Training Task 3 - Algorithms:- 5th Jan, 2016

Problem1:-
Algorithm for palindrome of a number.
Step1:- Read input from user. Let it be n.
Step2:- create a variable let it be rev. Initialize it to 0.
Step3:-check whether n is greater than or zero.
Step 4:-If n is not 0, then multiply the number rev with 10 and add the remainder of n%10.
Step 6:-now quotient n=n/10. If qu > 0
Step 7:-Now repeat the steps from 3 until n becomes 0.
Step7:- Once the number is equal to n==0, then return 1.
Step 8:- Now check this reverse number of n with n if(rev == n).
Step9 :- If it is true it is a palindrome. If not it is not a palindrome.
Step8:-Exit.

Problem2:-
Algorithm for generating anagram for the given input string.
Step1: Read the input string, let it be String. Find the length of the string let it be len.
Step2: Create a list be anagram.
Step3: Check the string is equal to null or "". Yes, return null or string('") respectively.
Step4: If not, then split the string until you get the last element. Store each element in another list.
Step5: Now create an index element i, check whether i is less than word length in the list.
Step6: Now concatenate each character element to the word in the list at position i. By creating two substrings str1 = word.substring(0,i), and str2 = word.substring(i). --> str1+ele+str2.
Step7: Now add the word to the list.
Step8: increment i and goto step 4 condition checking.
Step9: return the list.
Step10: Print the list.
Step11: Exit.

Problem3:-
Algorithm for Binary search.
Step1:- Let us consider a sorted array be A. find middle element, last element and first element in the array.
Step2:- Check if first element is less than last element, if not go to step8.
Step3:-If yes, find the middle element, middle =(first+last)/2.
Step 4:- Check if input number to be searched be num is equal to middle element or not.
Step 5:- If yes print the number(number searched) and go to step. If not got to step 6.

Step 6:- Check if middle element is greater than num or not, if yes last as middle-1 and go to step2.
Step7:- If not, make first element as middle+1 and go to step2.
Step 8:- Exit.