1) Write a program contains the following template functions:
   i. Function to read an array of length n.
   ii. Function to display an array of length n in a list form.
   iii. Function to sort an array in ascending order by using merge sort method.
   iv. Function to sort an array in descending order b using quick sort method.
   v. Function to search for a given element in a given sorted array by using binary search method

   In main function, test these functions on float, char types

2) Write a program contains a template class Matrix that has:
   i. Data members: matrix M[20][20], and n (dimension)
   ii. Function to reads M.
   iii. Function to display M in a matrix form.
   iv. Function to multiply two matrices.
   v. Function to return the sum of the diagonals elements of M.
   vi. Function to return the max element in a specific column which its index given as a parameter — this function is written out the body of this class.
   vii. Function to return the minimum element in a specific column which its index given as a parameter — this function is written out the body of this class.

   In main function, test this class with its functions on types float, int types.

3) Drive from a template class Matrix a template subclass Vector that has data member: V [20], a function to set the elements of V such that each element V_i is the difference between max and min for i^{th} column for i=0,.., m-1, a function to return the sum of the elements of V, a function to display the elements of V in a list format, and a friend function to compare between the sum of elements for two objects and display the max sum — this function is written out the body of this class. In main function, test these classes with their functions on double, int types.