```
                          ┌─────────┐
                          │  Start  │
                          └─────────┘
                               │
                               ▼
                    ┌──────────────────┐
                    │    Initialize    │
                    └──────────────────┘
                               │
                               ▼
                          ╱─────────╲
                         ╱  running?  ╲ ───── false ─────→ ( End )
                          ╲─────────╱
                               │
                             true
                               │
                               ▼
                    ┌──────────────────┐
                    │  Calculate Δt    │
                    │ delta = currentTime - lastTime │
                    └──────────────────┘
                               │
                               ▼
                    ┌──────────────────┐     ● Move entities
                    │   update(Δt)     │     ● Check collisions
                    │   Logic only     │     ● Update game state
                    │  No rendering!   │     ● Frame-independent!
                    └──────────────────┘
                               │
                               ▼
                    ┌──────────────────┐     ● Clear screen
                    │     draw()       │     ● Draw entities
                    │  Rendering only  │     ● Render HUD
                    │    No logic!     │     ● Fast & efficient!
                    └──────────────────┘
                               │
                               ▼
                    ┌──────────────────┐
                    │     sync()       │
                    │   Control FPS    │
                    │  Target: 60 FPS  │
                    └──────────────────┘
```

Start

Initialize

running? — false → End

true

Calculate Δt
delta = currentTime - lastTime

update(Δt)
Logic only
No rendering!

- Move entities
- Check collisions
- Update game state
- Frame-independent!

draw()
Rendering only
No logic!

- Clear screen
- Draw entities
- Render HUD
- Fast & efficient!

sync()
Control FPS
Target: 60 FPS

Key Benefits:

✓ Testable (update() without display)
✓ Frame-rate independent (delta time)
✓ Predictable performance (60 FPS)
✓ Clean separation of concerns