KECERDASAN BUATAN
NEURAL NETWORK
7-SEGMENT

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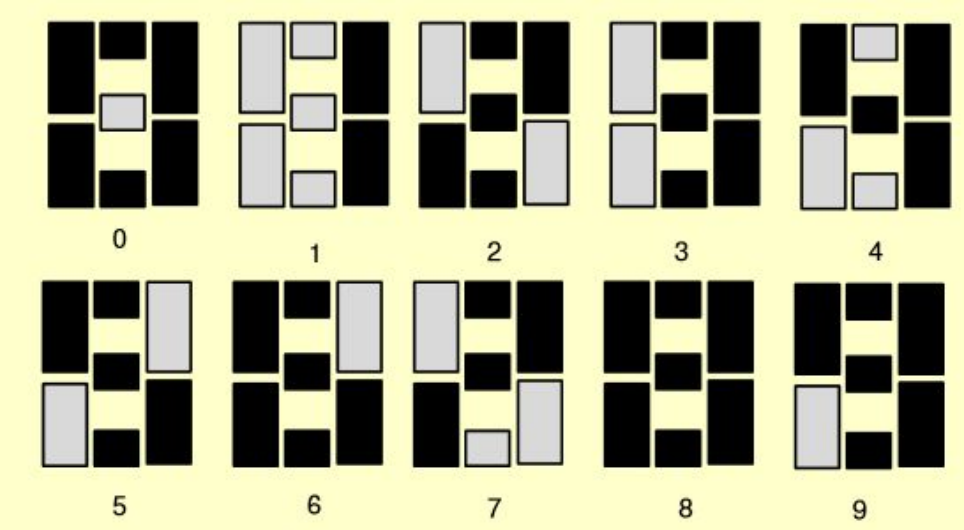
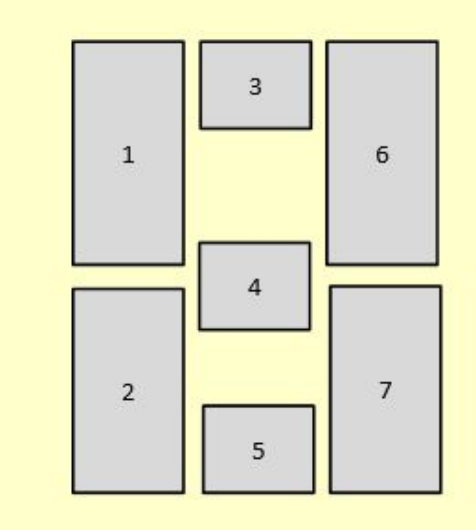
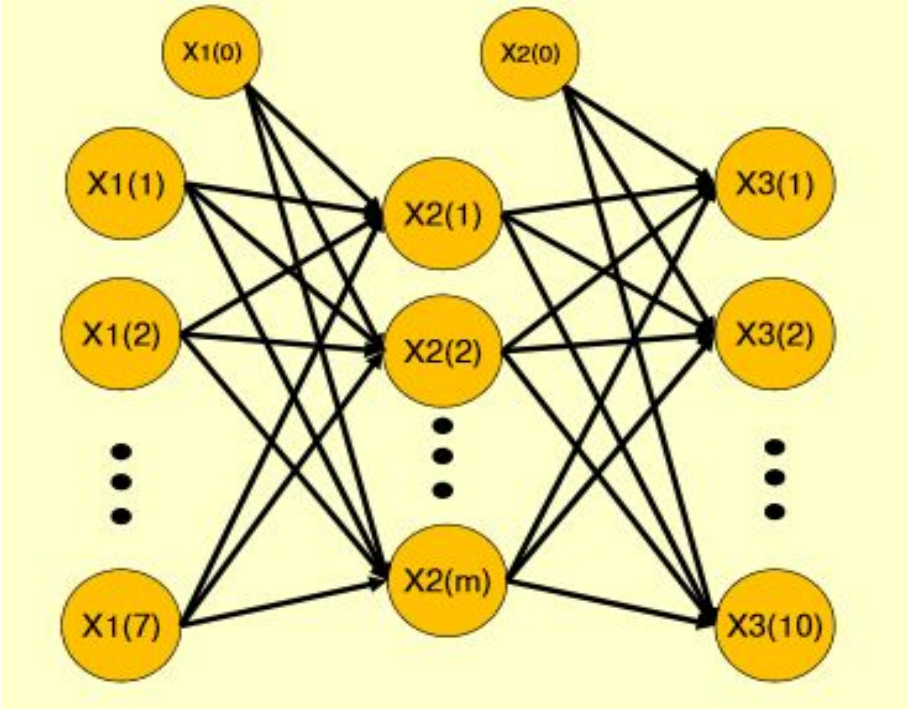
SOAL!

Mencoba dan mengamati case study 7-Segment dengan berbagai kemungkinan Hidden Layer, Unit Layer, dan Epoch





Model 7-Segment



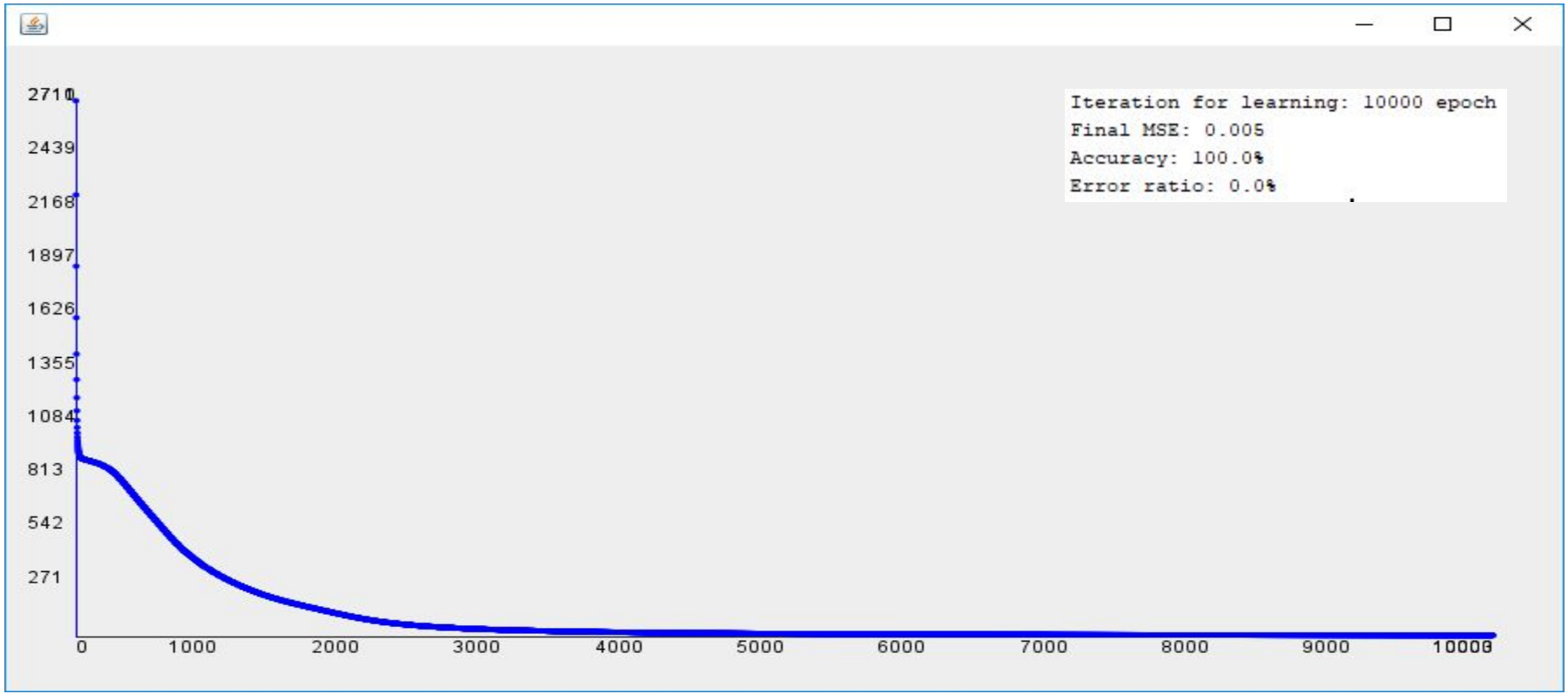
Peralatan

1. PC
2. Aplikasi Apache Netbeans IDE + JDK
3. Lib ALI

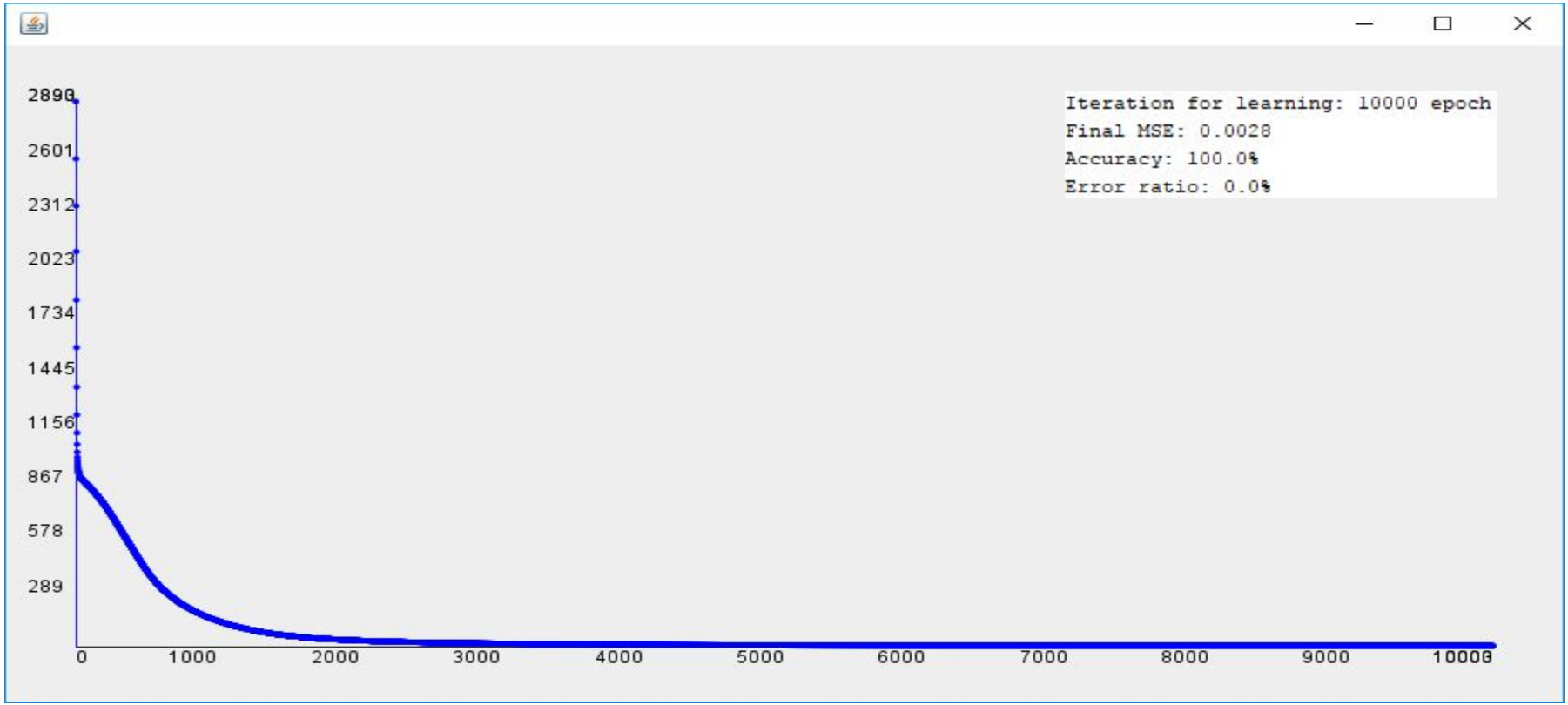
Kode Program

```
package nnxor;
import ALI.*;

public class NNXOR {
    public static void main(String[] args) {

        // TODO code application logic here
        VectorLib vlib = new VectorLib();
        ClassificationLib clib= new ClassificationLib();
        double[][] input_sequence= {{1, 1, 1, 0, 1, 1, 1}, {0, 0, 0, 0, 0, 1, 1}, {0, 1, 1, 1, 1, 1, 0}, {0, 0, 1, 1, 1,
         1, 1}, {1, 0, 0, 1, 0, 1, 1}, {1, 0, 1, 0, 1, 0, 1}, {1, 1, 1, 1, 1, 0, 1}, {0, 1, 1, 1, 0, 1, 0}, {1, 1, 1, 1, 1, 1,
         1}, {1, 0, 1, 1, 1, 1, 1}};
        int[] label = {0,1,2,3,4,5,6,7,8,9};
        double miu= 0.1;
        int[] hidden_unit= {5};
        int epoch = 10000;
        NN nn= clib.NeuralNetwork(input_sequence, label, miu, hidden_unit);
        nn.Learning(epoch, true);
         }
}
```

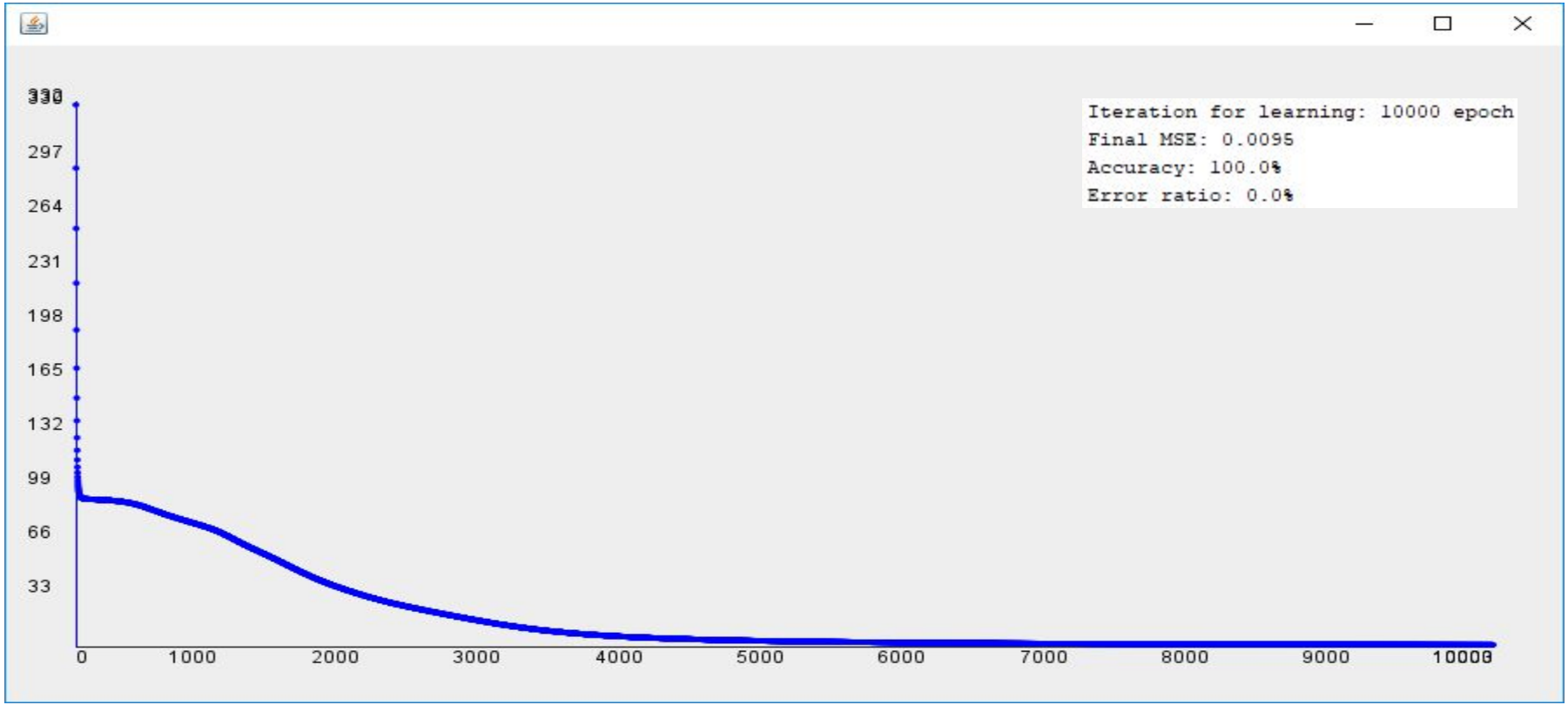
Gradient Descent HU = 5, Epoch = 10000



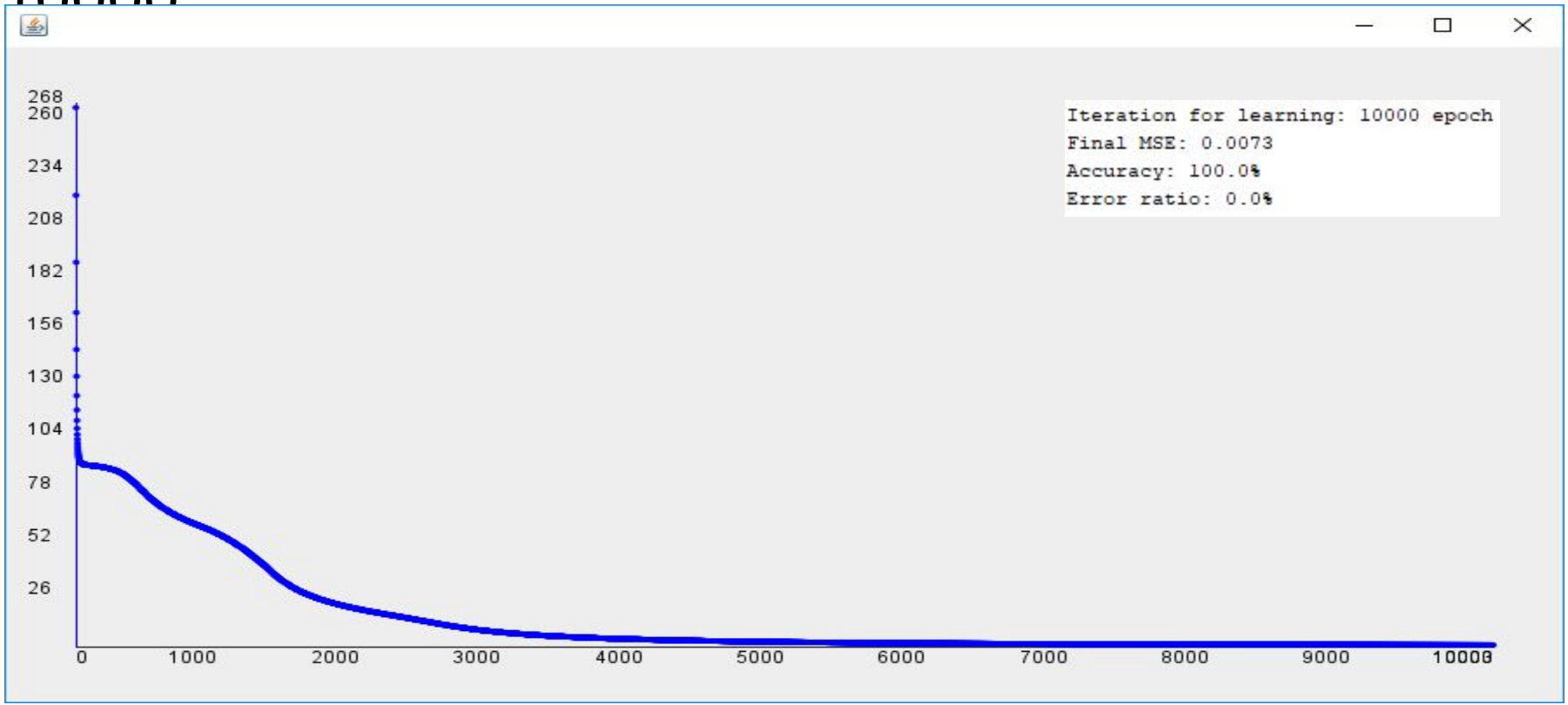
Gradient Descent HU = 10, Epoch = 10000



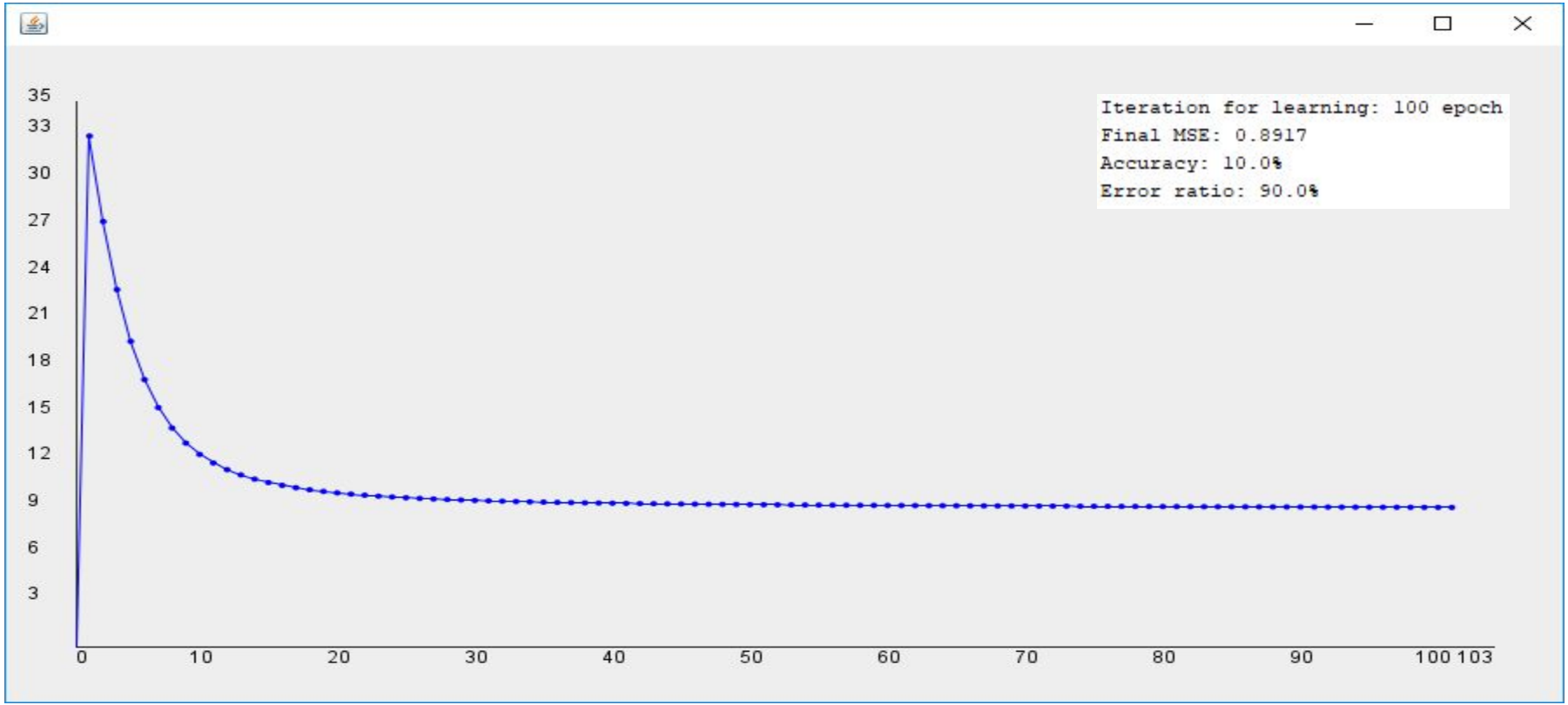
Gradient Descent HU1 = 5, HU2 = 5, Epoch = 10000



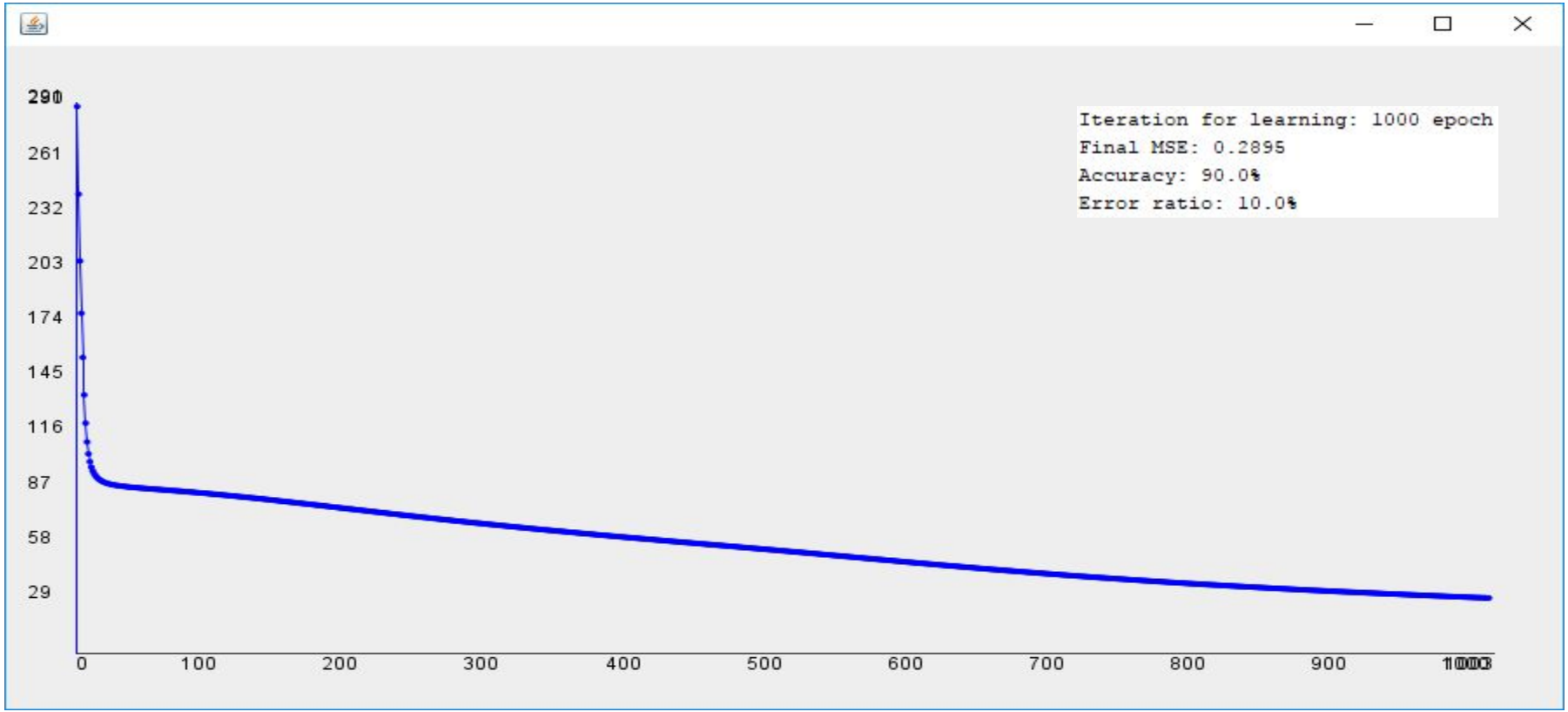
Gradient Descent HU1 = 10, HU2 = 5, Epoch = 10000



Gradient Descent HU = 5, Epoch = 100



Gradient Descent HU = 5, Epoch = 1000



KESIMPULAN

Dari data-data diatas dapat diambil kesimpulan bahwa:

- ★ Semakin banyak hidden unit dalam 1 hidden layer, maka semakin kecil Error MSEnya, dan nilai Accuracy akan tetap sama.
- ★ Semakin banyak Iterasi/Epoch yang diberikan, maka semakin kecil Error MSEnya, dan nilai Accuracy akan semakin tinggi.