**Tutorial 3**

**CSE101: Introduction to Programming**

**(Winter 2021)**

1. Consider two Lists :

List1 = [1, 2, 3, 4, 5]

List2 = [11, 22, 33, 44, 55]

Create another list List3, which contains elements obtained by multiplying k-th element of List1 with k-th element of List2, and to subsequently compute the sum of elements in List3. (This effectively computes the dot product of two vectors, each of which is represented by a list.)

1. Create a List of tuples (roll\_no, total\_marks) for at least 15 students. Compute the maximum, minimum and average from the marks and assign them grades like A, B, C, D, E, F based on the marks obtained assuming the grading as follows:

A if total\_marks >= 85

B if total\_marks >= 70 and total\_marks < 85

C if total\_marks >= 60 and total\_marks < 70

D if total\_marks >= 50 and total\_marks < 60

E if total\_marks >= 30 and total\_marks <50

F if total\_marks < 30

1. Calculate the following using 2’s complement (in 8 bit) :
2. +7 - 3
3. +10 - 17
4. Represent the following floating point numbers in base 2 (binary):
5. 1890.875 (base 10)
6. -0.8125 (base 10)

**\*Try it Yourself\***

Try the following commands with the given values and analyze the result :

|  |  |
| --- | --- |
| **Command** | **Values** |
| bin | 5, 87, 1234, 9.6, -9 |
| hex | 65, 90, 9572, 6.98 |
| oct | 42, 546, 49.76 |