LAB ASSIGNMENT-5

1. Write a function doubleList that takes a list of integers and returns a new list where each element is doubled using the map function.

Sample Code:

```
object HOF {
        def main(args: Array[String]): Unit = {
        def doubleList(numbers: List[Int]): List[Int] = {
  numbers.map(_ * 2)
}
val numbers = List(1, 2, 3, 4, 5)
val doubledNumbers = doubleList(numbers)
println(doubledNumbers)
}
}
```

2. Create a function filterEvenNumbers that takes a list of integers and returns a new list containing only the even numbers using the filter function.
3. Write a function sumList that takes a list of integers and calculates the sum of all the elements using the reduce function.

4. Implement a function multiplyList that takes a list of integers and calculates the product of all the elements using the fold function.

5. Create a function capitalizeStrings that takes a list of strings and returns a new list where each string is capitalized using the map function.

6. Write a function findMaxValue that takes a list of integers and returns the maximum value using the reduce function.

7. Write a function flattenOption that takes a list of optional values and returns a new list that contains only the non-empty values using the flatMap function.

8. Implement a function removeDuplicates that takes a list of elements and returns a new list with duplicates removed using the fold function

9. Implement a function flattenList that takes a list of lists and returns a new list that contains all the elements of the nested lists concatenated together using the flatMap function.

10. Create a function countOccurrences that takes a list of strings and returns a map where each string is a key, and the value is the number of occurrences of that string in the list using the fold function.