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## ECET 3810 Laboratory Exercise 5

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Objective: Introduce the student to the basic usage and concepts of the Vector data structure.

Procedures:

i) Start TextPad

ii) Copy the following Java source code into the code editor pane:

```
// ECET 3810
// Laboratory 5
// Modified By: put_your_name_here
// Due Date: fill_in_due_date
import java.util.Scanner;
import java.util.Vector;
import java.util.*;

public class DataStructures
{
    // Global Variable Declaration Section
    // Modify the for-loop such that it 'breaks'
    // if the random value inserted into the array is greater than 67
    private static int[] loopArray;
    private static Scanner sc;

    public static void main(String[] args)
    {
        sc = new Scanner(System.in);

        System.out.print("Enter Number of loops: ");
        loopArray = new int[sc.nextInt()];
        // initialize array with random numbers
        for (int i = 0; i < loopArray.length; i++)
        {
            loopArray[i] = (int)(Math.random()*100);
            System.out.println("Array value is: " + loopArray[i]);
        }

        // set up our vector
        // Modify the following code such that the vector capacity is
        // entered via the keyboard, not hard-coded as 20
        Vector v = new Vector(20);
        int i;
        for(i=0;i<20;i++)
        {
            v.addElement((int)(Math.random() * 100));
        }
    }
}
```

```
    }  
    System.out.println("size: "+v.size());  
    System.out.println("capacity: "+v.capacity());  
    Enumeration e = v.elements();  
    while(e.hasMoreElements())  
        System.out.println("Element is: "+ e.nextElement());  
}}
```

iii) Save the copied code to a file named “DataStructures.java” Note - in the “Save As” dialog box the “Save as type:” dropdown box should be “Java (\*.java)”

iv) Under the “Tools” menu select “Compile Java.” If your code doesn’t compile properly, your tools (SDK and TextPad) may not be configured properly, or something has been misspelled, deleted, or accidentally inserted. Carefully compare the code in your code editor with the code on this page.

v) Under the “Tools” menu select “Run Java Application.” Verify that the application runs correctly.

vi) Once you have verified that the program is working properly, find and read all of the embedded comments in the code.

vii) Once your modified code is functioning per the specified changes, add comments indicating the changes you made.

viii) Add your name in the “Modified By:” comment section.

**Turn in:** A cover sheet (course, lab number(s), your name, due date), introduction (at least two paragraphs introducing the lab and your modifications), screen captures of functioning code, a copy of your modified source code, and a conclusion (at least two paragraphs stating such things as: main skill(s) you learned, troubles you encountered, etc.). Do not turn in unstapled labs. Plan ahead and find a stapler.