Assignment Set 2–A  
Due April 15th

2.1 Write a program that collects and process votes for five candidates and records the results in the following manner:

The candidates are numbered from 1 to 5. Votes are read from the screen and must be integer values from 1 to 5 associated with each candidate. A non-zero vote with a number outside this range but is considered a “spoiled” vote. Votes are entered one after the other, until a vote equal to 0 is entered, at which point the voting process stops and the results are printed on the screen. Write a program that:

(i) asks for votes in a loop until 0 is given,

(ii) within this loop calls a separate function that reads the vote from the screen. When the vote is returned to the main function, it is saved in a data file on the disk,

(iii) next and within the main loop, checks if the vote is valid or not. If the vote is not valid it records it as “invalid” (i.e., increases a counter of invalid votes). If the vote is “valid”, then it records it as valid and calls a separate function that assigns the vote to the right candidate (i.e., increases the right counter; NOTE: set up the counters for the 5 candidates as a one-dimensional array and pass it to the function with a pointer).

(iv) When a vote equal to 0 is given, then this vote is not counted but leads to the termination of the loop. At this point the program prints on the screen AND in an output file: the number of total votes, the number of valid votes, the number of invalid votes, and the numbers of votes for each of the 5 candidates.

2.2 Write a program that asks the user for an integer N, creates two one-dimensional arrays of integers of length N, loads (i) the first array with values equal the index of each element, and (ii) the second array with values equal to the index of each element plus 10. Then use a separate function that calculates and returns to the main function their sum and product. Then in four lines print the elements of the two arrays, their sum, and their product.
Format Requirements for Assignments

For every code you write – no matter how small – as a class assignment:

- Include a multiple-line comment at the top with the following information:
  - The name of the assignment
  - Your name
  - The date you turned in the code

- Insert comments throughout the code: just before every main code element, like a function, a conditional statement, a loop, a set of variable assignments, or print statements etc.

- Turn in a print-out of the code along with print-outs of all possible program outputs both in data and graph form, whenever applicable. Also turn in your answers asked as part of the assignments.

- E-mail me all the source-code files. In the subject line remember to include (i) your name, (ii) the name or number of the exercise.