For all algorithms, the entropy value increased after encryption. In the case of

homogeneous text, the entropy increased the least with the DES algorithms

and IDEA, the appearance of encrypted texts betrays the nature of the text - there are many repeated

letters, which the histograms also show. For the AES algorithm, the entropy

has increased significantly and is close to the maximum possible, it is impossible to see with the naked eye,

what text has been encrypted, the histograms much more flattened than in the case of

plaintext. For medium-differentiated text, the entropy also increased

more for the AES algorithm, for it is also close to the maximum possible

achievable, but the difference is not as pronounced as in the case of text

homogeneous. In texts encrypted with IDEA and DES algorithms, some characters

occur more frequently than others, this is visible in the histograms, but it is more difficult to grasp

this difference than with homogeneous text.

In the case of normal text, the entropy has also increased, but

for all 3 analyzed algorithms it is at a very similar level,

close to the maximum. The histograms also have a very similar shape, quite visible

is the equalization of the level of occurrence of individual characters.

The IDEA algorithm changes the entropy of the text most weakly for a key consisting of

of zeros alone, for a key containing cyclic repetitions and generated

randomly, the entropy is higher, highest for encryption of normal text

and similar for both types of keys. Histograms not very aligned, visible are some

characters repeating clearly more often than others. In the DES algorithm, the entropy also

increased the least for a key consisting of only zeros, an interesting observation is the very

small increase in the entropy of encrypted homogeneous text using a key

containing repetitions - this may be a mere coincidence. When encrypting texts

more varied values of the key did not play a major role, more evident is the influence of the

the very nature of the encrypted text, the histograms look similar within a single

type of text. The AES and Twofish algorithms show a large change in entropy regardless of the

with the length and complexity of the key used - the entropy is close to the

maximum in both cases, histograms similarly flattened for both text

homogeneous, as well as normal, it is impossible to indicate characters occurring clearly

more frequently.