

Create a WebSocket server using **FastAPI** that supports sending real-time notifications to connected clients. The server should include a **graceful shutdown** mechanism that ensures the service only stops when there are no active WebSocket connections or **30 minutes have passed** since the shutdown signal was received.

Requirements

1. WebSocket Server

- Use FastAPI to create a WebSocket endpoint (/ws).
- Track active WebSocket connections.
- Send a test notification (e.g., every 10 seconds or on demand) to all active clients.

2. Connection Management

- Implement a system to track connected clients.
- Remove clients when they disconnect.
- Allow broadcasting messages to all connected clients.

3. Graceful Shutdown

- On receiving a SIGTERM or SIGINT signal:
- Wait until all active WebSocket clients have disconnected OR
- Force shutdown after 30 minutes, whichever happens first.
- Log the shutdown progress (e.g., connection count, remaining time).
- Handle case when number of uvicorn workers more than 1

Deliverables

- A self-contained project (single or multi-file) runnable with `uvicorn main:app`.
- Include basic README with:
 - Setup instructions
 - How to test the WebSocket endpoint
 - Explanation of graceful shutdown logic