binary\_interval (arr, length, minInterval, maxInterval)

INTEGER left <- 0 // O(1)

INTEGER right <- length – 1 // O(1)

WHILE left ≤ right // O(logn)

INTEGER mid <- (left + right) / 2 // O(logn)

IF arr of mid ≥ minInterval AND arr of mid ≤ maxInterval // O(logn)

RETURN 1 // O(1)

ELSE // O(logn)

IF arr of mid < minInterval // O(logn)

left <- mid + 1 // O(logn)

ELSE // O(logn)

IF arr of mid > maxInterval // O(logn)

right <- mid – 1 // O(logn)

RETURN 0 // O(1)

Total runtime of the function: 4 \* O(1) + 9 \* O(logn)