"Home is where the heart is"

Character	Frequency
Space	5
A	1
E	5
H	4
I	2
M	1
O	1
R	2
S	2
T	2
W	1
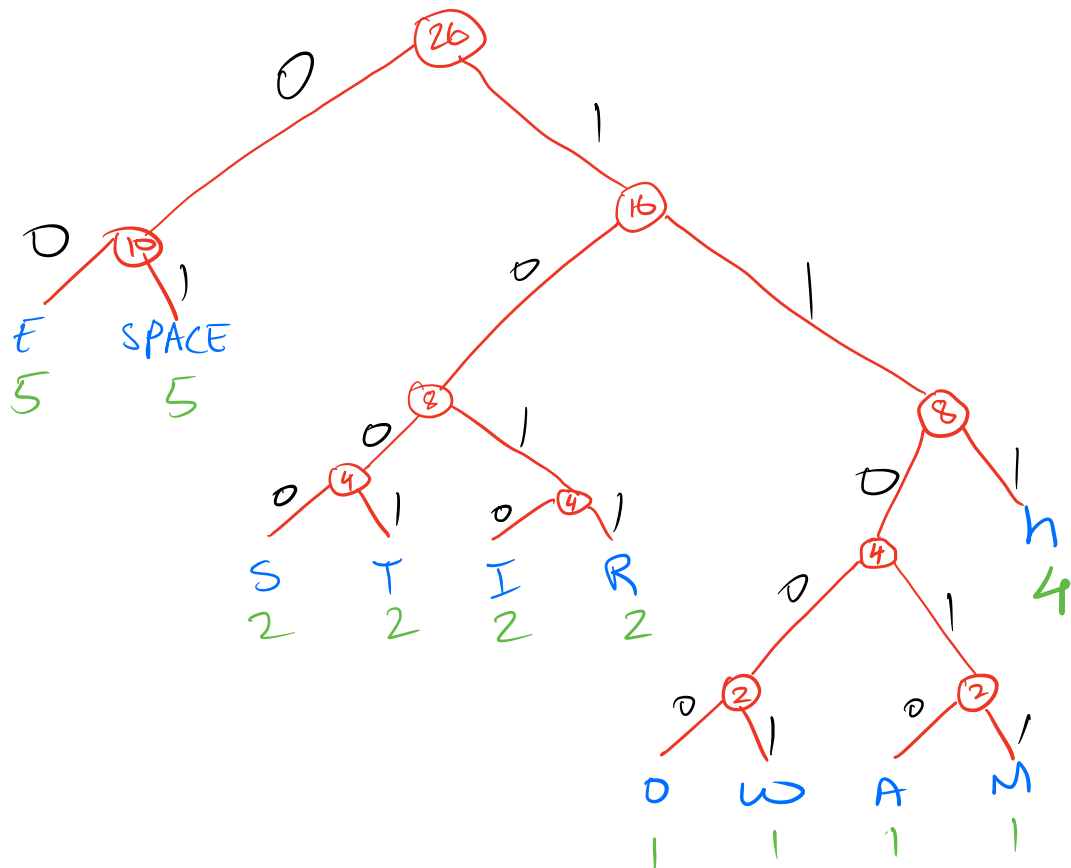
Character	Frequency
Space	01
A	11010
E	00
H	111
I	1010
M	11011
D	11000
R	1011
S	1000
T	1001
W	11001

Part 3: Compression Ratio
Mobydick.txt: 1.761
Medtale.txt: 1.884
Q32x48.txt: 1.882
genomeVirus.txt: 3.976

2.

File name	Final bits
medtalecompression.txt	45056
mobydickcompression.txt	5145680
q32x48.txt	816
genomeVirus.txt	50008

3.
Due to the file compression being lossless the data won't become unreadable, however after the first compression is done there is little to no progress that can be made. The file could also increase in size.

4.
Q32x48.bin
Runlength: 1144 bits
Huffman: 816 bits

Efficient for duplicate characters, this leads to better compression