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| **Data Structures & Algorithms**  Diploma in CSF, IT  Year 2/3 (2020/21) Semester 4/6 | **Week 2** |
| **1-2 Hours** |
| **Tutorial 2 – Data Abstraction** | |

1. List 3 real-life examples in additional to the two already given, where the concept of lists can be adopted.

* Name list
* Contact list

2. If listA is an empty list of integers, what does it contain after the following statements are executed?

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| **Statements** | **Content of listA** |
| listA.add(20); | 20 |
| listA.add(0, 30); | 30, 20 |
| listA.add(10); | 30, 20, 10 |
| listA.add(2, 50); | 30, 20, 2, 50 |
| listA.add(1, 40); | 30, 40, 20, 50, 10 |
| listA.remove(1); | 30, 20,50, 10 |
| listA.remove(2); | 30, 20, 10 |

3. Suppose you want to include another operation in the List ADT to display all the items in the list:

(a) Specify the operation (as in .h)

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(b) Implement the operation (as in .cpp)

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4. Suppose you want to include another operation in the List ADT to replace an item in a certain specified position in the list:

(a) Specify the operation

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(b) Implement the operation

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