**Course 2 - Backend and Database Development**

**Day 10: 3 Jan 2025**

**Collection Framework**

Collection framework provided set of pre defined classes and interfaces which help to add the collection of elements or data or item or object of any type like int, float, char, string or any user defined objects.

It provided lot of pre defined which help to add, remove, search, iterate very easily.

Normal variable.

int a=10;

a=20;

array

int abc[]={10,20,30,40}

int num[]=new int[10]; array is known as fixed in memory. It allow to store same data type values.

class Employee {

int id;

String name;

float salary;

}

Employee emp= new Employee();

emp.id=100;

emp.name=”Steven”;

emp.salary=14000;

array objects

Employee employees[]=new Employee[100];

employees[0]=new Employee();

employees[1]=new Employee();

Collection Framework Hierarchy : all classes and interfaces part util package.

Collection --🡪 interface

Set List Queue Map

All four are interfaces. Set, List and Queue internally extends Collections. But Map doesn’t extends Collection.

Set : it is use to store set of element or item or data. Set doesn’t allow duplicate. The element under the set may be maintain order, unorder or sorted. Set doesn’t provide index position.

Set classes

HashSet, LinkedHashSet and TreeSet. These are classes internally extends Set interface.

HashSet : it store the element in unorder format.

LinkedHashSet : it maintain the order. LinkedHashSet internally extends HashSet. It doesn’t provide any its own methods. Only it maintain the order.

TreeSet : sorted by default. In TreeSet we need to store same data type values. TreeSet internally implements SortedSet interface and that interface internally extends Set interface.

List : it is use to store list of items. It maintain the order using index position. List allow duplicate.

Queue: First in First out. It allow duplicate.

Map : it is use to store the information in the form of key-value pairs. Key must be unique and value may be duplicate. Using key we can get the value.