

Assignment 3

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系級:電機 4B

1. Compile & Run

➤ Compile

```
tim@MSI:~/HW4$ g++ -o main main.cpp
tim@MSI:~/HW4$
```

➤ Run

```
tim@MSI:~/HW4$ ./main
-----Huffman coding-----
Character: a b c d e
Probability: 0.05 0.1 0.2 0.25 0.4
e: 0
d: 10
a: 1100
b: 1101
c: 111
HuffmanCodes :9.8e-05sec

-----Arithmetic coding-----
Symbol  Probability    Range_from  Range_to
-----
a       0.05              0           0.05
b       0.1               0.05        0.15
c       0.2               0.15        0.35
d       0.25              0.35        0.6
e       0.4               0.6         1

Encoding
Symbol  Low_v  High_v  diff
a       0      0.05   0.05
b       0.0025 0.0075 0.005
c       0.00325 0.00425 0.001
d       0.0036 0.00385 0.00025
e       0.00375 0.00385 0.0001
Code word for abcde is: 0.00375

Decoding:
Code  Output  Range_from  Range_to
0.00375 a       0           0.05
0.075  b       0.05        0.15
0.25   c       0.15        0.35
0.5    d       0.35        0.6
0.6    e       0.6         1
Text for 0.00375 is: abcde
Arithmetic coding:0.000149sec
```