

NIST Statistical Test Suite

Complete Analysis Report

Pseudorandom Number Generator (PRNG)

Evaluation Results

Python Implementation
Cryptographic Randomness Assessment

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Table 1: NIST Statistical Test Results - Complete Analysis Report

Test	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	P-VALUE	PROPORTION	RESULT
Frequency	20	6	10	12	5	9	11	11	6	10	0.058984	96/100	PASS
BlockFrequency	9	9	5	15	13	11	15	5	11	7	0.202268	98/100	PASS
CumulativeSums	18	12	12	13	7	7	7	8	9	7	0.202268	96/100	PASS
CumulativeSums	17	10	7	9	13	10	12	9	4	9	0.275709	97/100	PASS
Runs	11	7	13	10	5	13	14	10	9	8	0.595549	99/100	PASS
LongestRun	12	11	5	14	11	8	8	8	14	9	0.574903	98/100	PASS
Rank	8	10	8	5	13	11	9	16	8	12	0.455937	99/100	PASS
FFT	14	15	10	6	11	11	8	7	10	8	0.574903	98/100	PASS
NonOverlappingTemplate	13	11	11	6	13	6	12	11	10	7	0.678686	98/100	PASS
NonOverlappingTemplate	9	11	7	15	9	15	8	10	6	10	0.514124	99/100	PASS
NonOverlappingTemplate	11	15	16	11	4	17	9	8	5	4	0.010988	98/100	PASS
NonOverlappingTemplate	12	14	10	6	8	8	15	9	10	8	0.595549	98/100	PASS
NonOverlappingTemplate	6	7	12	10	8	9	13	17	10	8	0.383827	99/100	PASS
NonOverlappingTemplate	9	10	13	9	5	8	9	11	16	10	0.55442	99/100	PASS
NonOverlappingTemplate	10	11	8	11	7	14	10	3	14	12	0.350485	98/100	PASS
NonOverlappingTemplate	9	10	8	10	9	10	10	11	10	13	0.996335	98/100	PASS
NonOverlappingTemplate	16	12	11	9	11	9	10	9	7	6	0.637119	96/100	PASS
NonOverlappingTemplate	10	10	10	3	9	10	9	10	16	13	0.383827	98/100	PASS
NonOverlappingTemplate	13	9	8	16	9	10	5	9	13	8	0.437274	98/100	PASS
NonOverlappingTemplate	8	15	7	14	10	7	11	4	16	8	0.122325	99/100	PASS
NonOverlappingTemplate	15	10	8	6	11	7	11	14	11	7	0.514124	99/100	PASS
NonOverlappingTemplate	10	7	11	13	7	8	8	13	10	13	0.798139	98/100	PASS
NonOverlappingTemplate	8	11	8	15	9	8	10	12	10	9	0.883171	99/100	PASS
NonOverlappingTemplate	9	12	6	10	11	11	8	13	6	14	0.657933	98/100	PASS
NonOverlappingTemplate	13	10	11	7	8	10	13	11	9	8	0.924076	96/100	PASS
NonOverlappingTemplate	7	9	9	2	14	13	12	9	14	11	0.202268	99/100	PASS
NonOverlappingTemplate	15	10	9	10	5	11	11	5	7	17	0.137282	99/100	PASS
NonOverlappingTemplate	11	10	9	5	11	9	7	11	16	11	0.574903	97/100	PASS
NonOverlappingTemplate	8	10	7	10	20	9	6	11	7	12	0.108791	97/100	PASS
NonOverlappingTemplate	13	6	12	5	5	13	15	7	9	15	0.096578	97/100	PASS
NonOverlappingTemplate	12	11	8	10	10	8	10	12	10	9	0.99425	97/100	PASS
NonOverlappingTemplate	11	10	7	18	8	12	7	7	10	10	0.350485	96/100	PASS
NonOverlappingTemplate	15	11	13	8	3	11	13	14	8	4	0.080519	98/100	PASS
NonOverlappingTemplate	8	8	13	4	12	14	13	7	7	14	0.23681	99/100	PASS
NonOverlappingTemplate	11	9	11	4	14	7	7	13	16	8	0.202268	98/100	PASS
NonOverlappingTemplate	10	6	11	9	8	10	12	10	10	14	0.897763	98/100	PASS
NonOverlappingTemplate	16	6	8	16	9	8	13	11	6	7	0.153763	96/100	PASS
NonOverlappingTemplate	11	8	12	9	13	11	10	8	8	10	0.971699	98/100	PASS
NonOverlappingTemplate	8	9	8	14	8	6	14	12	9	12	0.637119	98/100	PASS
NonOverlappingTemplate	12	8	10	11	11	10	12	8	6	12	0.924076	98/100	PASS
NonOverlappingTemplate	9	13	12	11	12	7	10	6	8	12	0.816537	97/100	PASS
NonOverlappingTemplate	9	10	17	9	8	10	10	12	3	12	0.262249	99/100	PASS
NonOverlappingTemplate	9	6	15	7	9	15	11	12	5	11	0.289667	99/100	PASS
NonOverlappingTemplate	9	8	7	9	10	12	12	9	10	14	0.911413	98/100	PASS
NonOverlappingTemplate	13	10	6	5	7	8	13	11	15	12	0.334538	98/100	PASS

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Test	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	P-VALUE	PROPORTION	RESULT
NonOverlappingTemplate	9	6	13	13	7	11	6	10	17	8	0.249284	99/100	PASS
NonOverlappingTemplate	7	6	8	11	8	11	10	14	16	9	0.455937	97/100	PASS
NonOverlappingTemplate	16	8	6	12	6	4	9	13	11	15	0.096578	97/100	PASS
NonOverlappingTemplate	8	10	7	13	10	10	15	11	9	7	0.759756	99/100	PASS
NonOverlappingTemplate	12	14	9	11	10	10	7	10	11	6	0.851383	99/100	PASS
NonOverlappingTemplate	14	19	7	10	13	3	8	10	7	9	0.037566	95/100	FAIL
NonOverlappingTemplate	14	9	10	10	8	13	9	9	10	8	0.935716	97/100	PASS
NonOverlappingTemplate	12	5	6	10	7	11	13	13	14	9	0.437274	98/100	PASS
NonOverlappingTemplate	11	10	9	6	10	11	12	10	10	11	0.983453	98/100	PASS
NonOverlappingTemplate	9	13	3	10	11	4	10	13	16	11	0.115387	96/100	PASS
NonOverlappingTemplate	10	17	10	13	11	9	9	4	9	8	0.334538	99/100	PASS
NonOverlappingTemplate	14	13	9	11	8	8	10	9	8	10	0.911413	97/100	PASS
NonOverlappingTemplate	12	9	8	14	7	12	9	9	11	9	0.897763	97/100	PASS
NonOverlappingTemplate	10	8	10	13	6	11	14	6	12	10	0.678686	99/100	PASS
NonOverlappingTemplate	9	9	11	7	8	13	8	8	15	12	0.719747	98/100	PASS
NonOverlappingTemplate	12	10	10	10	7	13	7	11	10	0.955835	99/100	PASS	
NonOverlappingTemplate	17	6	8	10	11	13	9	8	9	9	0.474986	98/100	PASS
NonOverlappingTemplate	18	5	5	6	16	12	10	6	11	11	0.026948	98/100	PASS
NonOverlappingTemplate	10	14	12	10	10	12	8	5	13	6	0.55442	97/100	PASS
NonOverlappingTemplate	7	7	6	11	16	10	13	11	9	10	0.514124	98/100	PASS
NonOverlappingTemplate	10	8	8	13	12	15	12	6	8	8	0.595549	98/100	PASS
NonOverlappingTemplate	9	8	15	5	5	11	7	13	17	10	0.096578	99/100	PASS
NonOverlappingTemplate	15	13	9	8	9	12	7	14	6	7	0.401199	98/100	PASS
NonOverlappingTemplate	14	9	9	13	13	8	9	5	12	8	0.595549	96/100	PASS
NonOverlappingTemplate	14	10	12	5	12	8	13	5	12	9	0.419021	97/100	PASS
NonOverlappingTemplate	9	9	10	8	12	13	11	13	7	8	0.897763	99/100	PASS
NonOverlappingTemplate	11	12	8	15	8	7	9	9	15	6	0.437274	98/100	PASS
NonOverlappingTemplate	12	11	7	13	12	9	7	7	13	9	0.779188	97/100	PASS
NonOverlappingTemplate	10	12	6	18	9	5	10	12	9	9	0.23681	98/100	PASS
NonOverlappingTemplate	11	4	9	10	13	11	13	8	11	10	0.719747	98/100	PASS
NonOverlappingTemplate	9	20	5	10	9	8	10	9	10	10	0.153763	99/100	PASS
NonOverlappingTemplate	11	11	12	8	12	4	12	13	12	5	0.419021	97/100	PASS
NonOverlappingTemplate	13	8	12	9	9	8	11	10	12	8	0.955835	98/100	PASS
NonOverlappingTemplate	15	12	4	10	18	4	6	6	9	16	0.005358	99/100	PASS
NonOverlappingTemplate	11	9	15	8	7	14	11	12	9	4	0.366918	98/100	PASS
NonOverlappingTemplate	13	11	9	10	11	8	13	5	11	9	0.816537	98/100	PASS
NonOverlappingTemplate	11	10	8	10	6	12	13	5	12	13	0.616305	99/100	PASS
NonOverlappingTemplate	13	11	11	6	13	6	12	11	10	7	0.678686	98/100	PASS
NonOverlappingTemplate	13	5	6	14	14	15	8	5	10	10	0.137282	97/100	PASS
NonOverlappingTemplate	12	5	8	12	6	12	15	7	10	13	0.350485	98/100	PASS
NonOverlappingTemplate	10	17	6	11	13	12	9	5	9	8	0.275709	98/100	PASS
NonOverlappingTemplate	11	6	6	7	7	9	13	13	16	12	0.275709	99/100	PASS
NonOverlappingTemplate	11	12	10	6	12	12	10	5	11	11	0.779188	97/100	PASS
NonOverlappingTemplate	13	12	16	7	6	6	5	13	14	8	0.108791	98/100	PASS
NonOverlappingTemplate	11	10	9	9	10	16	8	8	8	11	0.816537	98/100	PASS
NonOverlappingTemplate	14	7	6	11	8	12	11	16	6	9	0.319084	96/100	PASS

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Table 1 – continued from previous page

Test	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	P-VALUE	PROPORTION	RESULT
NonOverlappingTemplate	10	10	12	6	11	7	9	7	10	18	0.319084	99/100	PASS
NonOverlappingTemplate	16	9	11	10	7	13	6	6	10	12	0.419021	98/100	PASS
NonOverlappingTemplate	12	11	6	10	10	13	14	5	8	11	0.574903	96/100	PASS
NonOverlappingTemplate	14	7	9	13	16	7	7	12	7	8	0.304126	98/100	PASS
NonOverlappingTemplate	5	9	8	15	6	5	10	11	18	13	0.048716	99/100	PASS
NonOverlappingTemplate	15	12	13	9	11	9	8	6	8	9	0.678686	95/100	FAIL
NonOverlappingTemplate	13	17	7	8	10	8	8	11	9	9	0.514124	97/100	PASS
NonOverlappingTemplate	14	7	8	13	12	10	10	7	6	13	0.574903	96/100	PASS
NonOverlappingTemplate	11	13	6	12	7	6	9	13	9	14	0.514124	98/100	PASS
NonOverlappingTemplate	7	13	10	15	8	9	9	10	9	10	0.834308	99/100	PASS
NonOverlappingTemplate	14	10	12	11	7	9	6	8	8	15	0.534146	97/100	PASS
NonOverlappingTemplate	5	8	13	12	13	7	14	6	12	10	0.383827	99/100	PASS
NonOverlappingTemplate	10	11	19	9	8	9	6	5	7	16	0.042808	99/100	PASS
NonOverlappingTemplate	9	12	9	13	7	7	15	10	10	8	0.719747	97/100	PASS
NonOverlappingTemplate	10	10	6	15	10	12	9	8	11	9	0.816537	99/100	PASS
NonOverlappingTemplate	12	14	9	5	6	11	6	13	9	15	0.249284	98/100	PASS
NonOverlappingTemplate	15	8	10	11	7	14	7	6	13	9	0.437274	98/100	PASS
NonOverlappingTemplate	10	9	12	9	11	13	9	9	9	9	0.991468	99/100	PASS
NonOverlappingTemplate	17	8	10	11	8	7	9	8	14	8	0.419021	97/100	PASS
NonOverlappingTemplate	11	5	7	10	7	10	10	13	17	10	0.334538	98/100	PASS
NonOverlappingTemplate	11	8	11	11	11	11	7	6	11	13	0.883171	96/100	PASS
NonOverlappingTemplate	10	13	10	11	6	13	10	9	10	8	0.911413	99/100	PASS
NonOverlappingTemplate	9	10	10	14	15	8	7	8	9	10	0.739918	99/100	PASS
NonOverlappingTemplate	12	12	14	13	11	7	9	7	10	5	0.55442	99/100	PASS
NonOverlappingTemplate	8	8	14	7	5	11	14	7	17	9	0.145326	99/100	PASS
NonOverlappingTemplate	9	14	8	7	7	13	10	5	13	14	0.366918	98/100	PASS
NonOverlappingTemplate	12	14	16	7	8	9	9	5	11	9	0.366918	98/100	PASS
NonOverlappingTemplate	15	8	11	12	11	11	7	9	9	7	0.779188	97/100	PASS
NonOverlappingTemplate	11	14	13	9	8	10	12	8	10	5	0.699313	98/100	PASS
NonOverlappingTemplate	14	12	10	9	11	12	7	9	10	6	0.816537	99/100	PASS
NonOverlappingTemplate	12	9	10	8	8	10	13	4	16	10	0.401199	98/100	PASS
NonOverlappingTemplate	12	12	8	14	12	11	10	4	9	8	0.595549	97/100	PASS
NonOverlappingTemplate	13	7	15	8	10	9	11	6	11	10	0.678686	98/100	PASS
NonOverlappingTemplate	8	16	9	4	15	4	11	15	13	5	0.019188	99/100	PASS
NonOverlappingTemplate	10	7	11	8	13	10	11	12	12	6	0.851383	99/100	PASS
NonOverlappingTemplate	10	6	5	10	11	14	7	10	13	14	0.419021	97/100	PASS
NonOverlappingTemplate	14	11	13	14	9	10	2	9	7	11	0.224821	99/100	PASS
NonOverlappingTemplate	6	8	7	19	6	15	13	9	6	11	0.037566	99/100	PASS
NonOverlappingTemplate	9	13	7	8	14	7	8	14	8	12	0.574903	98/100	PASS
NonOverlappingTemplate	11	8	14	15	8	10	7	10	9	8	0.699313	96/100	PASS
NonOverlappingTemplate	6	13	12	9	7	10	9	13	6	15	0.437274	99/100	PASS
NonOverlappingTemplate	13	5	9	11	12	12	11	11	9	7	0.779188	97/100	PASS
NonOverlappingTemplate	9	6	15	13	15	10	10	5	6	11	0.224821	96/100	PASS
NonOverlappingTemplate	16	13	11	11	6	12	12	5	5	9	0.202268	96/100	PASS
NonOverlappingTemplate	13	11	16	6	9	10	12	7	11	5	0.334538	99/100	PASS
NonOverlappingTemplate	16	9	10	10	12	6	6	10	12	9	0.55442	99/100	PASS

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Table 1 – continued from previous page

Test	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	P-VALUE	PROPORTION	RESULT
NonOverlappingTemplate	13	15	9	11	11	12	8	11	6	4	0.366918	96/100	PASS
NonOverlappingTemplate	14	9	6	8	9	13	11	12	7	11	0.719747	98/100	PASS
NonOverlappingTemplate	9	12	11	9	7	8	15	5	10	14	0.474986	99/100	PASS
NonOverlappingTemplate	8	8	11	9	9	11	15	13	8	8	0.798139	99/100	PASS
NonOverlappingTemplate	11	10	10	9	5	10	11	17	8	9	0.514124	97/100	PASS
NonOverlappingTemplate	17	13	5	6	15	9	4	6	14	11	0.021999	97/100	PASS
NonOverlappingTemplate	11	7	13	6	10	13	10	13	10	7	0.719747	99/100	PASS
NonOverlappingTemplate	9	20	6	13	6	6	11	6	11	12	0.035174	98/100	PASS
NonOverlappingTemplate	8	8	8	12	7	13	15	12	9	8	0.657933	98/100	PASS
NonOverlappingTemplate	9	7	12	13	10	12	8	8	13	8	0.851383	98/100	PASS
NonOverlappingTemplate	4	12	13	17	9	10	8	10	8	9	0.289667	99/100	PASS
NonOverlappingTemplate	10	9	9	15	11	7	5	11	14	9	0.534146	97/100	PASS
NonOverlappingTemplate	10	18	8	11	7	8	9	9	10	10	0.494392	96/100	PASS
NonOverlappingTemplate	12	11	13	6	12	6	12	12	7	9	0.657933	99/100	PASS
NonOverlappingTemplate	6	13	7	13	8	12	11	13	7	10	0.637119	98/100	PASS
NonOverlappingTemplate	15	8	13	10	9	8	8	8	11	10	0.816537	97/100	PASS
NonOverlappingTemplate	13	12	10	3	13	12	10	11	6	10	0.419021	98/100	PASS
NonOverlappingTemplate	13	4	12	13	11	8	10	9	9	11	0.678686	98/100	PASS
NonOverlappingTemplate	11	10	8	10	6	12	13	5	12	13	0.616305	99/100	PASS
OverlappingTemplate	7	4	10	18	8	8	10	8	13	14	0.102526	97/100	PASS
Universal	11	11	9	6	9	10	9	10	15	10	0.867692	98/100	PASS
ApproximateEntropy	15	13	10	12	15	10	2	10	8	5	0.075719	96/100	PASS
RandomExcursions	4	3	4	2	8	4	3	3	7	3	0.509162	41/41	PASS
RandomExcursions	5	5	4	2	6	4	6	4	4	1	0.764655	40/41	PASS
RandomExcursions	7	4	4	2	1	3	3	6	4	7	0.414525	40/41	PASS
RandomExcursions	6	2	2	3	2	4	6	9	2	5	0.174249	40/41	PASS
RandomExcursions	3	3	3	5	4	5	6	5	2	5	0.927083	40/41	PASS
RandomExcursions	5	4	5	4	2	4	3	5	7	2	0.811993	41/41	PASS
RandomExcursions	3	4	8	0	6	4	7	3	4	2	0.174249	40/41	PASS
RandomExcursions	8	2	4	5	2	1	4	6	4	5	0.371101	41/41	PASS
RandomExcursions	3	3	6	4	4	5	3	5	4	4	0.986869	41/41	PASS
RandomExcursionsVariant	4	2	6	4	6	2	2	4	6	5	0.71466	40/41	PASS
RandomExcursionsVariant	4	3	6	4	5	5	5	2	3	4	0.953553	40/41	PASS
RandomExcursionsVariant	4	3	7	4	7	4	4	4	2	2	0.66313	40/41	PASS
RandomExcursionsVariant	4	4	7	2	6	6	3	0	5	4	0.371101	40/41	PASS
RandomExcursionsVariant	5	4	2	5	6	6	4	1	2	6	0.559523	40/41	PASS
RandomExcursionsVariant	4	4	6	4	3	5	4	7	3	1	0.71466	41/41	PASS
RandomExcursionsVariant	3	4	4	5	6	3	5	2	5	4	0.953553	41/41	PASS
RandomExcursionsVariant	5	3	2	3	7	2	6	5	5	3	0.66313	40/41	PASS
RandomExcursionsVariant	4	2	5	7	4	4	7	3	1	4	0.509162	41/41	PASS
RandomExcursionsVariant	2	5	4	4	4	6	5	2	6	3	0.855534	41/41	PASS
RandomExcursionsVariant	3	7	4	5	2	2	2	7	5	4	0.509162	41/41	PASS
RandomExcursionsVariant	5	4	5	6	1	2	4	4	6	4	0.764655	41/41	PASS
RandomExcursionsVariant	4	8	6	4	1	9	1	2	4	2	0.038187	40/41	PASS
RandomExcursionsVariant	6	10	4	4	5	3	1	4	1	3	0.084294	41/41	PASS
RandomExcursionsVariant	7	4	7	7	5	2	5	2	1	1	0.1315	40/41	PASS

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Table 1 – continued from previous page

Test	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	P-VALUE	PROPORTION	RESULT
RandomExcursionsVariant	7	5	6	5	5	5	4	2	1	1	0.371101	40/41	PASS
RandomExcursionsVariant	5	11	5	5	3	2	3	4	2	1	0.038187	39/41	PASS
Serial	8	9	12	13	10	12	11	10	7	8	0.935716	99/100	PASS
Serial	8	15	6	10	12	5	12	11	13	8	0.419021	99/100	PASS
LinearComplexity	13	14	9	16	10	5	10	8	9	6	0.289667	97/100	PASS