

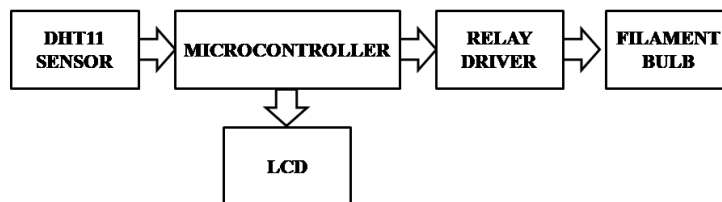
Egg hatching machine

Introduction:

By taking the help of modern engineering and technology, in this project we have designed a hen egg hatching machine. An egg hatching machine is an incubator. Incubator is a device that artificially replicates a mother hen's environment to hatch eggs. Special attention has given for controlling the crucial factors like temperature, humidity, and egg turning to provide the optimal conditions for the embryo to develop without a parent hen's care. Although emphasis has given only to hen eggs, it can be useful for other bird eggs also. It supports for a better poultry business model for rural farmers.



Block diagram:



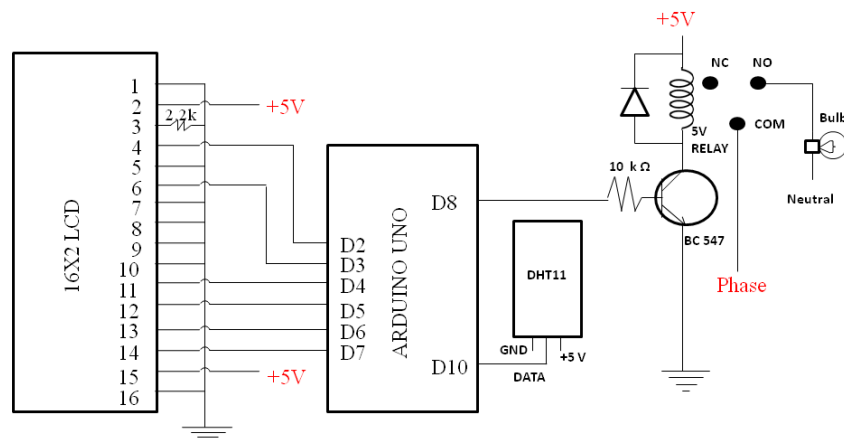
Components required:

1. Electric bulb
2. Bulb holder
3. Temperature and humidity sensor
4. Microcontroller
5. LCD
6. Insulator box
7. Relay driver

Working:

A layer of rice husk bed is prepared inside the box to support the fertilized eggs. It provides warm. Water cups are placed inside the box to humidify the inside chamber. Inside the box a temperature and humidity sensor is installed to measure the parameters and display it on a LCD. A filament type warm bulb is used to maintain the inside temperature up to 37 degree centigrade. When temperature exceeds 37 degree centigrade bulb is deenergized automatically. The ideal humidity 45% - 60% is maintained inside the chamber. Eggs are turned gently by hand, 3 to 6 times a day from day 1 to day 18. Then eggs are kept stable to allow the chicks to position themselves for hatching. We get chicks at 21 days.

Circuit diagram:



Advantages:

1. Mother hen's care is not necessary here.
2. We can hatch more number of eggs compared to natural hatching.
3. In this system temperature control is automatic.
4. It supports for a better poultry business model for rural farmers.