# Report

**Functions:**

testUnif(n, func)

1. Purpose: Determines whether the samples generated by a given function are uniformly distributed.
2. Parameters:
    a. n: The size of the array (int)
    b. func: The sample-generating function
3. Procedure:
    a. Calls func 10,000 * n! times to generate samples.
    b. Creates a hashmap freq to track the frequency of each permutation.
    c. Increments the count in freq for each generated permutation.
    d. Converts freq values into an array freq_vals.
    e. Performs a chi-square goodness-of-fit test using chisqr.test on freq_vals.
    f. Returns the p-value of the test.

check(arrSize, test, funct)

1. Purpose: Verifies if the output of a given test function meets a specified p-value threshold.
2. Parameters:
    a. arrSize: The size of the array (int)
    b. test: The testing function to be applied
    c. funct: The sample-generating function
3. Procedure:
    a. Calls the test function with arrSize and funct as inputs.
    b. Checks if the returned p-value is greater than 0.05.
    c. Returns True if the p-value meets the threshold, False otherwise.

**Key Points:**

1. The testUnif function assesses uniformity of sample distribution using a chi-square test.
2. The check function serves as a general-purpose verification tool for testing functions and their outputs.
3. Both functions play a role in evaluating the statistical properties of sample-generating functions.