

Individual Assignment

136096 ICS B2

Part A

With the number of elements inserted in an array i , the size of the array can be well figured out with the length variable that is `(arr.length)` whereby `length` returns the total size of the array. If we have an input of 10 elements the returned size will change from 5 to 10.

ii) The time complexity is not quadratic reason is

$$\begin{aligned} & o(1) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1) \\ & o(1) + o(1) + o(n) + o(n) + o(n) + o(n) \\ & = 9 + n^4 \end{aligned}$$

Thus, the time complexity is n^4 .

PART B

Time complexity is $o(n)$ that is $o(n) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1) + o(1)$

ii) A is more efficient than b since A has a higher time complexity than b.