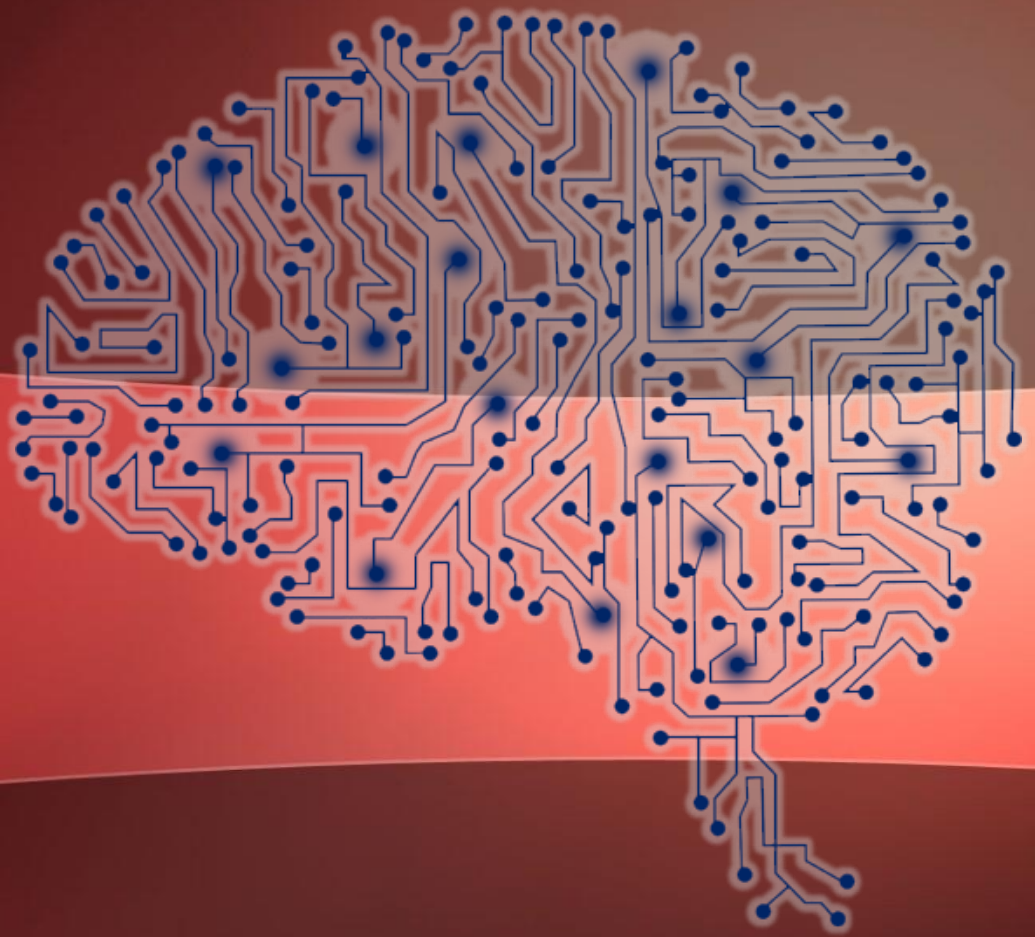
GEMS SORTING MACHINE

BASED ON ARTIFICIAL INTELLEGENCE



Vanshaj Goel - R177219196
Utkarsh Gupta - R177219194

Submitted to - Ms. Nupur Jha

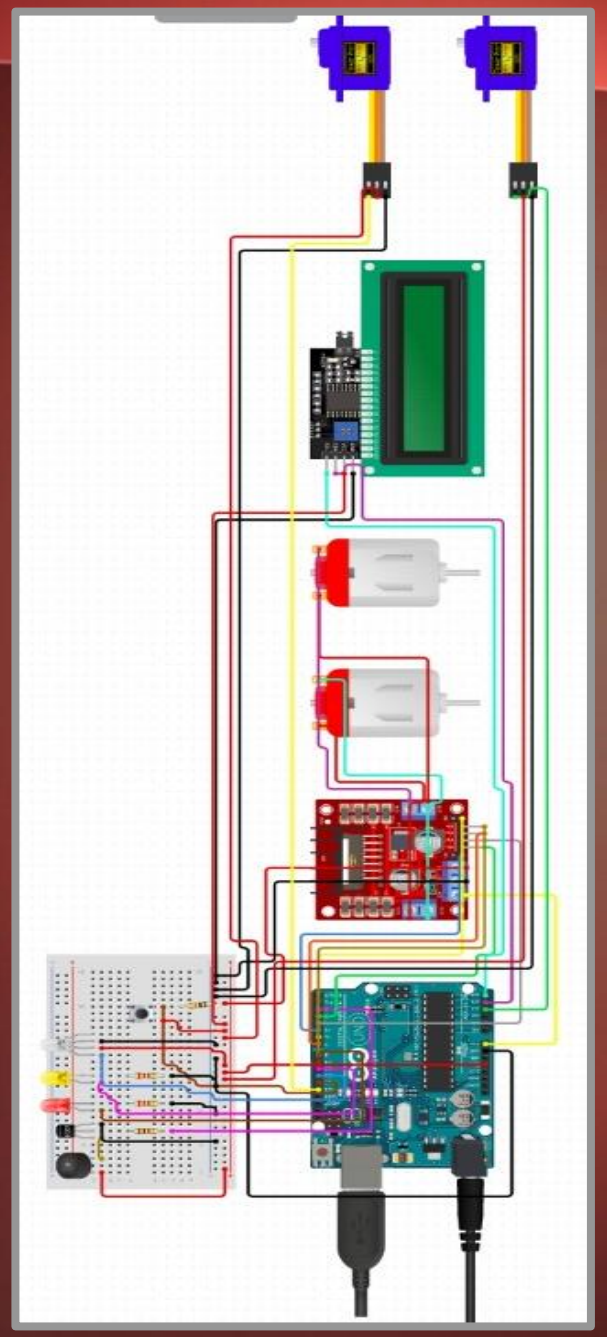
AIM

To replicate a small scale machine that can differentiate similar objects using image recognition. In this particular case, colour detection.

For example Coca-Cola uses a similar industrial level image recognition system to point out the faulty bottles from the main, high speed assembly lines.

WORKING

- The system comprises of two main components, hardware and software.
- Hardware puts the gems on a conveyer belt, moves it and drops it in dedicated box as per the output from the software.
- The software clicks the picture of the gems, feeds it into the neural network. After receiving the output from the neural network it instructs the hardware to drop the gems in a particular box.

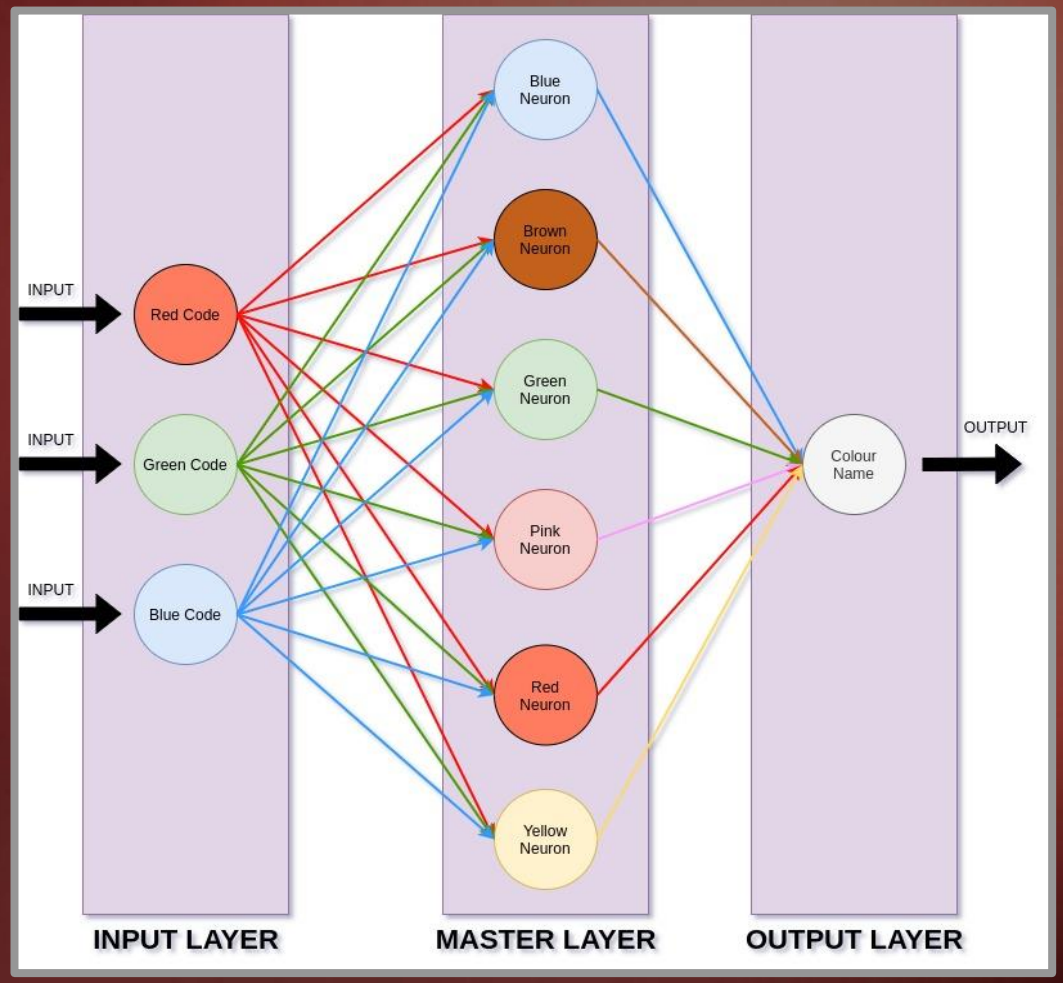


NEURAL NETWORK

The neural network consists of six master neurons for parallel processing of data in six neurons at once. The network is well trained by real time practical data. Every neuron provides a binary output whether it is a certain colour or not.

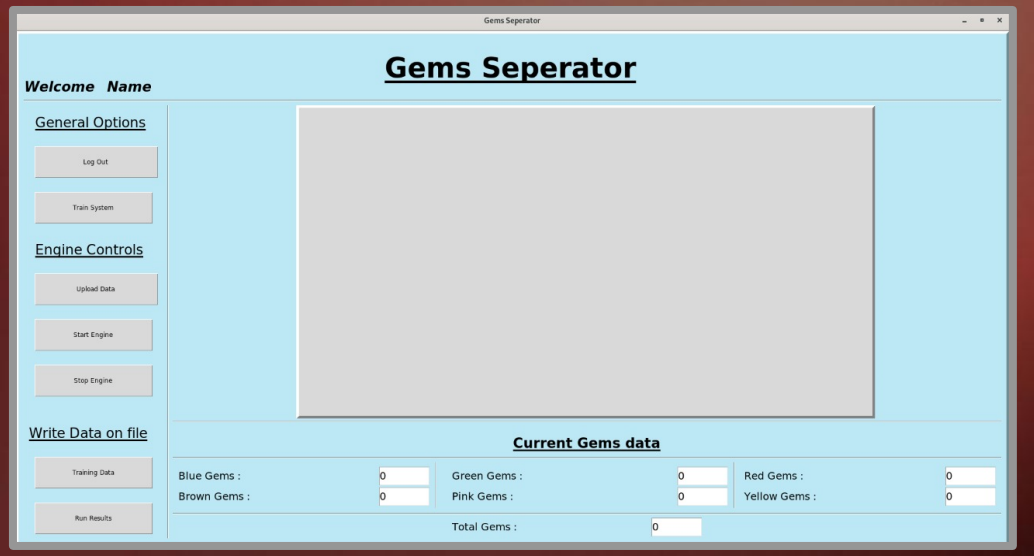
It consists of three layers-

1. Input layer
2. Hidden layer
3. Output layer



FEATURES

- The system has a user interface from which whole machine can be controlled easily.
- Software is designed in such a way that user can add or remove a new object or colour easily.
- The machine has an incredible accuracy of ~93% due to the very well structured neural network.



REFERENCES

- machinelearning.com
- youtube.com/epicmachines
- youtube.com/codacus
- Artificial Neural Network - Saroj Kaushik

THANK YOU!