

Experiment No: 6

Calculate the mutation score of the following programs using jumble Tool:

Program to detects the first occurrence of a duplicate and returns the value to the calling function

Code:

```
package testPackage;

import java.util.Arrays;
import java.util.List;
public class SampProg
{
    protected int repeatedNumber(final List a)
    {
        int len = a.size(),i,dup = -1;
        int[] arr = new int[len];
        for (i=0; i<len; i++)
        {
            arr[i] = a.get(i);
        }

        Arrays.sort(arr);
        try
        {
            for (i=1; i<len; i++)
            {
                if(arr[i] == arr[i-1])
                {
                    dup = arr[i];
                    break;
                }
            }
        }
        catch(Exception e)
        {
            System.out.println(e.getMessage());
        }
        return dup;
    }
}
```

test cases :

Mutating testPackage.SampProg

Tests: testPackage.SampProgTest

Mutation points = 11, unit test time limit 2.94s

M FAIL: (testPackage.SampProg.java:8): -1 -> 1

M FAIL: (testPackage.SampProg.java:10): 0 -> 1

.M FAIL: (testPackage.SampProg.java:10): negated conditional

M FAIL: (testPackage.SampProg.java:16): 1 -> 0

M FAIL: (testPackage.SampProg.java:18): 1 -> 0

M FAIL: (testPackage.SampProg.java:18): - -> +

M FAIL: (testPackage.SampProg.java:18): negated conditional

M FAIL: (testPackage.SampProg.java:16): += -> -=

M FAIL: (testPackage.SampProg.java:16): negated conditional

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Jumbling took 7.595s

Score: 18%