Answer Sheet for Problem 2 and Problem 4.

Problem 2

Asymptotic Analysis for List-based Dictionary

Operation	Worst case time cost	Average case time cost
clear	$O(n)$	$\Theta(n)$
findByKey	$O(n)$	$\Theta(n)$
findByValue	$O(1)$	$\Theta(1)$
insertOneRecord	$O(1)$	$\Theta(1)$
insertASetRecords	$O(1)$	$\Theta(1)$
removeByKey	$O(n)$	$\Theta(n)$
size	$O(n)$	$\Theta(n)$

Problem 4

Asymptotic Analysis for Double List-based Dictionary

Operation	Worst case time cost	Average case time cost
clear	$O(n)$	$\Theta(n)$
findByKey	$O(n)$	$\Theta(n)$
findByValue	$O(1)$	$\Theta(1)$
insertOneRecord	$O(1)$	$\Theta(1)$
insertASetRecords	$O(1)$	$\Theta(1)$
removeByKey	$O(1)$	$\Theta(1)$
size	$O(n)$	$\Theta(n)$