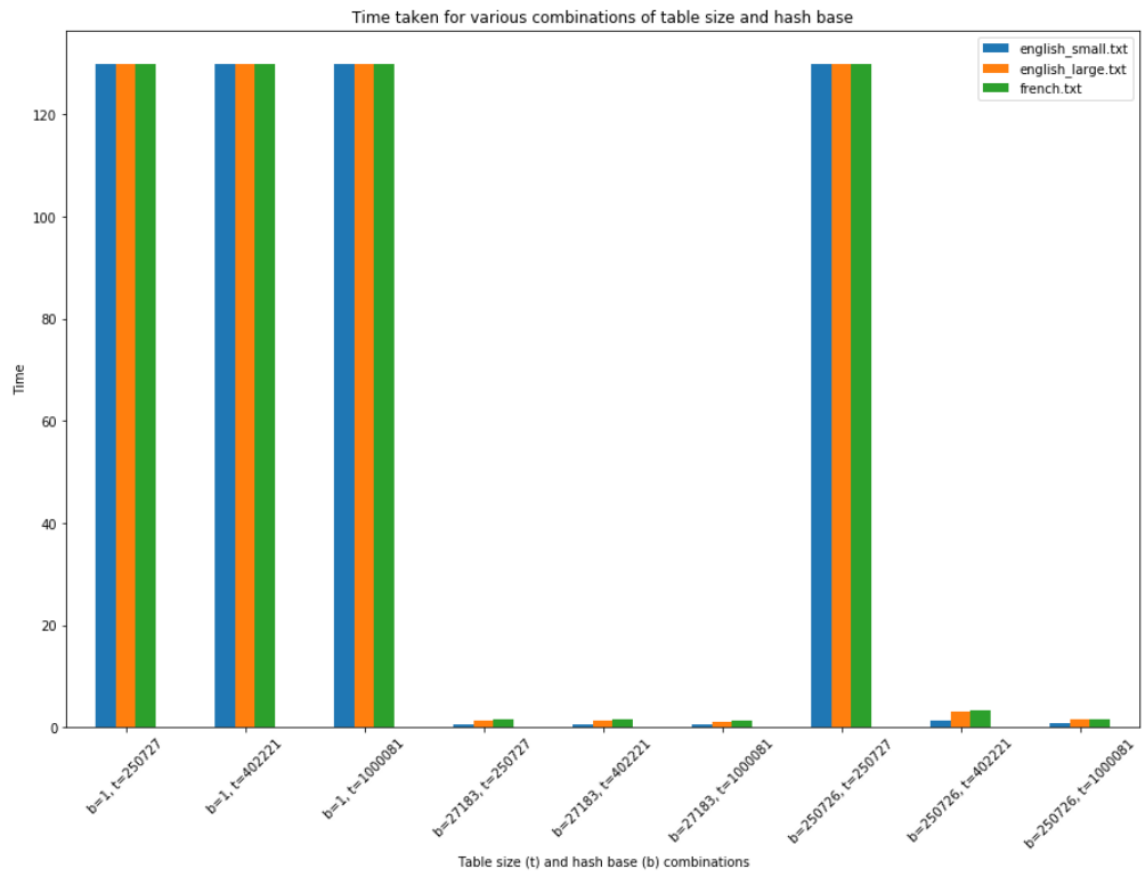
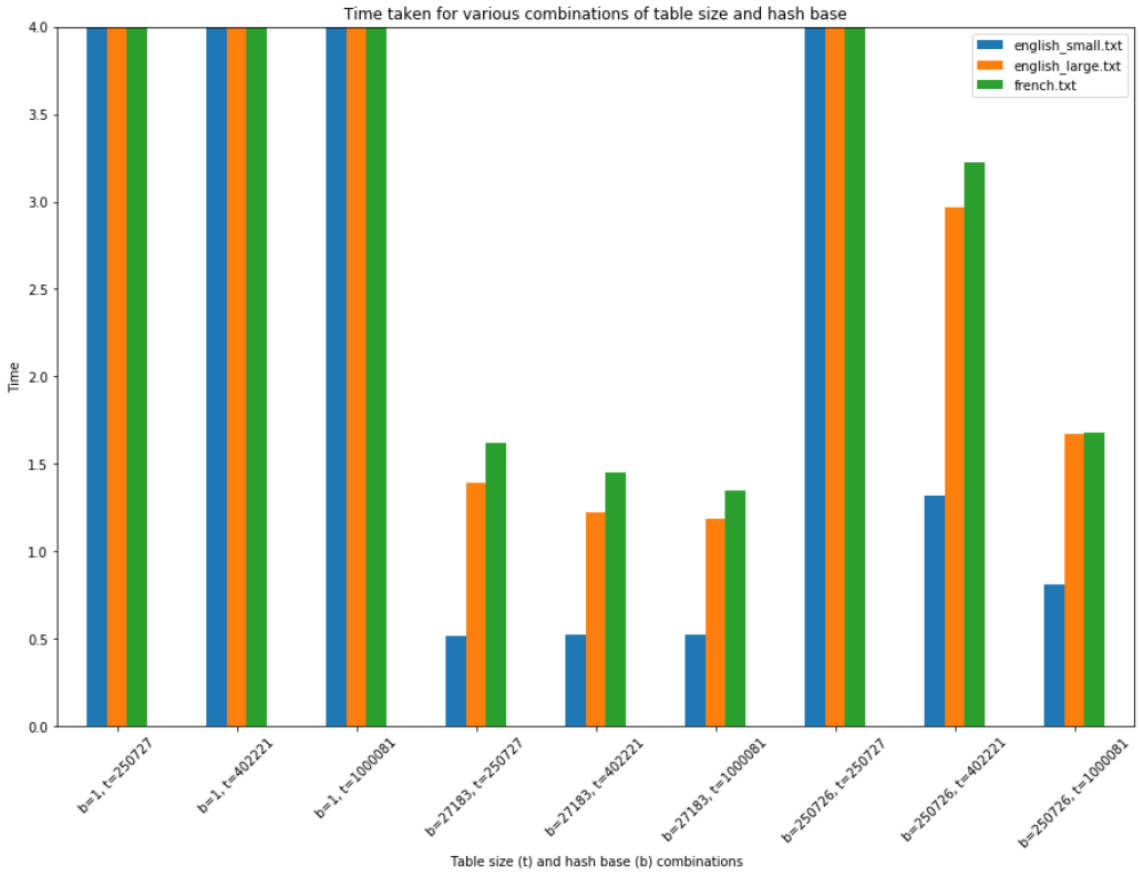
TASK 2



A closer look at the shorter bars (y-axis is from 0 to 4):



The time taken to insert keys into a hash table with a hash base of 1 are the worst. All nine cases timed out when the hash base was 1. This is because the less common factors the hash base has with the table size, the more spread out the hash values will be. 1 is a factor of almost every other number and so it wouldn't work well with any given table size. When the hash base was 250726, it took less time, but it still wasn't the best. Especially, when the hash base was close to the table size, it timed out for all three dictionaries. This means that the hash values calculated when a hash base and table size is close together, are too close to each other and result in collisions, hence it takes longer to compute the hash table. The best combinations are when the hash base and table size was far away from each other. In addition to that, the table sizes are all prime numbers meaning fewer common factors with the hash base and so less time taken to compute the hash table. Among all these combinations, hash base of 27183 and table size of 100081 seems to give the best results.