**Lists (p.61)**

**Abstract Data Types (ADT)** –

1. represents a collection of data having the same type and the operations on that data.

2. only describes its data and specifies its operations

3. it does not indicate how to store the data or how to implement the operations

4. it can be discussed independently of a programming language because it only describes a data organization independently of a programming language

**Data Structure** –

1. an implementation of an ADT within a programming language

Question 1:

public void add(String letter, int position);

public void add(String letter);

myList. add(c);

myList. add(a, 1);

myList.add(b, 2);

myList.add(d);

Question 2:

public void exchange(int position\_one, int position\_2);

myList.exchagne(3,7);

**mutable objects -**  objects that have a set method(s)

**immutable object** – objects that do not have a set method(s); example: String objects

Describe the concept of an abstract data type (ADT)?

An abstract data type is an interface that describes a functionality of a product. This is not based on any programming language but any programming language is able to put the interface to use based on functionality that is offered.

Describe the ADT list?

Abstract Data Type list is a collection of data that is organized in an environment. There are ways to access, modify, delete, and check data stored. However, since the list is an abstract data type it is not tied to any programming language but only offers insight into how it can be implemented based on functionality.

What is an ADT list in a Java program? This is designed as an interface in java.