Problem Solving Steps

Program Assignment #1

**Problem #1**

* Given an array with 20 elements find the largest and smallest number.
  + - Defined the array and generated random 20 numbers.
    - Choose 20 random numbers, and I chose the following {90,66,48,37,19,62,93,5,58,17,29,38,32,97,55,44,61,38,42,10}
    - Find the smallest and largest number in the array using for loop
      * Read till the end of that array or the length of this array.
    - Declared two different variables one called small and one called large to store the smallest and biggest value in that array.
    - Using if statement to see which element is larger than the other.
      * If the element[i] bigger than the variable large (which is equal to 90 in the first loop) then
        + then large = to that element[i] in that particular loop.
      * If statement states that if the element in this particular loop is smaller than the variable small which equal to 90 in the first loop
        + then small = to the element in this particular loop.
    - Finally print out the smallest and largest value in that array whenever the loop ends.

**Problem #2**

Declare the given array in my code and called it array X = {10, 100, 40, 28, 98, 37, 12, 63}.

1. Copy the array in different array and call it array Y and making it bigger than array X by one different element and the reason for that is adding the average to the array.
2. Sort array X by descending order (big to small numbers), I used a bubble sort to sort array X and then print it out.
3. Calculate the average value of array X, which is we’re going to get the total of the elements 10+100+40+28+98+37+12+63 =388 then divide them by the number of the elements there which {1,2,3,4,5,6,7,8} = 388/8 = 48.50. Then insert the average value to our Y array and make sure that we inserted it in the right spot. Which I did added it to the last position then did another bubble sort to sort my Y array and lastly printed out on my output.
4. Perform comparison between Y and X by using ***Arrays.equals*** and then get the result as false, then delete the different which is going to be number 48 in the Array Y. I believe in Java doesn’t provide a direct method to remove a certain element in an array and once you declare an array the size of it it will be static so you cannot change it or reduce the size so we have to create a new copy of the array and reduced size because X and Y they’re not the same. So I created a new array has the similar elements in order and called it Z array.

**Problem #3**

I did created a string contains a long sentence that Dr. Das provided us, then the required in this question is count the words and found the high frequent words. I did use String.Split to split the words and then stored them into an array and then use a map to count the words and then print out how many times these words it’s been mentioned. I didn’t sort them but I showed all the words with counts and as we can see the word “**the**” mentioned 10 times, the word “**steps**” mentioned 6 times, “**of**” and “**and**” mentioned 4 times, but I don’t think these considered as word! And last is the word “**lower**” which mentioned 2 times.

**Problem #4**

* + - We are giving a string “**this is my first programming assignment**” which we need to reverse it, what I did here is splits all the words and stored them into an array and then run a for loop that will print the words backwards. Which I use
    - print(array.length -1 -i)