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Experiment No-7

Aim → Write program using vector in Java

Resource Required → Pentium IV, JDK, Printer

Theory →

Java Vector →
The vector class is an implementation of the list interface that allows us to create resizable arrays similar to the Arraylist class. The vector ~~Eate~~ class in Java is a part of javautil package.

Java Vector v/s ArrayList →
In Java, both Arraylist and vector implements the List interface and provides the same functionalities. However there exist same differences between them.
The vector class synchronizes each individual operation. This means whenever we want to perform some operation on vector, the Vector class automatically applies a lock to that operation. It is because when one thread is accessi a vector and at the same time another thread tries to access it, an exception called, ConcurrentModificationException is generated. Hence, this continuous use of lock for each operation makes vectorless efficient. However, in array lists, methods are not synchronized. Instead, it ~~was~~ uses the Collections, synchronizedList (). method that synchronizes the list as a whole.

Creating a Vector →

Here is how we can create vector in Java Syntax →

Vector <Type> Vector = newVector <> ();

Here Type indicates the type of a linked list.

For example,

// Create Integer type Linked List

Vector <Integer> vector = newVector <> ();

// Create String type linked list

Vector <string> vector = new Vector<> ();

Methods of Vector →

The vector class also provides the resizable array implementation of the list interface (similar to the Arraylist class). Some of the Vector method are →

1) Add Elements to Vector →

- add (element) - Adds an element to vectors.
- add (index, element) - adds an element to the ~~sacrificed~~ specified position.
- addAll (vector) - adds all element of a vector to another vector.

2] Access Vector Elements →

- get (index) - return an element specified by the index.
- iterator () - return an iterator object to sequentially access vector elements.

3] Remove Vector Elements →

- remove (index) - remove an element from specified Positio
- removeAll () - removes all the elements.
- Clear () - removes all elements. It is more efficient than removeAll ().

4) Other Vector Methods →

Methods	Descriptions
set()	changes an element of the vector
size()	return the size of the vector
toArray()	Converts the vector into an array.
toString()	Converts the vector into a String.
contains()	Search the vector for specified element and return a boolean result.

Conclusion → In this experiment we successfully created a Java program that utilized the vector class.

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