

Assignment 1
Data Structures
CS 310
Stephen Giang

Time Complexities

searchStudent (String id) Time Complexity Analysis

int idSearch = Integer.valueOf(id);	time: 1	(1)
for (int i = 0; i < lastStudentIndex; i++)	time: $2n + 2$	(2)
if (studentArray[i].getID() == idSearch)	time: n	(3)
studentArray[i].printInfo(studentArray[i]);	time: 1	(4)
break;	time: 1	(5)
else if (i == lastStudentIndex - 1)	time: n	(6)
System.out.println("Student NOT FOUND!");	time: 1	(7)
printMenu();	time: 1	(8)

Time Complexity: $O(n)$

displayAll () Time Complexity Analysis

for (int i = 0; i < lastStudentIndex; i++)	time: $2n + 2$	(9)
studentArray[i].printInfo(studentArray[i]);	time: n	(10)
printMenu();	time: 1	(11)

Time Complexity: $O(n)$

Class Descriptions

Person - This Holds Name and Age. It also holds Getters and Setters for each.

Student - This extends Person, so it holds Name, Age, and ID. It also holds Getters and Setters for each.

StudentMethods - This is an interface that holds all the Options

MainClass - This implements Student Method, and runs all the different choices