

COMP 200: Data Structures and Algorithms
Fall 2020
Lab 9: Maps and Hash Tables

Task 1: Implement the ChainHashMap class from Chapter 10 of the book.

Task 2: Computing a hash code can be expensive, especially for lengthy keys. In our hash table implementations, we compute the hash code when first inserting an item, and recompute each item's hash code each time we resize our table. Python's dict class makes an interesting trade-off. The hash

code is computed once, when an item is inserted, and the hash code is stored as an extra field of the item composite, so that it need not be recomputed. Reimplement our HashMapBase class to use such an approach.

Task 3: Use your ChainHashMap class to compute the 20 most frequent words from the attached file "(1) The Hunger Games.txt". You cannot use a Python dictionary for this task.