CONTAINS DUPLICATE 2

```python
def containsduplicatetwo(nums, k):
    index_map = {}
    for i, num in enumerate(nums):
        if num in index_map and i - index_map[num] <= k:
            return True
        index_map[num] = i  # Update the index regardless
    return False


# Example usage
print(containsduplicatetwo([1, 2, 3, 1], 3))  # Output: True
print(containsduplicatetwo([1, 0, 1, 1], 1))  # Output: True
print(containsduplicatetwo([1, 2, 3, 1, 2, 3], 2))  # Output: False
```