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Assignment 2 Results

* All the following statistical tests have been done at 95% confidence interval.

# Random Test 1: *“rand function provided as part of* ***python*** *(uses Mersenne Twister)”.*

Statistical method 1: χ2 test

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Random seed used | χ2 valuecalculated | Result (Pass/Fail) |
| 1 | 123 | 998.80 | Pass |
| 2 | 456 | 1021.20 | Pass |
| 3 | 789 | 1096.00 | Pass |
| 4 | 234 | 1047.20 | Pass |
| 5 | 567 | 958.80 | Pass |
| 6 | 890 | 1027.60 | Pass |
| 7 | 345 | 1028.00 | Pass |
| 8 | 678 | 989.20 | Pass |
| 9 | 901 | 1010.00 | Pass |
| 10 | 432 | 1034.00 | Pass |
| 11 | 765 | 1026.00 | Pass |
| 12 | 109 | 998.80 | Pass |
| 13 | 654 | 964.80 | Pass |

Statistical method 2: Kolmogorov-Smirnov test.

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Random seed used | Kolmogorov-Smirnov value calculated | Result (Pass/Fail) |
| 1 | 123 | 0.2295 | Pass |
| 2 | 456 | 0.1352 | Pass |
| 3 | 789 | 0.1999 | Pass |
| 4 | 234 | 0.1333 | Pass |
| 5 | 567 | 0.0965 | Pass |
| 6 | 890 | 0.0991 | Pass |
| 7 | 345 | 0.1311 | Pass |
| 8 | 678 | 0.2035 | Pass |
| 9 | 901 | 0.1538 | Pass |
| 10 | 432 | 0.1014 | Pass |
| 11 | 765 | 0.0994 | Pass |
| 12 | 109 | 0.1237 | Pass |
| 13 | 654 | 0.0676 | Pass |

# Random Test 2: *“rand function provided as part of* ***Java*** *language.”*

Statistical method 1: χ2 test

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Random seed used | χ2 valuecalculated | Result (Pass/Fail) |
| 1 | 123 | 958.00 | Pass |
| 2 | 456 | 1005.20 | Pass |
| 3 | 789 | 960.80 | Pass |
| 4 | 234 | 964.40 | Pass |
| 5 | 567 | 970.40 | Pass |
| 6 | 890 | 1026.00 | Pass |
| 7 | 345 | 989.60 | Pass |
| 8 | 678 | 999.20 | Pass |
| 9 | 901 | 1004.80 | Pass |
| 10 | 432 | 1083.60 | Fail |
| 11 | 765 | 1076.40 | Fail |
| 12 | 109 | 989.60 | Pass |
| 13 | 654 | 943.20 | Pass |

Statistical method 2: Kolmogorov-Smirnov test.

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Random seed used | Kolmogorov-Smirnov value calculated | Result (Pass/Fail) |
| 1 | 123 | 0.1062 | Pass |
| 2 | 456 | 0.1272 | Pass |
| 3 | 789 | 0.0911 | Pass |
| 4 | 234 | 0.1229 | Pass |
| 5 | 567 | 0.1266 | Pass |
| 6 | 890 | 0.1735 | Pass |
| 7 | 345 | 0.2065 | Pass |
| 8 | 678 | 0.0951 | Pass |
| 9 | 901 | 0.1387 | Pass |
| 10 | 432 | 0.0906 | Pass |
| 11 | 765 | 0.1687 | Pass |
| 12 | 109 | 0.2363 | Pass |
| 13 | 654 | 0.1107 | Pass |