Assignment #1

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系級:電機 4B

1. 編譯結果

```
timchen1216@MSI:~/timchen/HW1$ g++ -o main main.cpp
timchen1216@MSI:~/timchen/HW1$
```

2. 執行結果

```
Final Hidden Weights
[[ 3.672178 3.670992 ] [ 5.874518 5.867958 ] ]
Final Hidden Biases
[ -5.610872 -2.422974 ]
Final Output Weights
[ -8.068997 7.451116 ]
Final Output Biases
[ -3.355662 ]
Please enter the first bit:
0
Please enter the second bit:
0
output:0.058510[1] + Done                       "/usr/bin/gdb" --interpreter=mi --tty=${DbgTerm} 0<"/tmp/Microsoft-MIEngine-In-oct5qyct.i0w" 1
>"/tmp/Microsoft-MIEngine-Out-jtlkd4a4.oyd"
```

```
Final Hidden Weights
[[ 3.672178 3.670992 ] [ 5.874518 5.867958 ] ]
Final Hidden Biases
[ -5.610872 -2.422974 ]
Final Output Weights
[ -8.068997 7.451116 ]
Final Output Biases
[ -3.355662 ]
Please enter the first bit:
0
Please enter the second bit:
1
output:0.945376[1] + Done                       "/usr/bin/gdb" --interpreter=mi --tty=${DbgTerm} 0<"/tmp/Microsoft-MIEngine-In-smqifokn.a25" 1
>"/tmp/Microsoft-MIEngine-Out-l5hqjlqk.hup"
```

```
Final Hidden Weights
[[ 3.672178 3.670992 ] [ 5.874518 5.867958 ] ]
Final Hidden Biases
[ -5.610872 -2.422974 ]
Final Output Weights
[ -8.068997 7.451116 ]
Final Output Biases
[ -3.355662 ]
Please enter the first bit:
1
Please enter the second bit:
0
output:0.945397[1] + Done                       "/usr/bin/gdb" --interpreter=mi --tty=${DbgTerm} 0<"/tmp/Microsoft-MIEngine-In-ixarpofu.0ge" 1
```

3. 分析

   由上圖可見，輸入為 00 或 11 時，輸出為 0; 輸入為 01 或 10 時，輸出為 1。符合 xor 閘的真值表。

```
Final Hidden Weights
[[ 3.672178 3.670992 ] [ 5.874518 5.867958 ] ]
Final Hidden Biases
[ -5.610872 -2.422974 ]
Final Output Weights
[ -8.068997 7.451116 ]
Final Output Biases
[ -3.355662 ]
Please enter the first bit:
1
Please enter the second bit:
1
output:0.059441[1] + Done                       "/usr/bin/gdb" --interpreter=mi --tty=${DbgTerm} 0<"/tmp/Microsoft-MIEngine-In-azobzwib.eh1" 1
>"/tmp/Microsoft-MIEngine-Out-vllx0gq2.nfe"
```