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| Book Name: | [Mathematics and Computer Science: Research Updates](https://www.bookpi.org/bookstore/product/mathematics-and-computer-science-research-updates-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4910** |
| Title of the Manuscript: | **Performance Analysis of Linear Congruential Random Generator Algorithms Using Python and Java Languages** |
| Type of the Article | **BOOK CHAPTER** |

**Special note:**

# A research paper already published in a journal can be published as a Book Chapter in an expanded form with proper copyright approval.

**Source Article:**

**This chapter is an extended version of the article published by the same author(s) in the following journal. Journal of Advances in Mathematics and Computer Science, Volume 40, Issue 2, Page 40-52, 2025.**

**DOI: 10.9734/jamcs/2025/v40i21968**

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| **PART 1: Comments** | | |
|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This manuscript provides a comparative performance analysis of Linear Congruential Generator (LCG) algorithms implemented in Java and Python using different seeding techniques. The work is relevant for applications in IoT, AI, and statistical modeling where random number generation is crucial. The research fills a gap by specifically examining how programming language choice affects PRNG performance and behavior, which can guide developers in making appropriate implementation decisions. By establishing the asymptotic behavior range (ABR) for these algorithms, the study offers practical insights into performance  Characteristics at scale. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | The title "Performance Analysis of Linear Congruential Random Generator Algorithms Using Python and Java Languages" is suitable as it clearly indicates the focus of the research, mentioning both the specific algorithm (LCG) and programming languages being compared. |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | The abstract is generally comprehensive but has several grammatical issues and structural problems that should be addressed:  The first sentence is awkwardly structured and contains grammatical errors ("Giving Consideration to the era of Generic AI" should be rewritten more formally).  The abstract jumps directly into methodology without adequately establishing the research gap or problem statement.  The findings should be presented more clearly with specific performance metrics.  Suggested additions: Include specific performance differences (e.g., exact speed comparisons) and clarify what "asymptotic behavior range" means in this context. |  |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript contains scientifically sound methodology with appropriate experimental design. However, there are several issues:  The results in Tables 1-3 lack statistical analysis to verify significance of differences observed. Some claims about Java's performance being "10 times" better than Python are stated but not consistently supported by the presented data.  The explanation of ABR (Asymptotic Behavior Range) requires more clarification. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | The references appear sufficient and relatively recent, covering relevant literature on PRNGs, algorithm analysis, and programming language comparison. However:  Some references are inconsistently formatted (some with DOIs, some without).  Several references mentioned in text (e.g., "Durrani et al., 2022b") appear multiple times with slightly different descriptions.  Additional references on modern PRNG evaluation techniques and statistical testing would |  |

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|  | strengthen the paper. |  |
| **Is the language/English quality of the article suitable for scholarly communications?** | The language quality is below the standard required for scholarly communication. There are numerous grammatical errors, awkward phrasings, and formatting inconsistencies throughout the document. For example:  "Giving Consideration to the era of Generic AI" (awkward phrasing) "PRNG1 generator, PRNG2 generator" (redundant usage of "generator") Inconsistent use of punctuation and formatting in lists. |  |
| **Optional/General** comments | Given that this is an extended version of an already published paper, I would recommend  **major revisions** before acceptance. The authors need to:  The methodology is sound, but presentation could be significantly improved. Address language and formatting issues throughout  Strengthen the statistical analysis of results  Improve the explanation of ABR and its significance  Better justify claims about performance differences between languages  The tables and figures would benefit from improved formatting and clearer labeling.  If these issues are addressed, the paper could make a valuable contribution to the field by providing practical guidance on PRNG implementation choices. |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** |  |  |

**Reviewer details:**

**Maitri Patel, Institute of Advanced Research, India**