Assignment for Module 5

Implementation using direct addressing: Please find below the worst case running times for the all the methods implemented:

add() – This method will have complexity of O(n) where n is number of elements in array as we are defining A[n] and assigning NULL to the index where we don't have data for that particular index

findByVoterID() – This method will have complexity of O(1) as we are directly searching the voterId based on the array index

findCountByCandidateId – This method will have worst case complexity of O(n) as we need to search through whole array to find out all the VoterId's linked to a CandidateId.

Implementation using Hash Tables Please find below the worst case running times for the all the methods implemented:

add() – This method will have complexity of O(1) for each record we are assigning a hash value based on the Key and each key will be unique.

findByVoterID() – This method will also have complexity of O(1) as we are directly getting the value (CandidateId) of the Key(VoterId) passed in the method.

findCountByCandidateId() – This method will have worst case complexity of O(n) as all keys are mapped to distinct locations but we must go through all the keys in order to get the actual count of records having a specified value.