Practice 25 – SE-DS File + Nested Array / List

Task 01: Declare a list of 10 elements. Initialize elements at random (with any range of your choice). Print elements in single line. Find and print average. Subtract all element from average. Print elements again in single line. Next, count and print number of negative elements and number of positive elements.

Sample Runs:

```
Length: 10
37 17 61 95 51 72 12 49 80 92
Average: 56.60
-19.60 -39.60 4.40 38.40 -5.60 15.40 -44.60 -7.60 23.40 35.40
Count of positive values: 5
Count of negative values: 5


Length: 10
18 96 79 13 54 39 54 28 67 86
Average: 53.40
-35.40 42.60 25.60 -40.40 0.60 -14.40 0.60 -25.40 13.60 32.60
Count of positive values: 6
Count of negative values: 4
```

Task 02: Declare a list of 30 elements to store marks of 30 students of a class. Initialize elements at random in range 1-100. The management is interested to divide students in three categories i.e. failures, above average and below average. For this purpose, calculate average of passed students only. Do following tasks in steps:

- Initialize marks and print in single line
- Print marks in a single line
- count number of pass students   (students with 50 or more marks are pass)
- sum number of pass students

- calculate and print average of pass students

- Next, print marks of fail students in single line
- Next, print marks of students with above average
- Lastly, print marks of student with below average

Note: Run different loop for each step

Sample Runs:

```
80 66 97 69 90 77 92 45 14 50 5 79 73 94 62 91 18 89 63 35 11 10 49 1 46 52
82 41 35 99
Average: 78.06
45 14 5 18 35 11 10 49 1 46 41 35
80 97 90 92 79 94 91 89 82 99
66 69 77 45 14 50 5 73 62 18 63 35 11 10 49 1 46 52 41 35
```

Task 03: Declare a list of 12 elements to store monthly sales of XYZ Company. Initialize elements at random (range 1000 to 2000) and print in single line. Company want to do different analysis. For example, difference of sale in first half of the year and second half of the year. Difference of sales in each quarter.

A year has two halves. First half has first six month and second half has next six month. Print total sales in first & second half.

There are four quarters of three months in a year. Like first quarter has January, February & March. The second quarter has April, May & June. Print sales of each quarter. (By adding sales of consecutive three months)

Note: Run different loop for each step

Sample Runs:

```
1081 1380 1789 1037 1865 1703 1549 1694 1526 1768 1557 1746
      Sale in Two Halves
First Half: 8855
Second Half: 9840

      Quarter Wise Sale
Sale in Quarter 1: 4250
Sale in Quarter 2: 4605
Sale in Quarter 3: 4769
Sale in Quarter 4: 5071
```