Problem Set on Functors

1. Create a class Fib and its object fib, which can be used as: int n = fib(5) where now n contains fifth fibonacci number.

2. Create a functor to change every integer element of a vector to its square. Now modify the program to store the squares in another vector without changing the original vector.

3. Use functors to apply add(9) to each integer element of a vector. Now, apply add(10).

4. Create a functor to convert all integer values in an array to their positive counterparts. Thus, {0, 1, -2, 3, -4, -5} changes to {0, 1, 2, 3, 4, 5}.

5. Create a functor to convert all string values in a vector to lower-case.

6. Create functors to (i) initialize an array A, (ii) add i to A[i], (iii) add i'th fibonacci number to A[i], and (iv) print A.

7. Use functors to count the number of integers in an array that are less than 10.