The script measures the performance of four different string-matching algorithms:

* Binary Sunday,
* Gusfield Z,
* KMP, and
* Rabin-Karp,

on two different sets of input strings.

The first set of input strings is generated randomly using the Python random and string modules. Specifically, a random string T of length 100000 is generated using lowercase ASCII letters, and a substring P of T is selected by taking the characters from index 5000 to index 7000.

The script then measures the time it takes to execute each of the four string matching algorithms 100 times using *timeit.timeit()*. The results are stored in *t\_binary\_sunday*, *t\_gusfield\_z*, *t\_kmp*, and *t\_rabin\_karp*.

After measuring the execution times, the script prints out the execution time of each algorithm, with the times formatted to five decimal places. It then compares the execution times of Binary Sunday and Gusfield Z to determine which algorithm is faster. If the execution time of Binary Sunday is at least twice as fast as Gusfield Z, the script prints out a message indicating that Binary Sunday is faster. Otherwise, an error message is printed.

The script then prints out the execution time of KMP and Rabin-Karp and performs a similar comparison to determine which algorithm is faster. Again, if the execution time of KMP is at least twice as fast as Rabin-Karp, the script prints out a message indicating that KMP is faster. Otherwise, an error message is printed.

Next, a new set of input strings is generated by selecting another random string T of length 100000 and creating a pattern P by concatenating 100 copies of a random string of length 100 with the original pattern. This generates a pattern of length 10000 with 100 copies of the same substring.

The script then measures the execution time of Rabin-Karp and Sunday on this new set of input strings, stores the results *in t\_rabin\_karp2* and *t\_sunday*, and prints out the execution times to five decimal places.

Finally, the script compares the execution times of Rabin-Karp and Sunday to determine which algorithm is faster. If the execution time of Rabin-Karp is at least twice as fast as Sunday, the script prints out a message indicating that Rabin-Karp is faster. Otherwise, an error message is printed.