**System Architecture**

UART/USB

Communication Handler

Connectivity

Buzzer

Led

Display

Error Notification

Time and Status Display

LCD Driver

LCD

Data buffer

SD Card Driver

EEPROM

SD Card

Storage

Check-in/Check-out state handling

RTC

Time Reading

Time

RFID Card

RFID Reader

RFID module

RFID Driver

Tag Authentiction

Power supply

Battery Backup

Regulator

Power switch