1. Implement Max Priority Queue using heaps
2. Implement a trie class with following function – InsertAWord, CheckAWord, getAllWordsWithThisPrefix
3. Given an array find minimum K Numbers
4. Find running median from a stream of integers. i.e. You are getting inputs from the user and after every input you need to tell the median to the user.
5. Given an array find all pairs of elements whose difference is equal to a given number k. i.e. find number of possible combinations of i & j, s.t. a[i] - a[j] = k
6. Given an array of n elements, where each element is at most k away from its target position, devise an algorithm that sorts in O(n log k) time.
7. Given weights and values of n items, put these items in a knapsack of capacity W to get the maximum total value in the knapsack. In other words, given two integer arrays val[0..n-1] and wt[0..n-1] which represent values and weights associated with n items respectively. Also given an integer W which represents knapsack capacity, find out the maximum value subset of val[] such that sum of the weights of this subset is smaller than or equal to W.
8. Given a rod of length n inches and an array of prices that contains prices of all pieces of size smaller than n. Determine the maximum value obtainable by cutting up the rod and selling the pieces.