

GSM BASED CRADLE MANAGEMENT SYSTEM

AIM:

Design and Development of GSM based cradle management system.

PURPOSE:

Regular cradles are manual and need physical efforts from parents or hospital staff to make them swing. Some electric cradles are available, but don't have additional sensor features. We want to design and develop new kind of cradle that will have baby monitoring sensors. These sensors make baby get into sleep easily. Swing will be automatic and will be done when sound sensor gets activated. Also it has urine detection sensor and it will be more helpful to change diaper immediately to avoid infections to baby. The designing project title will be GSM based cradle management system using Arduino.

DESCRIPTION:

GSM module (sim800C) interfaced with Arduino through UART port. DHT11 sensor, moisture sensor (urine detection), MIC sensor and buzzer interfaced with Arduino digital pins. Servo motor interfaced with Arduino digital output pins and it will act as driver motor cradle swinging motor.

WORKING:

MIC sensor activated when baby crying, swinging motor will be ON when baby cries. DHT11 sensor placed at cradle. DHT11 sensor can detect temperature and humidity surrounding of baby. Urine detection sensor placed at bottom of cradle tub, it will detect urination or excessive wet from baby. Arduino switch ON buzzer when urination happens. Also it will send SMS to parents and helps to change clothes immediately to avoid minor wet infections. All sensors data displaying on LCD continuously.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Temperature Sensor	:	DHT11
Humidity Sensor	:	DHT11
Sound Sensor	:	MIC sensor
GSM Module	:	SIM800C
Wet Detection Sensor	:	Moisture sensor
Motor	:	Servo Motor
H-Bridge	:	L293D
Buzzer	:	5V DC
Power Source	:	12V 2 amp Adaptor

SOFTWARE:

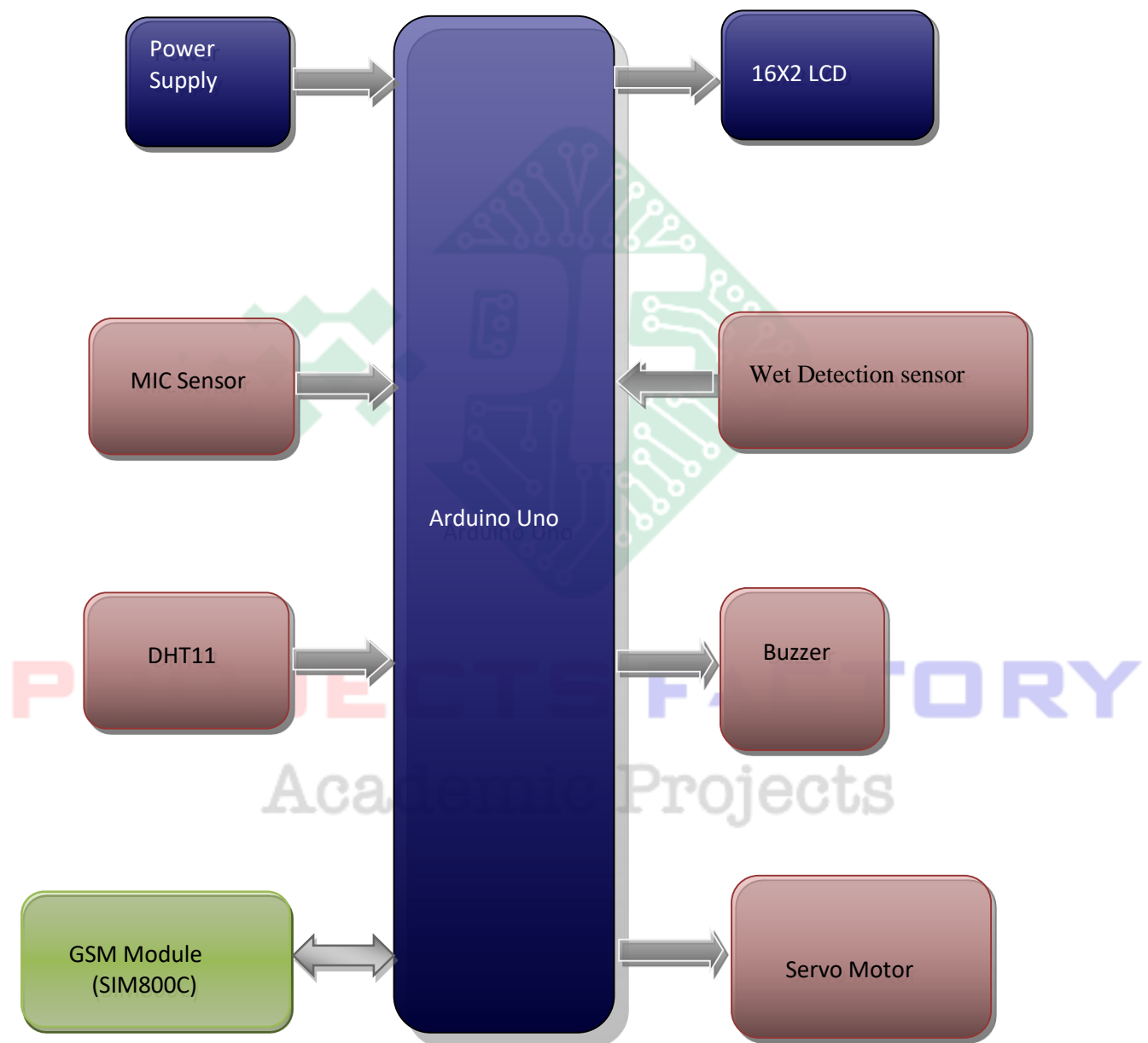
Arduino IDE

Proteus based circuit diagram

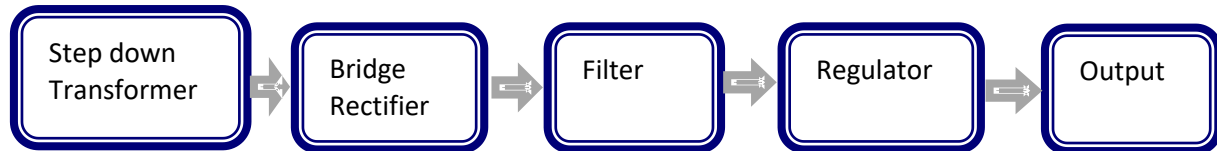
APPLICATIONS:

- Cradle management
- Automatic cradle
- Smart cradle and baby monitoring
- Automatic electric baby cradle swing

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered Arduino and GSM (SIM800C) module interface
- DHT11, MIC sensor (Sound sensor), wet detection sensor and servo motor interface



PROJECTS FACTORY
Academic Projects