# Report

## Team Information:

**Department: SC**

|  |  |  |
| --- | --- | --- |
| **Name** | **ID** | **Sec** |
| بسمة احمد سيد حنفي | 20201700185 | 2 |
| محمد عبدالمنعم عبدالرحمن عبده | 20201700706 | 7 |
| محمد محمود حسن حماد | 20201700733 | 7 |
| عبدالرحمن فخري حسين محمد | 20201701097 | 4 |
| ايمان باسم عزت متولي | 20201700164 | 2 |
| طارق ابو العينين علي ابو العينين | 20201700423 | 4 |

## Screenshots:

### Sigmoid:

A screenshot of a graph

Description automatically generated

*Train Confusion Matrix of Sigmoid With Bias.*

A screenshot of a test

Description automatically generated

*Test Confusion Matrix of Sigmoid With Bias.*

A screenshot of a graph

Description automatically generated

*Train Confusion Matrix of Sigmoid Without Bias.*

A screenshot of a test

Description automatically generated

*Test Confusion Matrix of Sigmoid Without Bias.*

### Hyperbolic Tangent:

A screenshot of a graph

Description automatically generated

*Train Confusion Matrix of Hyperbolic Tangent Without Bias.*

A screenshot of a test

Description automatically generated

*Test Confusion Matrix of Hyperbolic Tangent Without Bias.*

A screenshot of a graph

Description automatically generated

*Train Confusion Matrix of Hyperbolic Tangent With Bias.*

A screenshot of a test

Description automatically generated

*Test Confusion Matrix of Hyperbolic Tangent With Bias.*

## Table:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Activation Function | Bias | Number of Epochs | Learning Rate | Number of Hidden Layers | Number of Neurons | Train Accuracy | Test Accuracy |
| Sigmoid | Yes | 6100 | 0.1 | 3 | 124, 67, 39 | 97.87% | 98.33% |
| Sigmoid | No | 6000 | 0.1 | 3 | 124, 67, 39 | 92.22% | 91.67% |
| Hyperbolic Tangent | Yes | 3500 | 0.1 | 2 | 256, 134 | 77.78% | 78.33% |
| Hyperbolic Tangent | No | 2400 | 0.1 | 2 | 3, 10 | 93.33% | 93.33% |