Practice 27 – DS-SE

Consider array/ list having duplicate elements for task 1-3.

```
x = [23, 45, 18, 23, 17, 45, 36, 23, 45, 18, 36, 45, 18, 17, 36, 23, 17]
```

```
int x[] = {23, 45, 18, 23, 17, 45, 36, 23, 45, 18, 36, 45, 18, 17, 36, 23, 17};
```

Task 01: Write code to print distinct elements only:

Sample Run:

```
23 45 18 23 17 45 36 23 45 18 36 45 18 17 36 23 17
23 45 18 17 36
```

Task 02: Create another array/ list having distinct elements only:

Sample Run:

```
X: 23 45 18 23 17 45 23 45 18 36 45 18 17 36 23 17
Y: 23 45 18 17 36
```

Task 03: Create two arrays/ lists having distinct elements and their counts/ frequency:

Sample Run:

```
X: 23 45 18 23 17 45 36 23 45 18 36 45 18 17 23 17
Y: 23 45 18 17 36
C:  4  4  3  3  2
```

Task 04: Create a 2D list of size 4 x 3. Means, there are four rows and three columns. Initialize elements at random with two-digit numbers. Print elements in single line. Next, print elements in tabular form. Next, print element in form, where columns are printed in rows ad rows are printed in columns:

Sample Run:

```
31 42 73 24 15 96 78 44 62 20 39 58

31 42 73
24 15 96
78 44 62
20 39 58

31 24 78 20
42 15 44 39
73 96 62 58
```

Task 05: Create a 2D list of size 4 x 4. Means, there are four rows and four columns. Initialize elements at random with two-digit numbers. Print elements in single line. Next, print both diagonals in separate lines.

Sample Run:

```
31 42 73 24 15 96 78 44 62 20 39 58 40 60 54 88

Principal Diagonal: 31 96 39 88

Secondary Diagonal: 24 78 20 40
```

Task 06: Create a 2D list of size 4 x 3. Means, there are four rows and three columns. Initialize elements at random with two-digit numbers. Print elements in single line. Next, print elements in tabular form. Print sum of each row at the end of each row:

Sample Run:

```
31 42 73 24 15 96 78 44 62 20 39 58

31 42 73 = 146
24 15 96 = 135
78 44 62 = 184
20 39 58 = 117
```