Module Reflection

This module has taught me a lot about extendible hashing as well as external merge sort. This module relates to data storage, as well as efficient sorting of large datasets. External hashing would have been explained better explained if the tutors went over examples step by step instead of annotating over lecture slides. The external hashing video also cuts off at the 7:55 mark and I had to go on the internet to bolster my knowledge. However, I think the tutors explained external merge sort very well.

Code Reflection

I used some of the code given in the module resources, however I had to change it drastically for the program to work. I had gotten inspiration from different sources from the internet and had to use trial and error until my codes worked. Overall, the extendible hashing code was quite difficult, however, the external merge sort was a bit easier.

Binary numbers

16: 10000   22: 10110   26: 11010   20: 10100

3: 11   1: 1   12: 1100   11: 1011

13: 1101   19: 10011   38: 100110

47: 101111   46: 101110

$0 \longrightarrow$ 16 22 26 20 x

$1 \longrightarrow$

2

$00 \overset{2}{\longrightarrow}$ 16 20 12

01

10 $\overset{2}{\longrightarrow}$ 22 26

$11 \longrightarrow$ 3 1 11 13 x

2

$00^2 \longrightarrow$ 16 20 12

$01^2 \longrightarrow$ 1 13

$10^2 \longrightarrow$ 22 26 38

$11^2 \longrightarrow$ 3 11 19 47 x

3

000^2 ⟶ 16 20 12
001^2 ⟶ 1 13
010^2 ⟶ 22 26 38 46 X
011^3 ⟶ 3 11 19
100^2
101^2
110^2
111^3 ⟶ 47

3

000^2 ⟶ 16 20 12
001^2 ⟶ 1 13
010^2 ⟶ 26
011^3 ⟶ 3 11 19
100^2
101^2
110^3 ⟶ 22 38 46
111^3 ⟶ 47