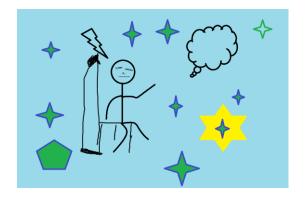
Zadanie 11 Hashe

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Obliczanie Hasha



Zdjęcie 1



Zdjęcie 2



Obliczanie hasha za pomocą SHA – 256

```
m1 = hashlib.sha256()
m2 = hashlib.sha256()

with open("Bez_tytułu.bmp", "rb") as f:
    img1 = f.read()

with open("Bez_tytuu_zmieniony_byte.bmp", "rb") as f:
    img2 = f.read()

m1.update(img1)
m2.update(img2)
```

Wynik

```
print("SHA - 256:")
print(m1.hexdigest())
print(m2.hexdigest())
```

```
SHA - 256:
a177db5fcf7f14a9031d5215009ddfbf779e19ce8b11b111f07a38478d3c3a70
156ef747bec8477b316a3f1e2c93227c170f544095dbf593e8cc75bb2da53ada
```

Różnice

```
for i in range(0, len(img1)):
   if img1[i] != img2[i]:
     print(img1[i], img2[i])
```

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Hashowanie za pomocą

```
md51 = hashlib.md5(img1)
md52 = hashlib.md5(img2)
```

Wynik

```
print("MD5:")
print(md51.hexdigest())
print(md52.hexdigest())
```

```
MD5:

09a4715ba3297470ff7c7b4524f35405

aa79a5b268a67d5f620ca9c261536507
```