2(b)

An empty list arr of length N+M to store the merged result. The meging process begins with three pointers : i for starting over arr1, j for iterating over arr2, and k for iterating over arr. In each iteration, the code compares the current elements at indices i and j of arr1 and arr2 respectively. If the elements in arr1 and arr2 are equal, both elements are placed in arr consequtively, and both i and j pointers are incremented. The time complexity of this solution is O(n), where n is the summation of the length of the list. The meging process requires iterating over each element in both lists once and placing them in the resulting array since both input lists are already sorted, resulting in linear time complexity.