

# **Automatic Pallet Transport Request by Forklifts**

**Authors:**

**Dibya raj khatri(a57096)**

**Bikal Bista(a43323)**

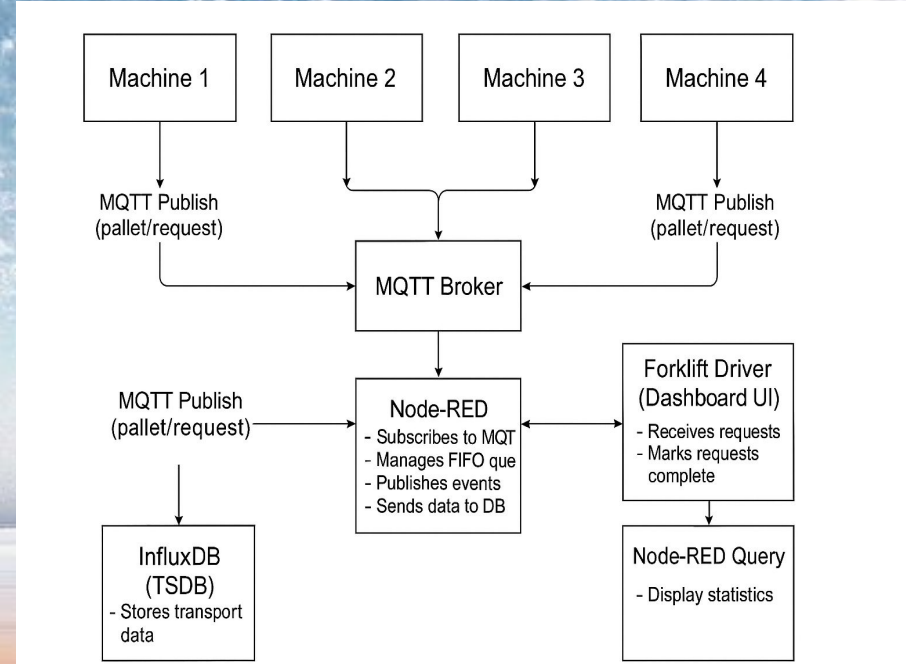
# Project Description

## System Overview:

- 4 client machines (Machine 1–4)
- 1 forklift with driver interface
- Forklift transports items from machines to warehouse

## Communication:

- Dashboard requests from machines
- FIFO queue on forklift interface





# Objectives

## Machine Operator Dashboard:

- Request button
- Shows average & std deviation of transport times
- Data stored in individual InfluxDB buckets

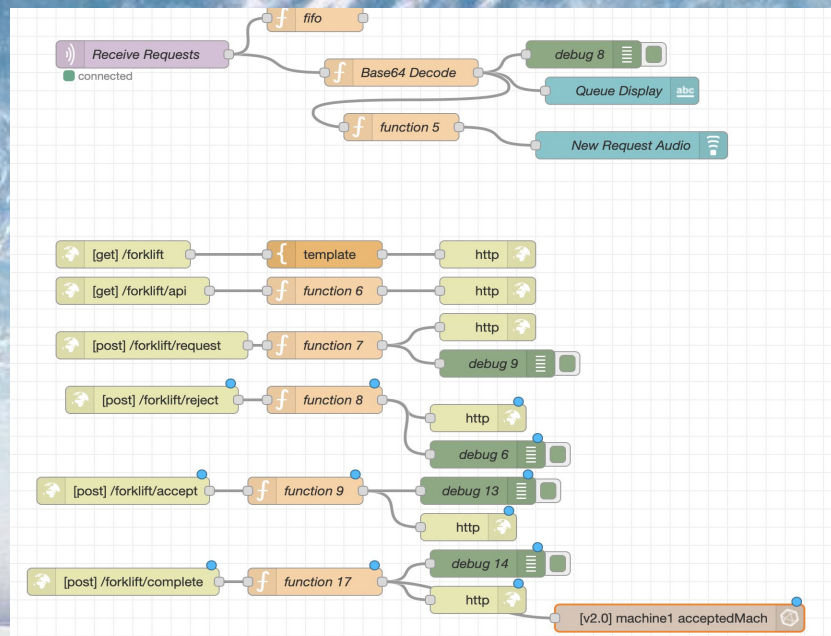
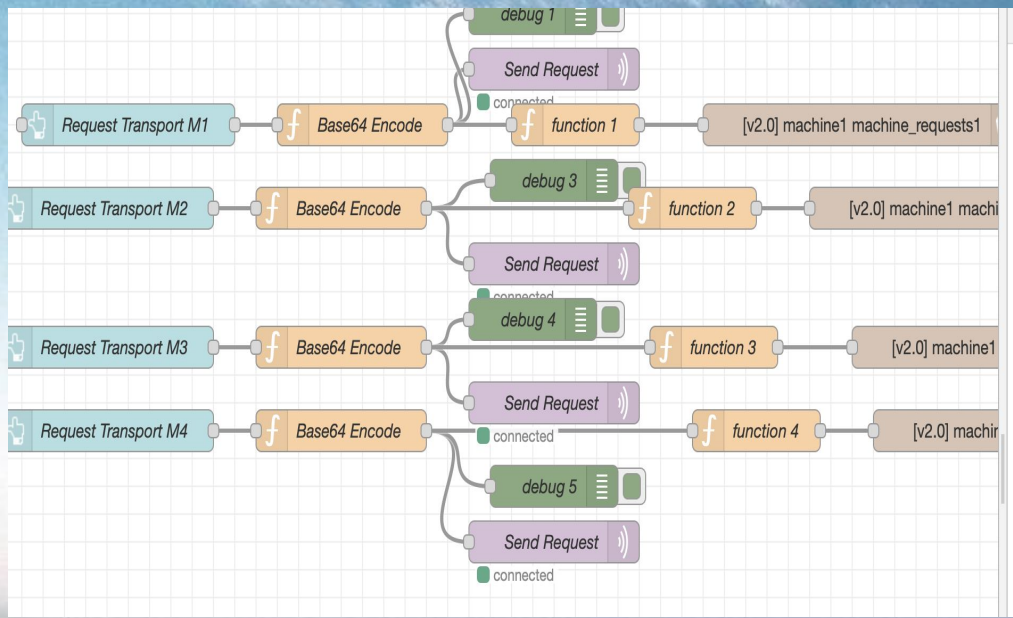
## Forklift Driver Dashboard:

- FIFO queue
- Average transport time
- Shortest/Longest transport time + machine ID
- Audio alert for new requests

## Technical Stack

- **Communication Protocol:** MQTT (via public broker)
- **Visualization & Logic:** Node-RED
- **Database:** InfluxDB
- **Security:** Encrypted data exchange

# Images of Flow



## Forklift Request Queue (FIFO)

**Machine:** M2  
**Requested at:** 2025-06-04T22:22:38.221Z

Accept

Reject

**Machine:** M3  
**Requested at:** 2025-06-04T22:22:47.122Z

Accept

Reject

**Machine:** M4  
**Requested at:** 2025-06-04T22:27:48.303Z

Accept

Reject

**Machine:** M1  
**Requested at:** 2025-06-05T09:40:27.236Z

Accept

Reject

**Machine:** M1  
**Requested at:** 2025-06-05T09:53:41.447Z

Accept

Reject

**Machine:** M1  
**Requested at:** 2025-06-05T09:53:51.277Z

Accept

Reject

**Machine:** M1  
**Requested at:** 2025-06-05T09:55:01.723Z

Accept

Reject

**Machine:** M4  
**Requested at:** 2025-06-05T09:55:05.726Z

Accept

Reject

## Machine Duration Statistics (Last 24 Hours)

### Machine M1

**Average Time:** 296.65 s

**Standard Deviation:**  
390.41 s

### Machine M2

**Average Time:** 41.63 s

**Standard Deviation:** 34.12  
s

### Machine M3

**Average Time:** 1616.72 s

**Standard Deviation:**  
1588.67 s

### Machine M4

**Average Time:** 11.59 s

**Standard Deviation:** 6.71 s



## **Conclusion:**

- Enhances efficiency and tracking in warehouse logistics
- Real-time stats for performance analysis
- Secure and scalable system using IoT technologies

**Thank You!**  
**Questions?**