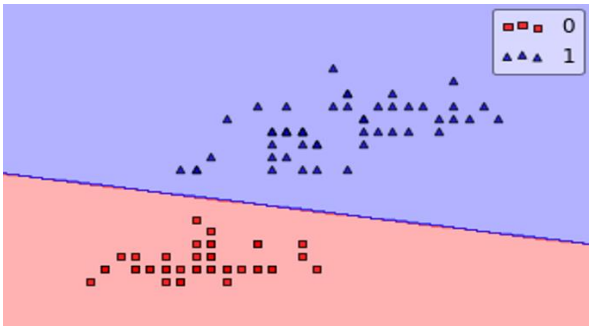
Assignment #2

Linear binary classifier

Binary classification is one of the most common and frequently tackled problems in the machine learning domain. In this task you need to design a linear binary classifier as shown below

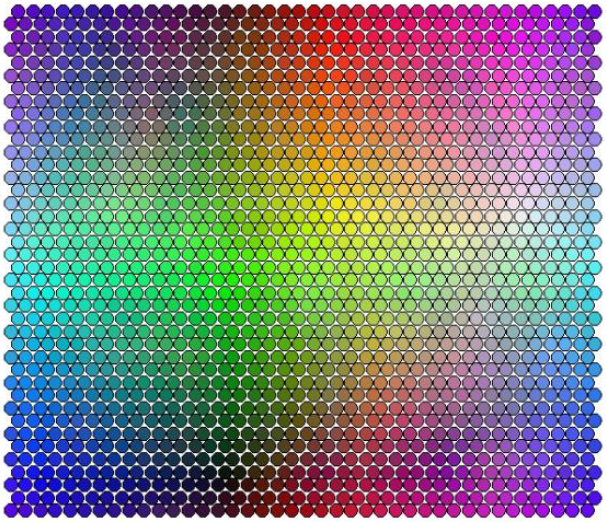


Methodology
Your program should:

- Have a GUI to allow the user to **enter the data points dynamically**
- Use perceptron learning algorithm
- Allow the user to enter the **learning rate, maximum number of iterations**
- **Show the system performance**
- Your GUI should have a graph showing the **classification region (line)** after training
    - Allow the user to enter out of sample data to test the classifier

Colour Cluster

In this task you need to use Kohonan network to implement colour cluster application. All network's neurons have 3 corresponding features [0, 255] range.



Methodology
Your GUI should allow the user to

- Choose the dimension of the grid
- Enter the initial radius, and learning rate
- Determine the input space (Number of inputs, value of inputs “Colours”)
- Determine the stopping criteria (e.g., Max # of epoch)
- Display the grid (colour) before and after the training
- Allow the user to repeat the learning again

Languages

You may use the programming language that you prefer (no python)

Marking scheme

Look and feel of interface	1-5	Algorithm implementation	1-5
Quality of design and coding	1-3	Demo	1-2