IOT BASED HUMAN WEIGHT MEASUREMENT USING RFID AND LOAD CELL

AIM:

Design and Development of IOT based human weight measurement using RFID and load cell.

PURPOSE:

Measuring weight with load cells is common and used in everywhere like in hospitals, public places, gyms and weight reduction centers. All regular load cells are static and don't have any communication with other modules like GSM, IOT or Zigbee. Here we want to design and develop IOT based load cell with RFID authentication. When we scan RFID smart card then system will wait for weight scanning and after weight scanning it will update weight data to IOT server with RFID information, so that we can identify weight of person on IOT server easily. In IOT server weight information will be populated with date and time. This system will helps to analyze weight of human for medical treatments or sports related applications. Because for these kind of applications weight chart with respective day wise is mandatory. The proposed project title is IOT based human weight measurement using RFID and load cell.

PROJECTS FACTORY
Academic Projects

DESCRIPTION:

RFID module (EM-18) interfaced with Arduino uart port. 180kg range load cell interfaced with Arduino through HX711 driver. IOT module (ESP8266) connected with Arduino second uart port. Buzzer connected to Arduino digital pins.

WORKING:

Each RFID card assign to person, when we swipe card then it shows person details like name and age. This information already we kept in Arduino firmware. After swiping RFID card, Arduino wait 10 secs to calculate weight of human. In this span of 10 sec, person has to stand on load cell. After successful

measuring weight buzzer will be ON and weight information will update to IOT server. Also, all this operation information displaying on 16x2 LCD display. We can monitor each person weight in IOT server from remote location. Also data will be stored in IOT server with date and time.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
IOT Module	:	ESP8266
RFID Module	:	EM-18
Load cell	:	180kg Resistance Type
Load cell Driver	:	HX711
Buzzer	:	DC 5V
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

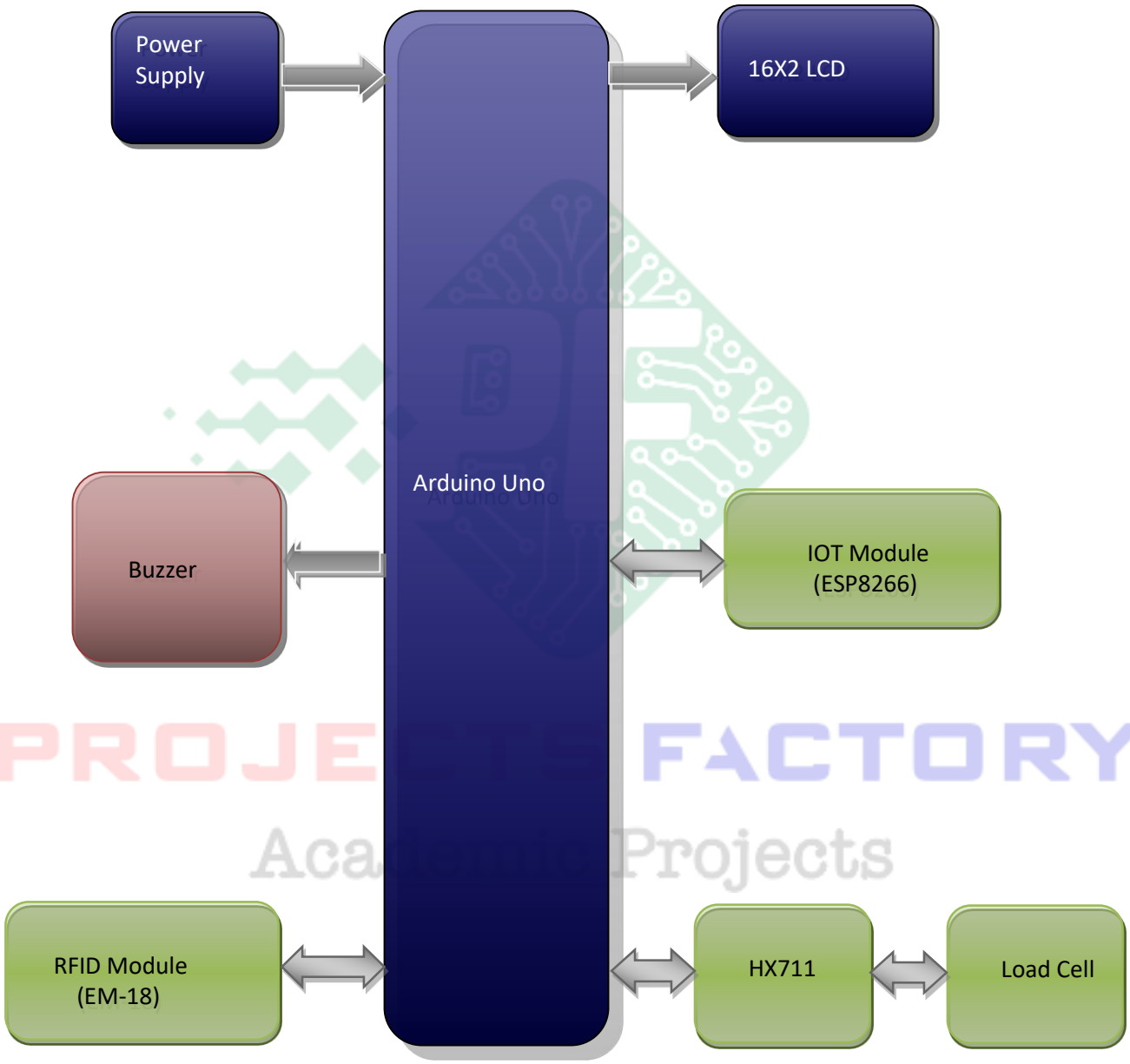
Proteus based circuit diagram

PROJECTS FACTORY
Academic Projects

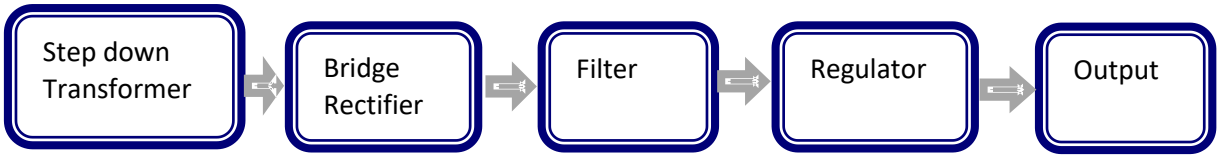
APPLICATIONS:

- Weight Measuring Applications
- HX711 and Load cell Applications
- Patient Health Monitoring
- Human Body Weight Measuring Application

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered IOT module (ESP8266) and RFID module (EM-18) interfacing
- Load Cell and HX711

PROJECTS FACTORY
Academic Projects