DS Assignment 1 Report

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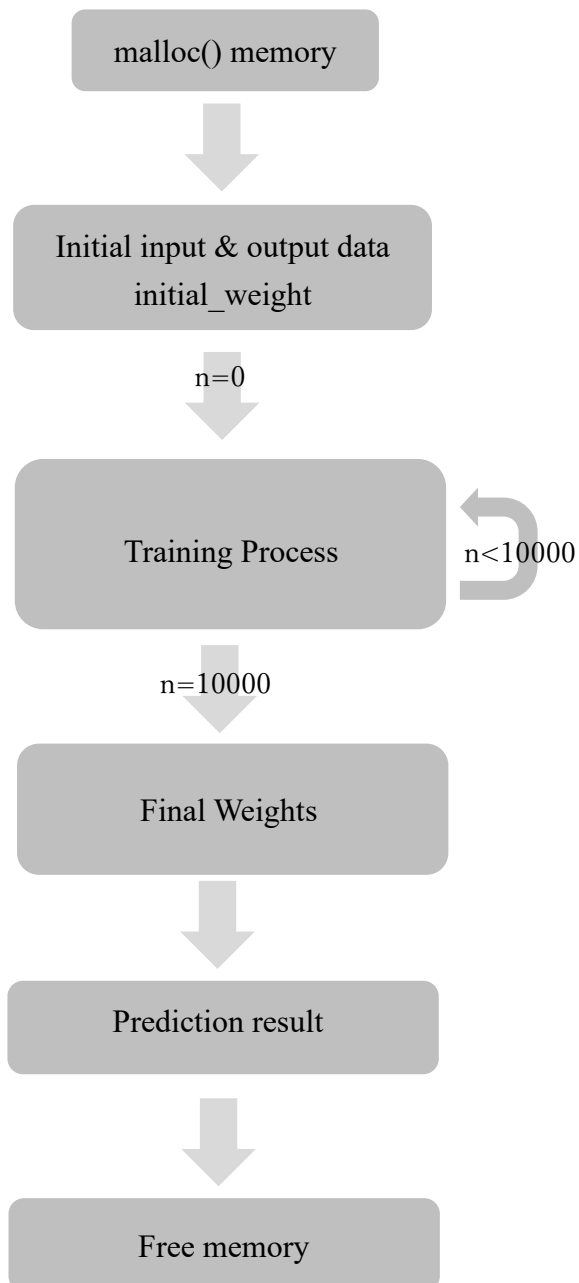
1. Build Guide
   - ➢ `gcc assignment_108501537_1.c -lm`
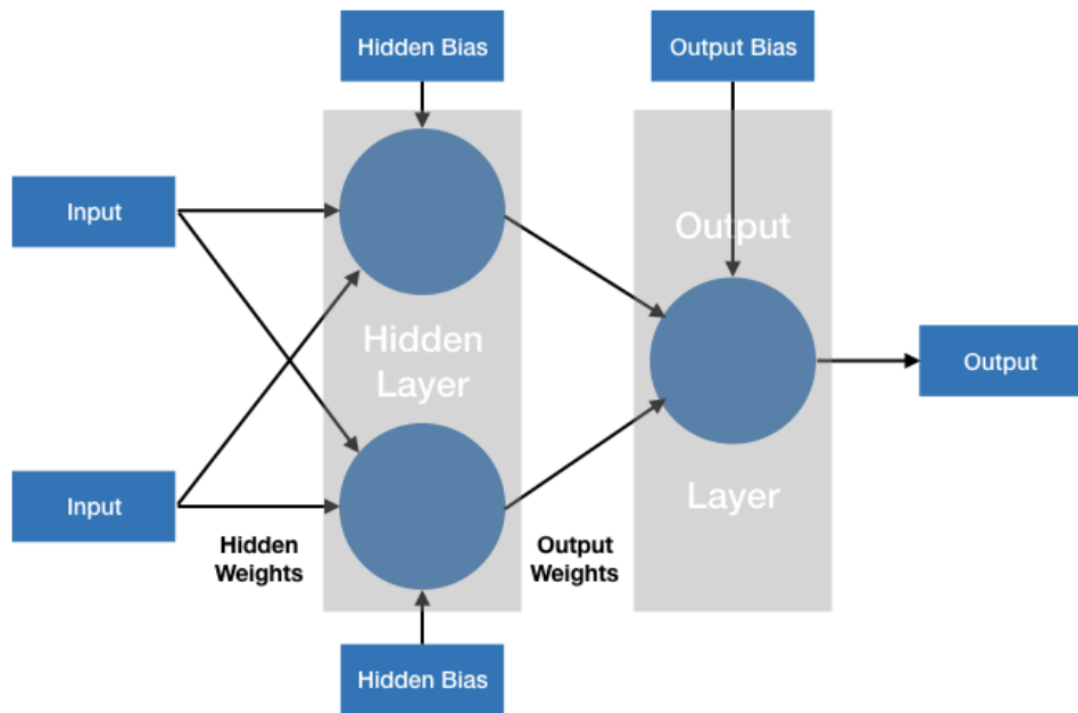
2. Execute Guide
   - ➢ `./a.out`

3. Flowchart

```
         malloc() memory
                |
                v
      Initial input & output data
            initial_weight
                |
               n=0
                |
                v
      Training Process  ⟲ n<10000
                |
             n=10000
                |
                v
          Final Weights
                |
                v
        Prediction result
                |
                v
           Free memory
```

4. System Architecture

5. Function Introduction

- initial_data(training_inputs , training_outputs);
  //初始化訓練資料

- initial_weight(hiddenWeights, hiddenLayerBias, outputWeights, outputLayerBias);
  //初始化權重

- Change_TrainingSetOrder(trainingSetOrder);
  //改變訓練順序

- Training_Process(trainingSetOrder, hiddenLayerBias, training_inputs,
  hiddenWeights, hiddenLayer, outputLayerBias,
  outputWeights, outputLayer, training_outputs);
  //訓練過程

- Print_Final_Weights(hiddenWeights,hiddenLayerBias,outputWeights,outputLayerBias);
  //印出最後之權重

- prediction_result(hiddenWeights, hiddenLayerBias, outputWeights, outputLayerBias);
  //結果預測