

# Tiempos de Ejecución

Tomás Fuentes

19 de octubre de 2021

## 1. Introducción

Comparativa de tiempos de ejecución realizadas con los diferentes algoritmos de hashing, MD5, SHA1, SHA256 y Tomi.Hash. Se realizar las pruebas con 6 archivos diferentes, que contenian 1 linea de texto, 10, 20 y 50 lineas de texto, y dado que los tiempos eran bastante similares, se usaron dos archivos extra de 1000 y 5000 lineas de texto.

## 2. Resultados

### 1. MD5:

#### a) Test1

```
tomi@Tomi1-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test1 txt
MD5': e10adc3949ba59abbe56e057f20f883e | 209
Time measured: 0.000 seconds.
```

Figura 1: Primera ejecución MD5.

#### b) Test10

```
tomi@Tomi1-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test10 txt
MD5': e10adc3949ba59abbe56e057f20f883e | 209
MD5': 827ccb0eea8a706c4c34a16891f84e7b | 209
MD5': 25f9e794323b453885f5181f1b624d0b | 209
MD5': 5f4dc3b5aa765d61d0327deb882cf99 | 209
MD5': f25a2fc72690b778bb2a14e180ef6a0e0 | 209
MD5': 8afa8047f50a716e64932d995c8e7435a | 209
MD5': fcaa920f7412b5da7be0cf42b8c93759 | 209
MD5': f806fc5a2a0d5ba2471600758452799c | 209
MD5': 25d55ad283aa400af464c76d713c07ad | 209
MD5': e99a18428cb38d5f268853678922e03 | 209
Time measured: 0.001 seconds.
```

Figura 2: Segunda ejecución MD5.

#### c) Test20

```

Tom1@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test20 txt
MD5: e19adc3949ba59abbe56e057f20f883e | 209
MD5: 827cc08e8a8a7966d4c2416891f8e7b | 209
MD5: 25f9e799323b453805f3181f1b62400b | 209
MD5: 5f4dccc3b5aa765d61d8327de882cf99 | 209
MD5: f25a2fc72690b780b2a14e140ef6a9e0 | 209
MD5: 8afa847f50a716e64932d995c8e7435a | 209
MD5: fcea920f7412b5da7be0cf42b8c93759 | 209
MD5: f806fc5a2a0d5ba2471600758452799c | 209
MD5: 25d55ad283aa400af464c76d713c07ad | 209
MD5: e99a18c428cb38d5f260853678922e03 | 209
MD5: fc63f87c08d505264caba37514cd0cf | 209
MD5: aa47f8215c6f30a0dcd2b2a36a9f4168e | 209
MD5: 67881381dbc68d4761230131ae0008f7 | 209
MD5: d0763edaa9d9bd2a9516280e9044d885 | 209
MD5: 061fba5bdfc076bb7362616668de87c8 | 209
MD5: aae039d6aa239cfc121357a825210fa3 | 209
MD5: c3367701511b4f6020ec61ded352059 | 209
MD5: 0ac4f4539a14b3aa27deeb4c0bdf6e989f | 209
MD5: adff44c5102fca279fce7559abf66fee | 209
MD5: d8578edf8458ce0efbc5bb76a58c5ca4 | 209
Time measured: 0.001 seconds.

```

Figura 3: Tercera ejecución MD5.

d) Test50

```

Tom1@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test50 txt
MD5: e19adc3949ba59abbe56e057f20f883e | 209
MD5: 827cc08e8a8a7966d4c2416891f8e7b | 209
MD5: 25f9e799323b453805f3181f1b62400b | 209
MD5: 5f4dccc3b5aa765d61d8327de882cf99 | 209
MD5: f25a2fc72690b780b2a14e140ef6a9e0 | 209
MD5: 8afa847f50a716e64932d995c8e7435a | 209
MD5: fcea920f7412b5da7be0cf42b8c93759 | 209
MD5: f806fc5a2a0d5ba2471600758452799c | 209
MD5: 25d55ad283aa400af464c76d713c07ad | 209
MD5: e99a18c428cb38d5f260853678922e03 | 209
MD5: fc63f87c08d505264caba37514cd0cf | 209
MD5: aa47f8215c6f30a0dcd2b2a36a9f4168e | 209
MD5: 67881381dbc68d4761230131ae0008f7 | 209
MD5: d0763edaa9d9bd2a9516280e9044d885 | 209
MD5: 061fba5bdfc076bb7362616668de87c8 | 209
MD5: aae039d6aa239cfc121357a825210fa3 | 209
MD5: c3367701511b4f6020ec61ded352059 | 209
MD5: 0ac4f4539a14b3aa27deeb4c0bdf6e989f | 209
MD5: adff44c5102fca279fce7559abf66fee | 209
MD5: d8578edf8458ce0efbc5bb76a58c5ca4 | 209
MD5: 96e79218965eb72c92a509d06a330112 | 209
MD5: edb40efcfac3f098e72920a512081e0 | 209
MD5: 670b14728ad9902aeca32e22fa4f6bd | 209
MD5: 2345f10bb948c5665ef91f6773b3e455 | 209
MD5: f78f2077e949bee2d12a2c508fb6804f | 209
MD5: 0571749e2ac33aa7455809c6b0e7af90 | 209
MD5: c378985d629e99a4e86213db8cd5e70d | 209
MD5: 7c6a180b36896a0a8c02787eea0b0e4c | 209
MD5: da443a0ad979d5530df38ca1a74e4f80 | 209
MD5: 65fbef05e01fac390cb3fa073fb3e8cf | 209
MD5: 28f20a02bf8a021fab4fccc48afb584e | 209
MD5: 9fd8301ac24fb88e65d9d7cd1dd1b1ec | 209
MD5: bb7aedfa61007447dd6efaf9f37641e3 | 209
MD5: f4f068e71e0d87bf0ad51e6214ab84e9 | 209
MD5: d16d377af76c99d27093abc22244b342 | 209
MD5: d177b4d1d9e6b6fa86521e4b3d00b029 | 209
MD5: 53dd9c6005f3cdfc5a69c5c07380016d | 209
MD5: 74d738020dca22a731e30058ac7242ee | 209
MD5: 596a96cc7b7f9108cd896f33c44aedc8a | 209
MD5: 4297f44b13955235245b2497399d7a93 | 209
MD5: 37b4e2d82900d5e94b8da524fbeb33c0 | 209
MD5: 5ebc22904cc0e0f08eb769002a6ee69 | 209
MD5: 1c02f9c1ca2f65441065b43cd9339d6c | 209
MD5: dc599a9072fde3045dab59dbd1ae170b | 209
MD5: 1660fec581cdce64a2611494c439e1ba | 209
MD5: d1133275ee2118b63a577af759fc052 | 209
MD5: fe75dd065ff40b91c35fe8ff42f986c | 209
MD5: e807f1fcf82d132f9bb018ca6738a19f | 209
MD5: 84d961568a65073a3bcf0eb216b2a576 | 209
MD5: eb09d5e396183f4b71c3c798158f7c07 | 209
Time measured: 0.002 seconds.

```

Figura 4: Cuarta ejecución MD5.

Test1	Test10	Test20	Test50	Test1000	Test5000
0.000s	0.001s	0.001s	0.003	0.056s	0.259s

Cuadro 1: Tabla de los tiempos de ejecucion de MD5.

## 2. SHA1:

### a) Test1

```
tomi@Tomini-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test1 txt
SHA1: 7c4a8d09ca3762af61e59520943dc26494f8941b | 261
Time measured: 0.000 seconds.
```

Figura 5: Primera ejecución SHA1.

### b) Test10

```
tomi@Tomini-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test10 txt
SHA1: 7c4a8d09ca3762af61e59520943dc26494f8941b | 261
SHA1: 8cb2237d0679ca88db6464eac60da96345513964 | 261
SHA1: f7c3bc1d808e04732adf679965ccc34ca7ae3441 | 261
SHA1: 5baa61e4c9b93f3f0682250b6cf8331b7ee68fd8 | 261
SHA1: ee8d8728f435fd50f83852aaba5234ce1da528 | 261
SHA1: 775bb961b81da1ca49217a48e533c832c337154a | 261
SHA1: 20eabe5d64b0e216796e834f52d61fd0b70332fc | 261
SHA1: f1cf651c1a2191a760c0b2f161234f7958e26e4 | 261
SHA1: 7c222fb2927d828af22f592134e8932480637c0d | 261
SHA1: 6367c48dd193d56ea7b0baad25b19455e529f5ee | 261
SHA1: 6367c48dd193d56ea7b0baad25b19455e529f5ee | 261
Time measured: 0.001 seconds.
```

Figura 6: Segunda ejecución SHA1.

### c) Test20

```
tomi@Tomini-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test20 txt
SHA1: 7c4a8d09ca3762af61e59520943dc26494f8941b | 261
SHA1: 8cb2237d0679ca88db6464eac60da96345513964 | 261
SHA1: f7c3bc1d808e04732adf679965ccc34ca7ae3441 | 261
SHA1: 5baa61e4c9b93f3f0682250b6cf8331b7ee68fd8 | 261
SHA1: ee8d8728f435fd50f83852aaba5234ce1da528 | 261
SHA1: 775bb961b81da1ca49217a48e533c832c337154a | 261
SHA1: 20eabe5d64b0e216796e834f52d61fd0b70332fc | 261
SHA1: f1cf651c1a2191a760c0b2f161234f7958e26e4 | 261
SHA1: 7c222fb2927d828af22f592134e8932480637c0d | 261
SHA1: 6367c48dd193d56ea7b0baad25b19455e529f5ee | 261
SHA1: 5fae003990d9f083ddc2850e1c7f0909e76278a3 | 261
SHA1: 3d0f3b9ddcace30c00885e830e6e13a078c0bf | 261
SHA1: b03b74363bbb6ee02ce248c7a5344e92ffe76cc7 | 261
SHA1: ab87d20bdc7452e55738deb5f868e1f16dea5ace | 261
SHA1: de3460832ea070effabbc7832d7594b0bd1bb120 | 261
SHA1: 99996b911567c83cce17cd194f314975c57ddf1 | 261
SHA1: dd5fef9c1c1da1394d6d34b248c51be2ad740840 | 261
SHA1: 17b9e1c64588c7fa6419b4d29dc1f4426279ba01 | 261
SHA1: 782f9b10621e362d5bd0def3a279b5e0908c9ebb | 261
SHA1: b1b3773a05c0e0176787a4f1574ff0075f7521e | 261
Time measured: 0.001 seconds.
```

Figura 7: Tercera ejecución SHA1.

### d) Test50

```

Tomig@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test50 txt
SHA1: 7c4a8d09ca3762af61e59520943dc26494f8941b | 261
SHA1: 8cb2237d6679ca88db6464eac60da96345513964 | 261
SHA1: f7c3bc1d808e04732ad6f79965ccc34ca7ae3441 | 261
SHA1: 5baa61e4dc0b93f3f0602259b6cf8331b7ee68fd8 | 261
SHA1: eea49728f435fd50f83852aabb5330c1da528 | 261
SHA1: 775bb961b81da1ca49217a08e633c832c337154a | 261
SHA1: 20eabe5d64b0e216796e834f52d61fd0b70332fc | 261
SHA1: f1cf651c1a2191a760c0b2f161234f7958e26e4 | 261
SHA1: 7c222fb2927d828af22f592134e8932488637c0d | 261
SHA1: 6367c48dd193d56ea7b0baad25b19455e529f5ee | 261
SHA1: 5fee0239940f883d4c2854e41c7f989e75278a3 | 261
SHA1: 3d0f3b9ddcaccc38c4008c5e038e6c13a478cb4f | 261
SHA1: b03b74363bbb6ee42ce248c7a5344e92ffe76cc7 | 261
SHA1: ab87d24bdc7452e55738eb5f868e1f16dea5ace | 261
SHA1: de3460832ea070effabbc7032d7594bbde1bb12b | 261
SHA1: 99996b911567c83cce17cdf194f314975c57ddf1 | 261
SHA1: dd5fef9c1c1da1394d6d34b248c51be2ad740840 | 261
SHA1: 17b9e1c64588c7fa6419b4d29dc1f4426279ba01 | 261
SHA1: 782f9b10621e362d5bd0def3a279b5e0908c9ebb | 261
SHA1: b1b373a05c0ed0176787a4f1574f0075f7521e | 261
SHA1: 3dd4f2bf07dc1be38b20cd6e46949a1071f9d0e3d | 261
SHA1: b78034aacf3559fffbc545d9a9122efb93181f | 261
SHA1: c984aed014aec7623a54f0591da07a85fd4b762d | 261
SHA1: 7212a9e01329ea93a57f574bd9bf77695d5fda4 | 261
SHA1: 6c6167c272fde9018a09f06aefcf752b27ba | 261
SHA1: 2d0e34f907851aa599257d3831a1af008080b2f | 261
SHA1: 891c5feef171da85aad3fdb8130ba509b03f5ea | 261
SHA1: e38ad214043daadd64c102faec29d0dafe9da3d | 261
SHA1: 5c17fa03e6d5fc247565e1cd8ffa70e1bfe5b8d9 | 261
SHA1: 6e1a438cfe5a6c9e2165665f8c2258849ccc43f0 | 261
SHA1: 3d9209c4598bfb38b3c096081bee3a09097e939 | 261
SHA1: ba856797a6ed7651c7e6965efeead66cb632f0a5 | 261
SHA1: afaed75406bd414828cea4a5119f90c259c05755 | 261
SHA1: c8a50f632c3c4ba727fc05facb1883104e1d16ef | 261
SHA1: 1cb5bd5a9e45420321f44c72da5d90d7f0432ffb | 261
SHA1: 068942c83f0e6994d046f7ec01b8f42ba8f317a7 | 261
SHA1: 0ce7911e6479995d6c346d6f03eb723b5135309e | 261
SHA1: 81941add3e463581722bac84d02282cacf1c32c2 | 261
SHA1: dd2edb87ea9eb7a32fd4057276d3a1fab861cd5 | 261
SHA1: 601f1889667efaeb33b8c12572835da3f027f78 | 261
SHA1: 2d27b62c597ec858f6e7b54e7e58525e6a95e6d8 | 261
SHA1: e5e9falba31ecd1ae84f75caaa474f3a663f05f4 | 261
SHA1: fdb87dfd199045af7165780b11640b83768a0d57 | 261
SHA1: ab5e2bca84933118bbc9d48ffaccce3bac4eeb64 | 261
SHA1: e3c09f6049fc3e1acfb9f2bdfc5a3d2bb8e2ad | 261
SHA1: d659509721560831704c08f59ff09a0bb39d6df | 261
SHA1: 7522ef481b0a7a0b3513179d2780e6049ae2106 | 261
SHA1: 01b307acba4f54f55aafc33bb06bbbf6ca803e0a | 261
SHA1: 18c28604dd31094a8d69dae6f1bcd307f1afc5a | 261
SHA1: 675dc611bafbb0b7348dd3baf7e085b6916fb95ud | 261
Time measured: 0.003 seconds.

```

Figura 8: Cuarta ejecución SHA1.

Test1	Test10	Test20	Test50	Test1000	Test5000
0.000s	0.001s	0.001s	0.003	0.057s	0.259s

Cuadro 2: Tabla de los tiempos de ejecucion de SHA1.

### 3. SHA256:

a) Test1

```

Tomig@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test1 txt
SHA256: 8d969eeffecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6c92 | 418
Time measured: 0.000 seconds.

```

Figura 9: Primera ejecución SHA256.

b) Test10

```

tomig@Tomini-PC:~/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test10 txt
SHA256: 8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6c92 | 418
SHA256: 5994471abb01112afcc18159f6cc74b4f511b99806da59b3caf5a9c173cacfc5 | 418
SHA256: 15e2b0d3c33891ebb0f1ef609ec419420c20e320ce94c65fbc8c3312448eb225 | 418
SHA256: 5e884898da28047151d0e56f8dc6292773603d0d6aabbdd62a11ef721d1542d8 | 418
SHA256: e4ad93ca07acb8d908a3aa41e920ea4f4ef4f26e7f86cf8291c5db289780a5ae | 418
SHA256: 04e77bf8f95cb3e1a36a59d1e93857c411930db646b46c218a0352e432023cf2 | 418
SHA256: 8bb0cf6eb9b17d0f7d22b456f121257dc1254e1f01665370476383ea776df414 | 418
SHA256: 4980b1f29fa32ff18c95d0ed931fd48e1ad43a729251d6eddb3cece705edd4d05 | 418
SHA256: ef797c8118f02dfb649607dd5d3f8c7623048c9c063d532cc95c5ed7a898a64f | 418
SHA256: 6ca13d52ca78c883e0f0bb101e425a89e8624de51db2d2392593af6a84118090 | 418
Time measured: 0.001 seconds.

```

Figura 10: Segunda ejecución SHA256.

c) Test20

```

tomig@Tomini-PC:~/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test20 txt
SHA256: 8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6c92 | 418
SHA256: 5994471abb01112afcc18159f6cc74b4f511b99806da59b3caf5a9c173cacfc5 | 418
SHA256: 15e2b0d3c33891ebb0f1ef609ec419420c20e320ce94c65fbc8c3312448eb225 | 418
SHA256: 5e884898da28047151d0e56f8dc6292773603d0d6aabbdd62a11ef721d1542d8 | 418
SHA256: e4ad93ca07acb8d908a3aa41e920ea4f4ef4f26e7f86cf8291c5db289780a5ae | 418
SHA256: 04e77bf8f95cb3e1a36a59d1e93857c411930db646b46c218a0352e432023cf2 | 418
SHA256: 8bb0cf6eb9b17d0f7d22b456f121257dc1254e1f01665370476383ea776df414 | 418
SHA256: 4980b1f29fa32ff18c95d0ed931fd48e1ad43a729251d6eddb3cece705edd4d05 | 418
SHA256: ef797c8118f02dfb649607dd5d3f8c7623048c9c063d532cc95c5ed7a898a64f | 418
SHA256: 6ca13d52ca78c883e0f0bb101e425a89e8624de51db2d2392593af6a84118090 | 418
SHA256: b5a1a1f0b666f61cdd5ae6f8a5011334090f728c3b78060c5db993bf2ce0ef77bc | 418
SHA256: bd3dae5f991f08a4f9970222dfds0f59a120257cb001086387c0ae9df11f0979 | 418
SHA256: f95fc9d255314deeb0363be8c7a926caa4e2415c6372befaa8f6df060b7c4a3 | 418
SHA256: 000c285457fc971f862a79b70476c78012c8897063c6fa9c045f79a3b2d63f | 418
SHA256: f85b43067a280d4cc40f89cb78d8efff6e908727bc3cb43a9ae72b408d2eacc5 | 418
SHA256: e1fc45f78800e0505ff0b6aa079b9af149f225e260f59b1d20225357a8cce8ffdd8 | 418
SHA256: 481f6cc0511143ccdd7e2d1b1b94faf0a700a8b49cd13922a70b5ae28acaa8c5 | 418
SHA256: 34550715062af086ac4fab288de67ecbu44793c3a05c475227241535f6ef7a81b | 418
SHA256: c64975ba3cf3f9cd58459710b0a42369f34b0759c9967fb5a47eea48e8bea79 | 418
SHA256: 65e84be33532fb784c48129675f9eff3a682b27168c0ea744b2cf58ee02337c5 | 418
Time measured: 0.001 seconds.

```

Figura 11: Tercera ejecución SHA256.

d) Test50

```

Tom1@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test50 txt
SHA256: 8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12028c923adc6c92 | 418
SHA256: 5994471ab501112afcc18159f6cc74b4f511b99806da59b3caf5a9c173cacfc5 | 418
SHA256: 15e2b0d3c33891ebb0f1ef6e09cc419020e206c320ce94c65fbc8c3312448e5225 | 418
SHA256: 5e808089da2804715100e56f8dc6292773603d6daabdd62a11ef721d1502d8 | 418
SHA256: 64ad93ca07AcB8d908a3aa41e920ea4f0ef4f26e7f86cf8291c5db289780a5ae | 418
SHA256: 0de77bf8f95cb3e1a36a59d1e93857c411930db6d646c218a0352e432023cf2 | 418
SHA256: 8bb8cf6eb9b17d0f7d22b456f121257dc1254e1f0166537047638ea776df414 | 418
SHA256: 4980b1f29fa32f7f18c95d0ed931fd48e1ad43a729251d6eddb3cece785edd4d85 | 418
SHA256: ef797c8118f02dfb649607dd5d3f8c7623048c9c063d532cc95c5ed7a898a64f | 418
SHA256: 6ca13d52ca78c883e0f0bb101e425a89e8624de51db2d23292593af6a84118990 | 418
SHA256: b54a1af8b666f61c2dd5ae8fa54313409fd28c3b78664c5db993bf2c8e77bc | 418
SHA256: bd3dae5fb91f88a4f0978d222df58f59a124257cb081486387cb9aedf11fb879 | 418
SHA256: f95fc9d255314deeb3e3be8c7a926caa4e2415c6372befaa8fd6f69b7c4a3 | 418
SHA256: 000c285457fc971f862a79b786476c78812c8897063c6fa9c045f79a3b2d63f | 418
SHA256: f85b43067a280d4cc40f89cb78d8efff6e908727bc3cb43a9ae72b400d2eccc5 | 418
SHA256: e1fc45f7880e0505ff0b6a079b9af149f225e260f59b1d20225357a8cce8ff8d | 418
SHA256: 481f6cc0511143ccdd7e2d1b1b94fa0a700a8b49cd13922a70b5ae28acaa8c5 | 418
SHA256: 3450715062a4f086ac4fab288de67ecb44793c3a05c4d57227241535f6ef7a81b | 418
SHA256: c64975ba3cf3f9cd58459710b0a42369f34b0759c9967fb5a47ee488e8bea79 | 418
SHA256: 65e84be33532fb784c48129675f9eff3a682b27168c0ea744b2cf58ee02337c5 | 418
SHA256: bcb15f821479bd45772bd8ca866c00ad5f926e3580720659cc80d39c9d09802a | 418
SHA256: 3972905cc58310b37c7989feb13592ea71cf0902fd0fe4415782ece0c469d22c | 418
SHA256: 91b4d12823f7d28c5f08df69122de43f35f057a980d9619f6d5138485c9a283 | 418
SHA256: 61621148386fc0bf9c0b95ebeb5c37c375f90db53cf8313e09f9c34cc85b7e0e5 | 418
SHA256: abc529a4b672cbbbc532e84706cb0137be876ad53269df3b97fbd409cf76fe87 | 418
SHA256: a9114c4fd0ce01cddcf61b8be963bf4c1e2b0811c037ce3f1335fdd6f6ec223 | 418
SHA256: 7499aced43869b27f505701e4edc737f0cc346add1240dd4ba86fbfa251e0fc35 | 418
SHA256: 0b14d501a59442a01c6859541bcb3e8164d183d32937b851835442f69d5c94e | 418
SHA256: 8f27f432fcbcaa4b5180a1cc7a8fa166a93cda3c1bce6f19922dd519d02f4bb39 | 418
SHA256: 502913bfdd49eab564282df101e6d167321237e0ec66eedb2a438ed80fdeaa0 | 418
SHA256: 2e4b9cc2428beb7b7ff6a56c14d7304e472a23e890e91ef8a6b0b0380e89f9734 | 418
SHA256: fcf0d75cbe367c158d5cfaa31fa06656a3e6f626388d96ee81b35dda4310b58 | 418
SHA256: 8e0a1b0ada42172886fd1297e25abf99f14396a9400acbd5f20da20289c9f02f | 418
SHA256: 519ba91a5a5b4afbd9cd66f8805ce8c442b6576316c19c6896af2fa9bda6aff71 | 418
SHA256: 136c67657614311f32238751044a0a3c0294f2a521e573afa8e496992d3786ba | 418
SHA256: 9e861941ad8bf5bcb649e5fde92d712528200a216018c2437371498e6ab7683d | 418
SHA256: 102cf10b5286bad9cfefe5275ace3dd7dccc23931fb0ca93cd223daf9877cabd | 418
SHA256: 78fe3f05768ff3a95c74ffa366cc3474022d925ad5593af733bf8ac1ab0de6 | 418
SHA256: 6161b0a284159565a0f7d5df2dd2698b5f87906cd91ff5322caf179b451f5a41 | 418
SHA256: 96cae35ce8a9b0244178bf28e4966c2ce1b385723a96a6b838858cdd6ca0a1e | 418
SHA256: 6382dea1f5dc6e792b76db44a7b72ba468884e000b25e7928e621e27fb23cb | 418
SHA256: 2bb80d537b1da3e38bd30361aa855686bde0eacd7162fef6a25fe97bf527a25b | 418
SHA256: 5f3d6952c5c5e22077fabf461de80f1ce475752fe75a5cf5ca46bac438405619 | 418
SHA256: 7085170b455060e327e925f020853ca915e0682a3c30b09911c724a1f8b75f | 418
SHA256: 9ce0b0922a0f0a7ab0859adee70bd071a63321c6507da50cf4b0d6a69eb3e1b | 418
SHA256: fc52fab90ce0e37d24f4090e87481ac48960e9f73d517584a7ae5c6u535ac4 | 418
SHA256: 2ea0d25e1920dc0ba247fcd47f514f3e8ad6234e704277836df405a6f80ed6c | 418
SHA256: c775e7b757ede630cd0a1113bd102661ab38229ca52a6422ab782862f260606 | 418
SHA256: 73cd1b16c4fb83061ad18abb29b9643a68d4640075a466dc9e51682f84a807f5 | 418
SHA256: fc881aa34d4460e1012dec26ccda0b469d6c8359e91dc674dab4c095b9f8832 | 418
Time measured: 0.003 seconds.

```

Figura 12: Cuarta ejecución SHA256.

Test1	Test10	Test20	Test50	Test1000	Test5000
0.000s	0.001s	0.001s	0.003s	0.059s	0.271s

Cuadro 3: Tabla de los tiempos de ejecucion de SHA256.

#### 4. TOMI\_HASH:

a) Test1

```

Tom1@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test1 txt
g='12'(%bYE.YRgQ/%KDE/EQ | 163
Time measured: 0.000 seconds.

```

Figura 13: Primera ejecución Tomi.Hash.

b) Test10

```

tomi@Tomi-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test10 txt
G=']2)(%abyE.YRgQ/%KDE/EQ | 163
G=']2$'&`aJI0WPJT,(HFG-GM | 163
G=']2)'+[e\H1VodN2%KDE/EK | 163
82Y"PbYw$5%8t$-7*Zg0@6L). | 163
1=U%>LVh+*!;b.*&#ec9.@i:' | 163
8CO#<XZf$%3'&.(+k]1,,m8. | 163
G=']2)"$bcZF3TTis-)G@H,HN | 163
:@IGRb\%3#>l*-,#dm2>9i() | 163
G=']2)"cd[G2UNCu+'IBC1CQ | 163
)3I'5&HU1eVH*)"JT,U,H,H! | 163
)3I'5&HU1eVH*)"JT,U,H,H! | 163
Time measured: 0.001 seconds.

```

Figura 14: Segunda ejecución Tomi\_Hash.

c) Test20

```

tomi@Tomi-PC:/mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test20 txt
G=']2)(%abyE.YRgQ/%KDE/EQ | 163
G=']2$'&`aJI0WPJT,(HFG-GM | 163
G=']2)'+[e\H1VodN2%KDE/EK | 163
82Y"PbYw$5%8t$-7*Zg0@6L). | 163
1=U%>LVh+*!;b.*&#ec9.@i:' | 163
8CO#<XZf$%3'&.(+k]1,,m8. | 163
G=']2)"$bcZF3TTis-)G@H,HN | 163
:@IGRb\%3#>l*-,#dm2>9i() | 163
G=']2)"cd[G2UNCu+'IBC1CQ | 163
)3I'5&HU1eVH*)"JT,U,H,H! | 163
6:I"EXU1i'"*k""&b,b,6f+, | 163
2T(>-KtG-)1a*)2!ex$70_1" | 163
+2H(@\Y_25,>d"-/$ZY<00L1E | 163
5@T6>LTb6+>j$)0!na272_>+ | 163
40\,ELsb"1">i$166r'27,f>* | 163
26Y"BVH]/#%.'*%6-l]6+1_81 | 163
B:6^5$#('c\J3VQhT**HCF,JL | 163
5:I':XS'+3&6b!(2#au(54c(6 | 163
)DN%>LHF,*)>^(#//rU613_>! | 163
9HK!MLXj/$6>n,B,mm4@,l97e | 163
Time measured: 0.002 seconds.

```

Figura 15: Tercera ejecución Tomi\_Hash.

d) Test50

```

Tom1@Tomini-PC: /mnt/d/Criptografia/Laboratorio4-Criptografia$ ./test test50 txt
G='J2)($abyE.YRgQ/%KDE/EQ | 163
G='J2$'& aI0WPJT,(HFG-GM | 163
G='J2)'*+fe\WUODN2%KDE/EM | 163
82Y"PbYwGSN0$5-7*Zq6@6L). | 163
1=Uk>LVh+*+;b.*&#ee9.@ii.' | 163
0COM<XZf$%$%3'&,(+k)1,,#B. | 163
G='J2)"$bcZF3TTis-)G0H,HN | 163
:0IGRb\&%3#>1*+,#dm2>*9i() | 163
G='J2)'*+cd[G2UNCu+*IBC1CQ | 163
)3I'5&HU1e\H^>)"jT,Uk,H,H! | 163
6:I"EXU\1'"*k""&*b.,6f*+ | 163
,2T(>_KT&-)1a*)2!eX$70_1" | 163
*2H(@\Y_25,>d"-/SZV<00L1E | 163
5@T&>LTb&+>j$)0!ra272_>+ | 163
4@\\,ELsb"1">i$16&r'27,f*> | 163
26Y"BVH]/#%.'*%6-L]G+1_81 | 163
B:&^5$#('c\J3VQhT+*HCF,JL | 163
5:I):XS'+36&bi(2#aU(54c(& | 163
)DNk>LHf,*>^(&#/rU613_>! | 163
9HK!MLXj/$&>n,B,mm4@,l97e | 163
G>)'6$($ce]J.ZTjU+%LFH+JQ | 163
1=Uk>hp_%Z+r""&^1,56*3] | 163
H?+a7#)Hdf+K-[UkV)$%GI*HR | 163
5:2)>_SX'+-b\1'6'0H*,3f+* | 163
<:Hk>e[\~/7q""4!kh,0_72 | 163
;FT"AUX\1YpH$-l11</c3#q | 163
+9U_H_Hg/36U'$':.*H+8+11 | 163
82Y"PbYwG&-8p,*)"&d$<:q40 | 163
;0I_>eZb13)7p$'B!kg2,*_71 | 163
)7Z)Ha'T&'&4k,$-ac1B(h9& | 163
.CO,GWZY"-)3a(1)#^b'<-L.# | 163
*FZ#>eM_%U'9q&-5&rV8;-_7$ | 163
8FX!EXWh"&*"m*+&^rV8;-_7$ | 163
)7M,ETUZ/*-3d&':('Y/*5a** | 163
2@X-:aQb"2-3g$-7%g^2;+[3( | 163
4:\,KcVb(*%&b'+,)'e',?_15- | 163
2FY#BaQh!'"%3g*.*#g^8<;c3( | 163
4@\\,FXSb"1"*i$16'^^'27,g*+ | 163
.FIGRb\Y13#>L*!&#dm2>-o() | 163
G='J2)'$&(%ae\H.YRjT,%KDH,HQ | 163
.@U#;TS_.'!9_*'/0c2=)1*Z | 163
;6I!>gZX1$)9p&#)lmg(,9_91 | 163
)7J!>THa0$&^#1)!ZU1-9_&! | 163
+2XNHfJT+*18'+-/)1W9;318! | 163
26TMBYLe1YH"1'6,cV170'+0* | 163
2@Y)NTQb1,'&g$3/Z^2</o&C | 163
*FH/EXZU1/4,1b($&[('<)&o'E | 163
G='J2)'*+[f]I0WPe01-WFG-GM | 163
;FV,k'Ha1!'"*o"$--nd(;4[31 | 163
02T#:[0T&(-e*)-%a$75[-& | 163
Time measured: 0.004 seconds.

```

Figura 16: Cuarta ejecución Tomi.Hash.

Test1	Test10	Test20	Test50	Test1000	Test5000
0.000s	0.001s	0.002s	0.004s	0.065s	0.317s

Cuadro 4: Tabla de los tiempos de ejecucion de Tomi.Hash.