

## ABSTRACT

Currently, the average farmer in Indonesia is still using the manual method to calculate the number of livestock one by one, this is very troublesome if the cattle are to be herded and the number of livestock owned quite a lot, this will have an impact on time efficiency as well as high error rates calculation. The purpose of this final project is to create new tools and systems efficient and accurate livestock calculations. The manufacture of an automatic livestock counting device has 2 main parts, namely software and hardware. In this tool software uses the Arduino IDE (Integrated Development Environment) as a medium for programming the Arduino board. Part hardware in the form of Arduino UNO, 16x2 LCD, I2C (Inter Integrated Circuit), GSM Module SIM800L, Buck Mini 360, RTC DS3231, SG90 servo motor, Push Button and Circuit Sensor. The following are the results of the measurement of the power supply voltage, 16x2 LCD, SIM800L, RTC, servo motor, normal infrared LED, while the LCD tool system testing is 16x2, SIM800L, The RTC, the servo motor works fine, however the infrared sensor system is present calculation error of 16%. This tool has been carried out a series of trials and the result is that tool running properly, all components are working as ordered, and able to count the number of livestock faster with a success percentage of 84%.

**Keywords** : Arduino UNO, LCD 16x2, SIM800L GSM Module, Infrared Sensors, Motor servo SG90, DS3231 RTC.