How to Run:

Assignment3.zip

->main.java is having method to run the program in src folder.

->replace all input file (e.g: "1.txt","2.txt"..........,"10.txt") in Assignment3 (Current) folder which is main folder.

->after running the main.java just wait for output in command line

->output integer will be corresponding with same sequence of input

Logic:

->loop goes to infinite until original (input array) find maximum nuber of folding

->I have used 2 algorithms

1) BruteForce for getting simple number of pairs available

2)Random Restart which provides Globally optimized solution

Steps:

-> First Program will find Existing pairs which satisfy all three constraints

-> Then Algorithm will cho0se random value where we can start again

-> if random restart will give maximum value then brute force which mean that we were previously stucked in local maxima AND random restart had found the global maxima.

->here algorithm will run maximum for 1 minute for those inputs which are more than 1000 in length

->for those having less than 1000 we can run it for (0.00002) in multiplication

For ex: for (int I=0;I<10;I++)----------------->this loop will run for 10 times

But if variable "I "is double then we can increase "i " in the fraction of 0.00002

In case suppose it require more than a minute to complete for loop then we can say stop loop an gives output within a minute.

-> Here random restart will not go sequentially but it will shuffle the String indexes so that it can make pair randomly. And checks that it can maximize the count or not

->so, for small input it may take time to check for all posibilities.