
  + Height: 9.5 cm; diameter: ~8–10 cm
  + Handle: Semi‑circular, fits 3 fingers
  + Color: White glossy exterior
  + Microwave/dishwasher safe: yes
* **Behavior:**
  + When filled with hot tea/coffee, retains heat for ~10 min.
  + When placed in the microwave, it heats beverage evenly.
  + When rinsed or run through dishwasher, does not fade or stain.
* **Identity:**
  + Stamp under base: MUG‑210325300W
* **Responsibility:**
  + Hold liquid up to brim without leaking.
  + Safe for food‑safe use under 10 000 dishwasher cycles.
  + Withstand drop from ≤ 30 cm onto countertop without shattering.

**4. Manual Toothbrush**

* **State:**
  + Bristles: nylon, soft, 32 tufts arranged in 4 rows
  + Handle: polypropylene plastic, ribbed grip
  + Head size: 20 mm × 10 mm
  + Colour: Light blue and white
  + Manufacturer: SmileCare; model: SC‑2025
* **Behavior:**
  + When brushing teeth vertically, removes implied plaque.
  + When rinsed under tap, bristles shed minimal fibres.
  + When flipped, toothbrush cap protects bristles cleanly.
* **Identity:**
  + Serial: SC‑TB‑20250321
* **Responsibility:**
  + Clean teeth effectively when replaced every 3 months.
  + Bristles remain aligned without splaying after 30 days of use.
  + Prevent gum abrasion; bristle tips are rounded and smooth.

**5. Umbrella**

* **State:** open diameter 96 cm; ribs: 8 fiberglass; handle: plastic with wrist strap; colour: dark navy; canopy: polyester waterproof.
* **Behavior:**
  1. Opens via push button; locks securely.
  2. When wet, water beads off polyester.
  3. When closing, canopy collapses and tip shield covers it.
* **Identity:** UMB96‑20250414
* **Responsibility:** open/close reliably ≥ 500 times; resist wind speed ≤ 30 km/h; prevent rust on frame.

6. Xiaomi 14 Smartphone

State:

* Display: 6.36″ LTPO AMOLED, up to 120 Hz refresh rate
* Processor: Snapdragon 8 Gen 3 chipset with 12 GB RAM
* Storage: 256/512 GB UFS 4.0
* Battery: 4,610 mAh Li‑Po with 90 W wired / 50 W wireless fast charge
* Camera system: triple 50 MP wide/telephoto/ultrawide lenses (LEICA optics)

Behavior:

1. Unlock via under‑display fingerprint or face recognition.
2. Run apps and multitask with minimal lag.
3. Take high‑resolution photos and record up to 8K video.
4. Charge from 0–100 % in under 45 minutes.
5. Stream video with Dolby Vision and HDR10+.

**Identity:**  
Xiaomi 14, launched March 2024; model “Xiaomi 14”

**Responsibility:**

1. Deliver premium visual performance and responsiveness.
2. Manage heat effectively (thermal throttling avoided).
3. Retain >80 % battery health over 500 cycles.
4. Maintain fast charge safely and consistently.
5. Enable accurate photography in varied lighting.

7.**Digital Wall Clock “TimeVue 12”**

**State:**

* Display: 12″ LED digits (white)
* Power: AC adapter + battery backup (CR2032)
* Time zones: supports GMT offsets −12 to +14
* Calendar: shows day/month/AM‑PM
* Housing: black plastic; wall‑mount & stand.

**Behavior:**

1. Display current time continuously;
2. Auto‑adjust for daylight saving time;
3. Switch to backup battery if power fails;
4. Beep once on each hour (optional).

**Identity:**  
TimeVue model TV‑DC12‑2024

**Responsibility:**

1. Keep ±30 s/month accuracy;
2. Backup battery must maintain time for ≥ 72 h during outage;
3. Beep must sound quietly (< 60 dB) when enabled.

8.**USB‑C Charger “ChargeFast 30W”**

**State:**

* Output: USB‑C PD 30 W (5–20 V, max 1.5 A at 20 V)
* Input: 100–240 VAC; switches automatically;
* Ports: single USB‑C port;
* Size: 50 × 55 × 28 mm;
* Weight: 90 g.

**Behavior:**

1. Deliver correct voltage/current to compatible devices;
2. Shut off when no load detected;
3. Resume charging on reconnect;
4. Protect against over‑voltage or short circuit.

**Identity:**  
ChargeFast model CF‑USB‑PD30‑2025

**Responsibility:**

1. Respect USB‑PD spec;
2. No overheating (> 60 °C) under full load;
3. Restart charging reliably after unplug.

9.**Stainless Steel Spoon “EveryDay 100 mm”**

**State:**

* Material: 18/8 stainless steel polished
* Bowl: 18 mm depth, 40 mm diameter;
* Handle: 100 mm long, tapered;
* Weight: ~22 g;
* Finish: mirror polish.

**Behavior:**

1. Scoop liquids, cereals, yogurt;
2. Fit comfortably between fingers;
3. Conduct heat slowly (minimal heat on handle).

**Identity:**  
EveryDay spoon EDS‑100SS

**Responsibility:**

1. Hold ≥ 15 ml liquid without bending;
2. No rust or spots after 100 dishwasher cycles;
3. Edges remain smooth; no sharp corners.

**10.Bluetooth Earbuds**

**State:**

* Form factor: in‑ear + charging case;
* Battery: 6 h playback per charge, case provides 3 full charges;
* Codec support: SBC, AAC, aptX;
* Bluetooth: v5.3;
* Weight: 4 g per bud, 45 g case.

**Behavior:**

1. Pairing mode on case open;
2. Auto‑reconnect after earbuds removed from case;
3. Touch controls: play/pause, call answer/hang up;
4. Charge earbuds and case via USB‑C.

**Identity:**  
SoundWave model SW‑Mini‑BT‑2025