Noah Krill
Data structures
Project 4
Dianne Foreback

Summary of the project- This project uses unordered and ordered maps to store information about employees such as their departments, salary ranges, etc. Employee is a object that stores their information such as their last name, identification number, and their salary. This projects purpose was to see the differences and how to implement an unordered map and ordered map.

1. The runtime in clock ticks when creating the ordered map and unordered map with

   the department as the key are as follows

   Records.dat

   Ordered - 83845

   Unordered – 58426

   Records2.dat

   Ordered - 151769

   Unordered – 96716

   The reason I believe that that it takes longer on the ordered map then on the unordered map is that the ordered map has to order all the information biased upon the key value, while the unordered map does not need to order the values biased upon the key.

2. The runtime in clock ticks when creating the ordered map and unordered map with the salary range as the key are as follows

   Records.dat

   Ordered - 32300

   Unordered – 27327

   Records2.dat

   Ordered - 64861

   Unordered – 55450

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Again the reason I believe that that it takes longer on the ordered map then on the unordered map is that the ordered map has to order all the information biased upon the key value, while the unordered map does not need to order the values biased upon the key.

3. Each record from the records.dat file is duplicated in this records2.dat file. There are about twice the number of employees in the records2.dat file. That means that all the records in the map creation regardless to if its ordered or unordered take about twice as long as seen above. The basic principles between the two outputs are the same but the differences between the creation times will be different because of the number of employees.