Lab 9a

Create a java program which can be used to evaluate how random the numbers generated by Math.random() really are. In the main method of the class declare an array that can store whole numbers and set the size to 10. Iteratively generate a random number between 0 and 9, 1000 times. If the random number returned is zero, increment the value stored in the corresponding element of the array by 1 and so on. After all the random numbers have been generated display the counts with a meaningful message that reports the total number of each digit generated. Do not include any selection statements in your solution.

Evaluation:

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| --- | --- | --- | --- | --- |
| Aspect | Objectives substantially met  90 – 100% | Meets Minimal Requirements  80-89% | Needs Improvement  79 – 79% | Failure to Meet Requirements  0 - 69% |
| Good Programming Practices  10% | Effective use of white space.  Clear and appropriate documentation.  Implements all needed error handling.  Data types and identifiers meet all expectations. | Use of white space and documentation with minor defect. Implementation of error handling general but lacking in minor aspects.  Selection of data types and / or creation of identifiers not consistent. | Generally meets expectations for good programming practices. | In the main does not meet expectations for good programming practices. |
| Iterative structures  10% | Iterative structure appropriate to the processing needed. Uses length attribute of the arrays to control processing | Iterative structure appropriate to the processing needed but loop control sometimes hard coded | Iterative structures not optimal and all loop control values hard coded | Iteration not used |
| Use of Arrays | All arrays properly declared and array elements consistently referenced by loop counter | Minor defects in array declaration and some array elements referenced by hard coded indexes | Arrays of inappropriate types and all element indexes hard coded | Arrays not incorportated |
| Algorithm Accuracy | All output correct and application supports specifications | Output exhibits some defect from form specified and / or application only supports most of specifications | Output exhibits major variance from specifications / only partially fulfills specifications | Application majorly fails to fulfill specifications |