

SMART CRADLE AND BABY MONITORING WITH WIRELESS CAMERA

AIM:

Design and Development of Smart cradle and baby monitoring with wireless camera.

PURPOSE:

Number of working mothers increased day by day and spending time for babies is difficult task to mothers. So that most of the parents depends on workers or baby care centers. But babies didn't get care from care centers as like their parents. To solve this issue we proposed a prototype project that will have cradle swinging automation and baby monitoring using wireless camera. This will helps to working mother to save their time. This smart cradle has sensor like temperature, humidity, crying detection and urine detection. The proposed project title is smart cradle and baby monitoring with wireless camera using Arduino and ESP32 cam.

DESCRIPTION:

ESP32 cam and IOT module (ESP8266) interfaced with Arduino two UART ports respectively. DHT11 sensor, Moisture sensor (Urine Detection), Sound Sensor (crying detection) interfaced with Arduino digital pins. MEMS sensor interfaced with Arduino analog pins. Relay Controls Fan and interfaced with Arduino digital output pin.

WORKING:

When Baby cries sound sensor detects and send signal to Arduino, Arduino sends signal to servo motor to swing cradle. DHT11 sensor detects temperature and humidity of near field of baby. Urine sensor placed at inner bottom of cradle tub and it will detect urine. Arduino makes buzzer ON when it detects urine. Also, Arduino sends sensors data to sever when baby cries and urinates. Top of cradle camera placed to monitor baby live video streaming.

TECHNICAL SPECIFICATIONS:

HARDWARE:

| | | |
|----------------------|---|-------------------|
| Microcontroller | : | Arduino Uno |
| Crystal | : | 16 MHz |
| LCD | : | 16X2 LCD |
| Temperature Sensor | : | DHT11 |
| Humidity Sensor | : | DHT11 |
| Sound Sensor | : | MIC sensor |
| IOT Module | : | ESP8266 |
| Camera | : | ESP32 Cam |
| Wet Detection Sensor | : | Moisture sensor |
| Baby Moment Sensor | : | MEMS Sensor |
| Fan | : | 12V DC Fan |
| DC Gear Motor | : | 10 R.P.M |
| H-Bridge | : | L293D |
| Buzzer | : | 5V DC |
| Power Source | : | 12V 2 amp Adaptor |

SOFTWARE:

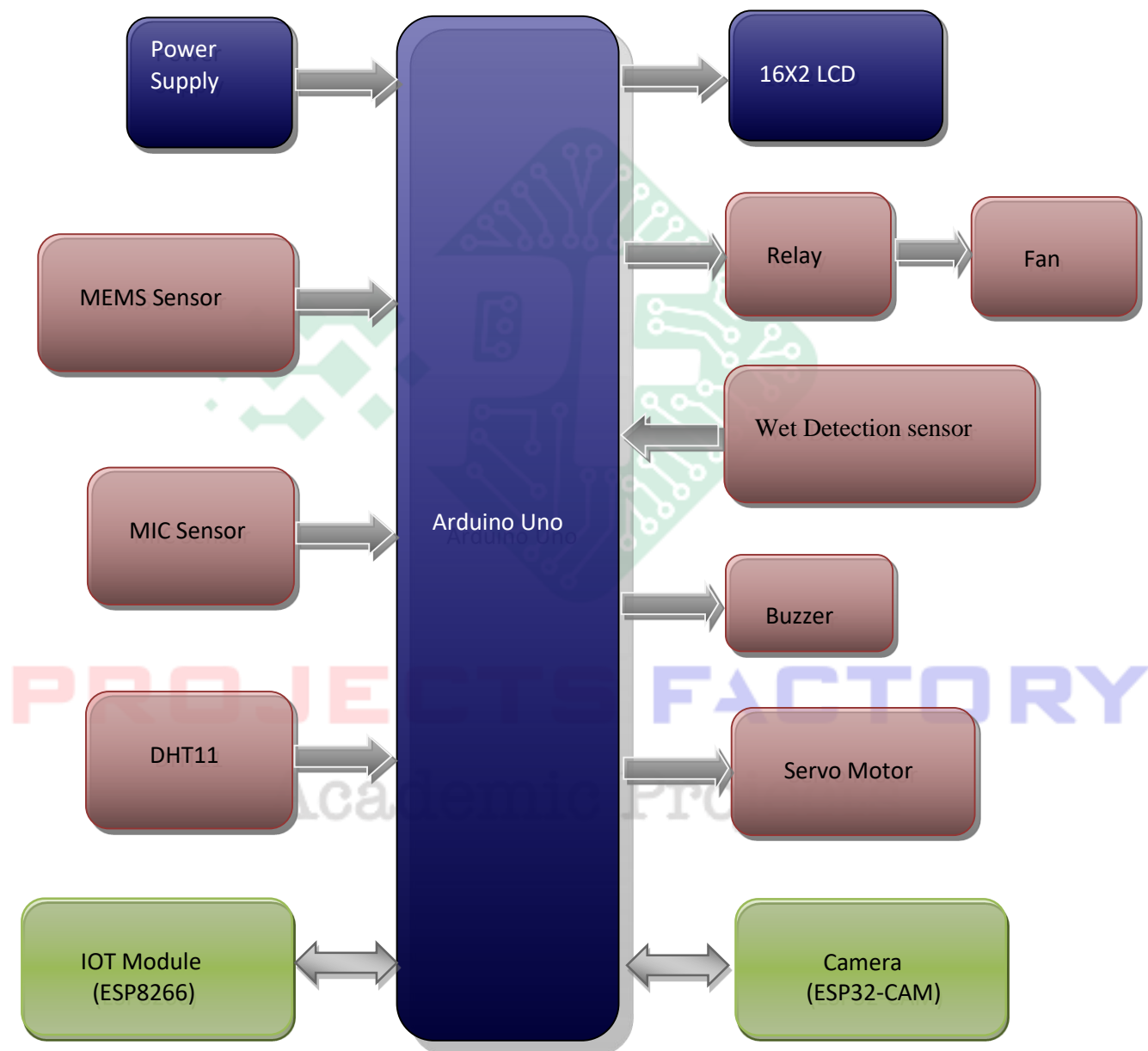
Arduino IDE

Proteus based circuit diagram

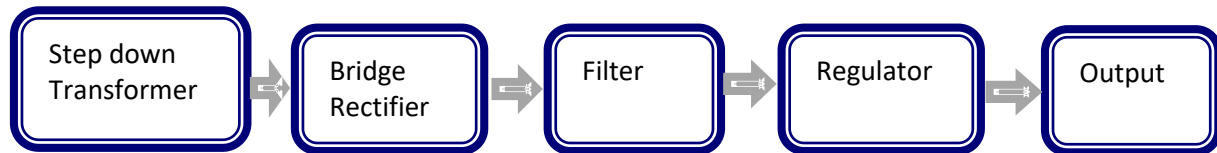
APPLICATIONS:

- Wireless Smart cradle
- Automatic Cradle System
- Smart cradle with Wireless sensor network

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered Arduino, IOT (ESP8266) module and ESP32 CAM interface.
- DHT11, MIC sensor (Sound sensor), wet detection sensor, MEMS sensor and DC gear motor interface.

PROJECTS FACTORY
Academic Projects