

Realizare Mozaic

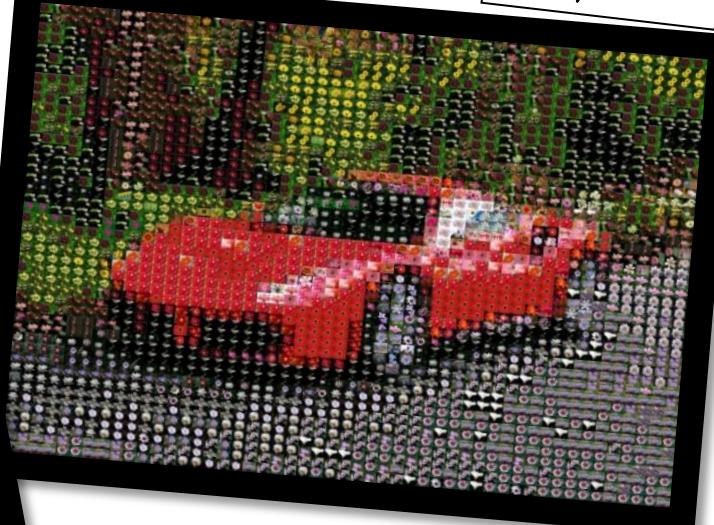
-project-

Nume: Rosioru Talida Andreea

Grupa: 353

```
params.criteriu =  
'distantaCuloareMedie';
```

50 piese

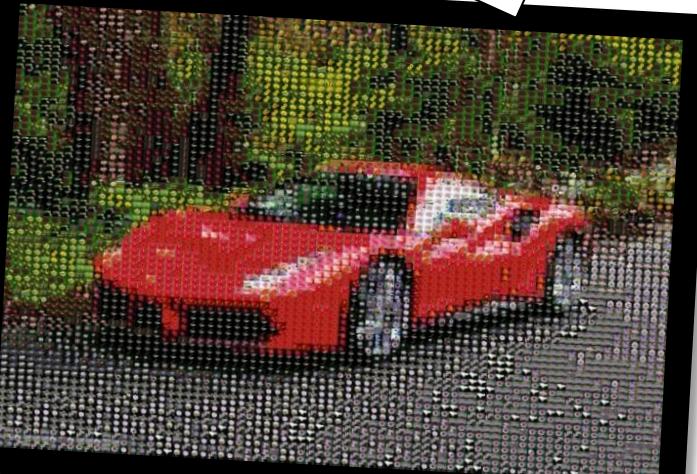


25 piese

original



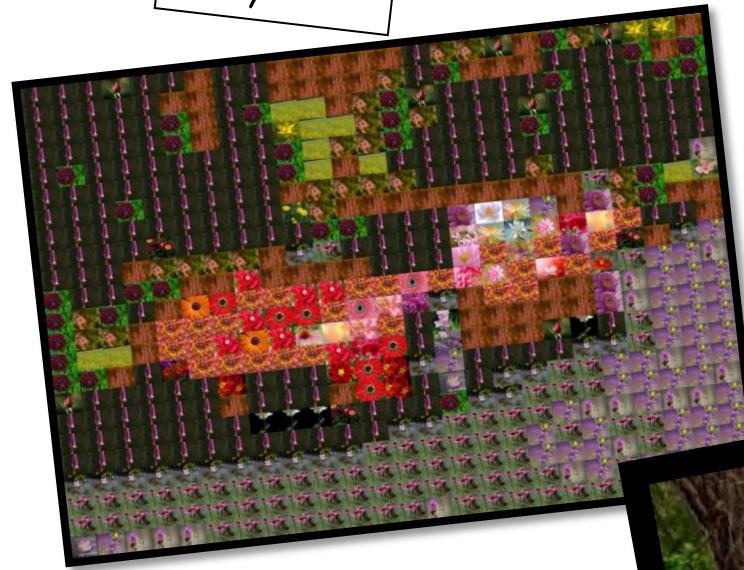
75 piese



100 piese



25 piese



params.criteriu = 'distantaCulori'

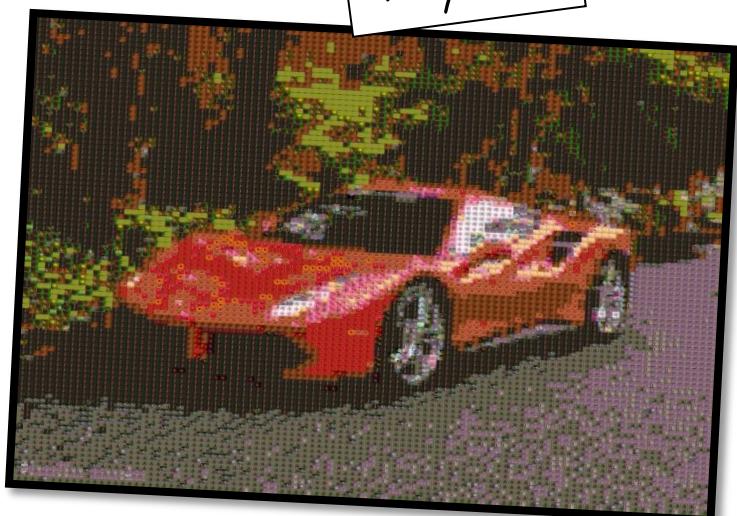
original



50 piese



75 piese



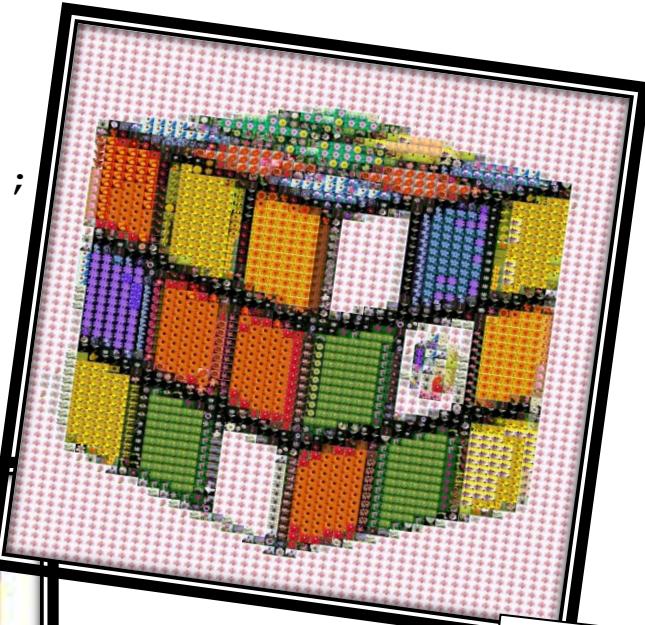
100 piese



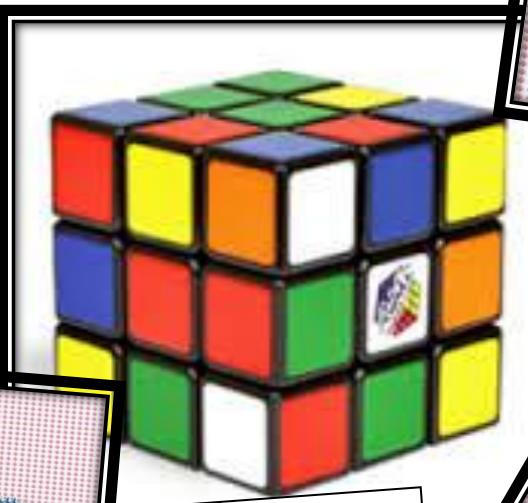
```
params.criteriu =  
'distantaCuloareMedie';
```



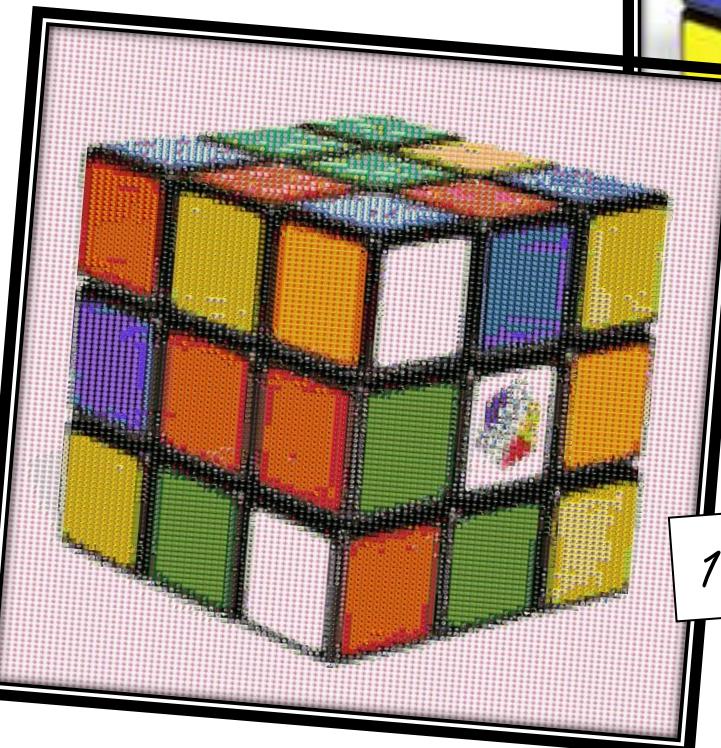
25 piese



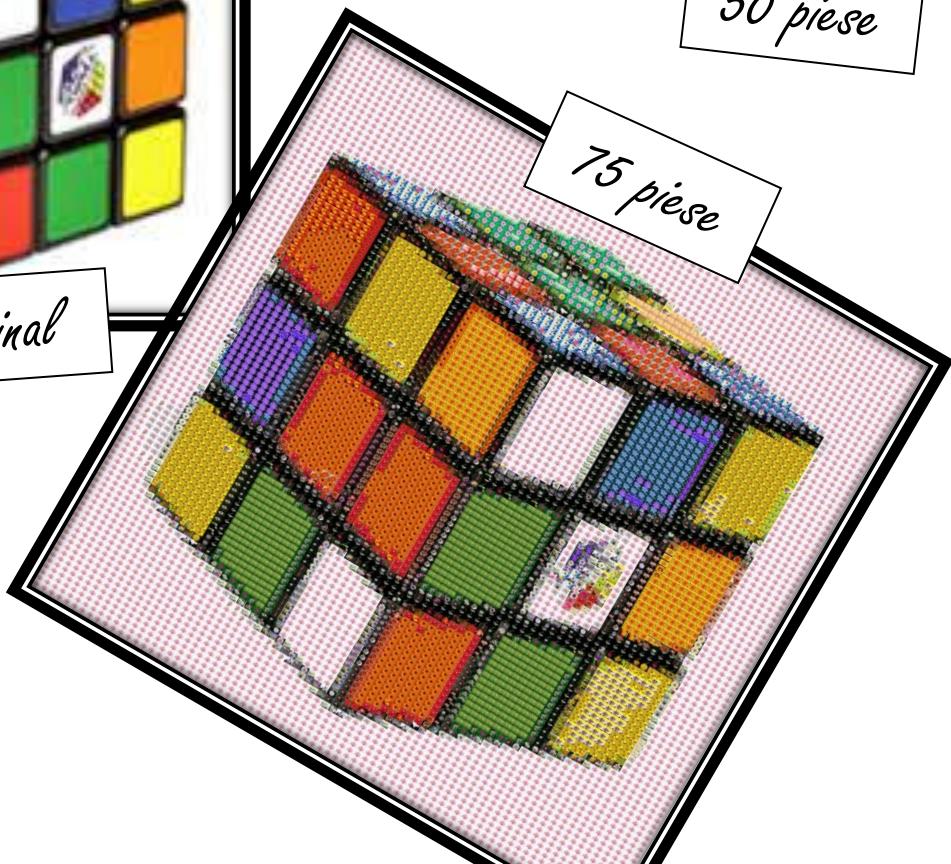
50 piese



original



100 piese



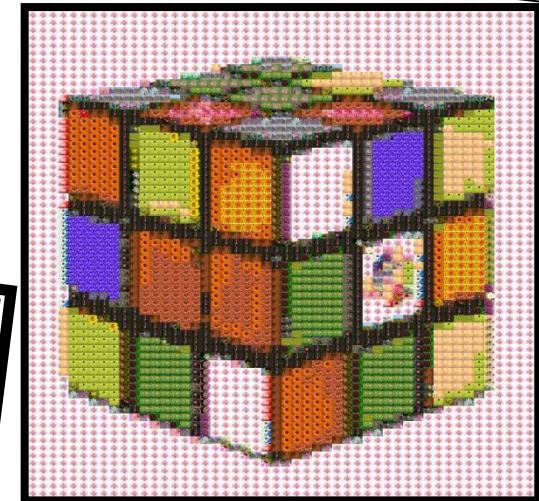
75 piese

25 piese

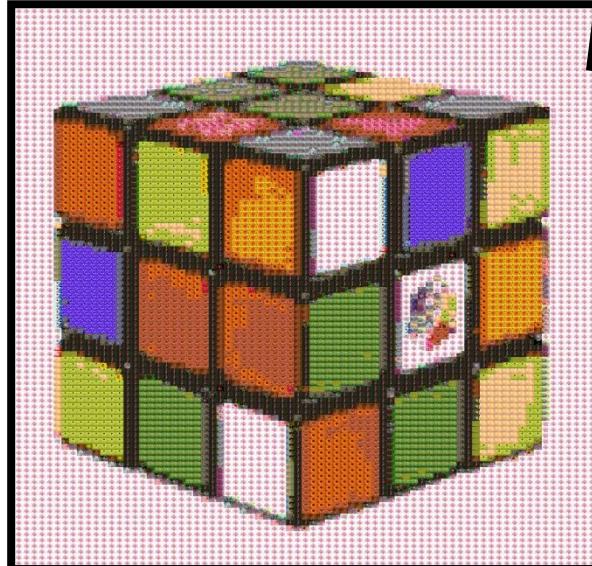


params.criteriu = 'distantaCulori'

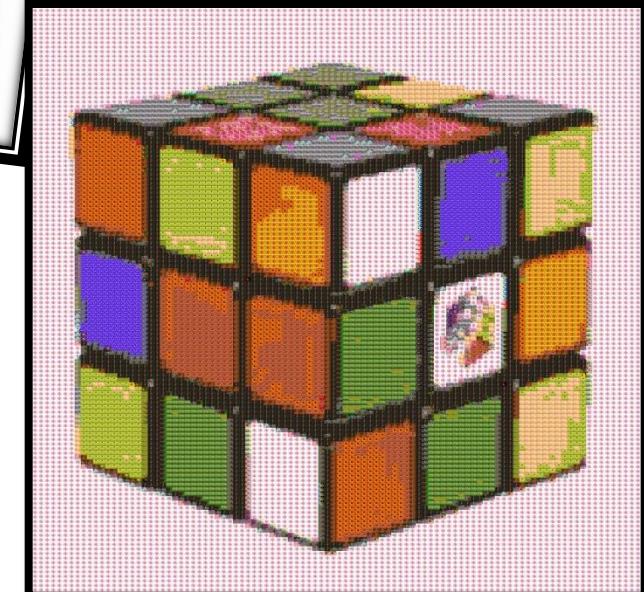
50 piese



75 piese

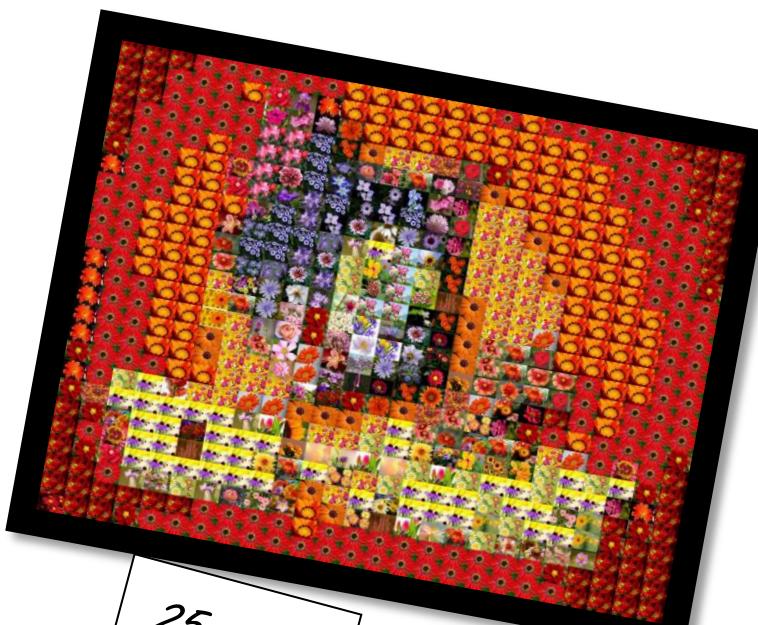


original



100 piese

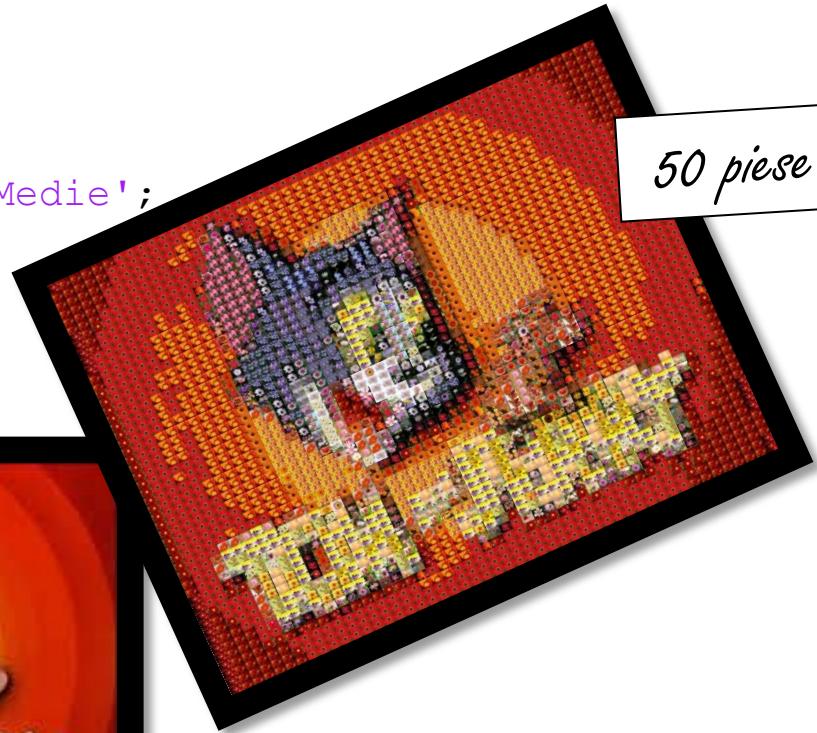
```
params.criteriu =  
'distantaCuloareMedie';
```



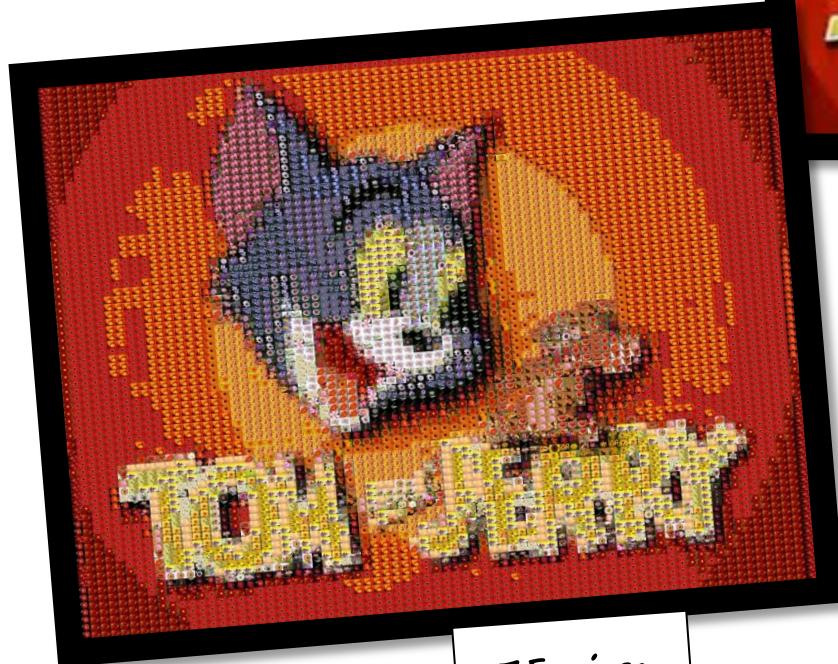
25 piese



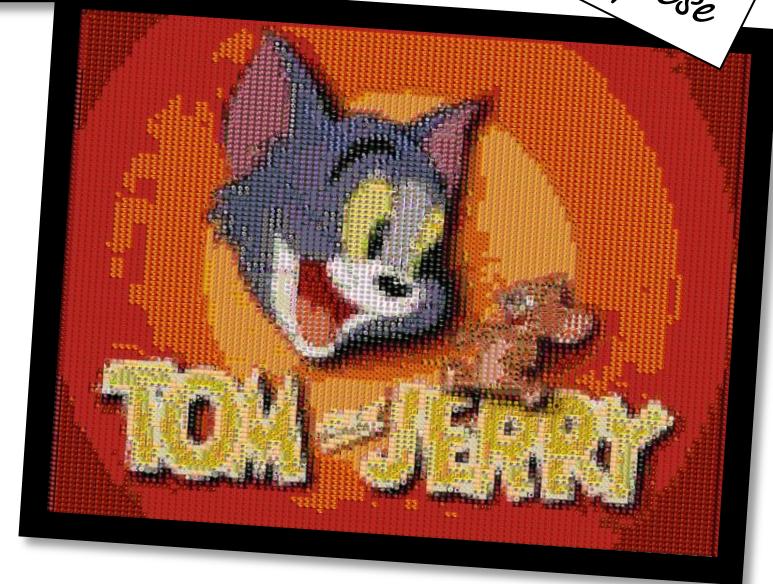
original



50 piese



75 piese



100 piese

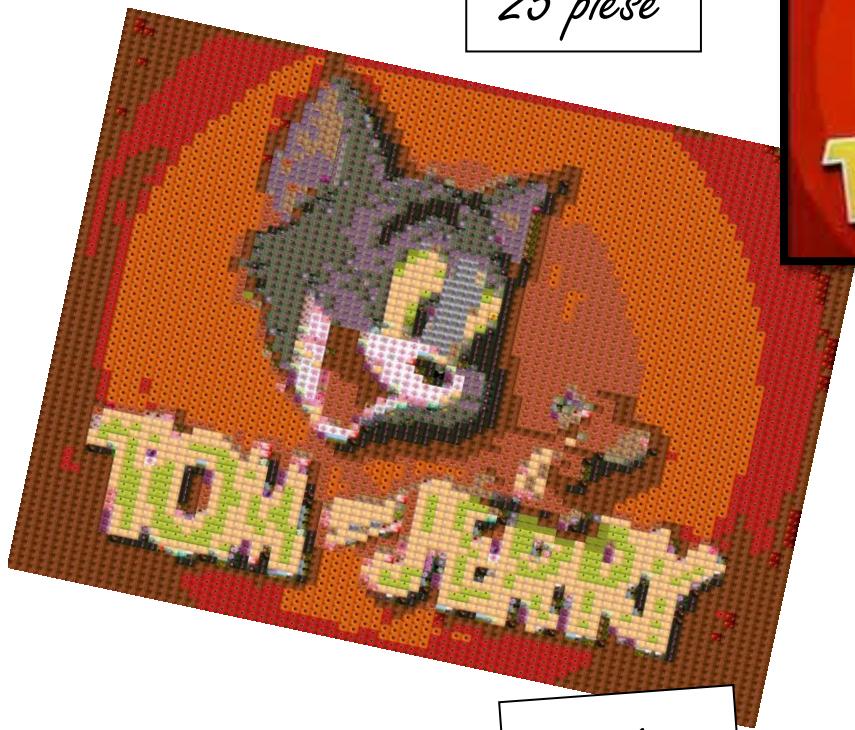
params.criteriu =
'distanțăCulori'

50 piese

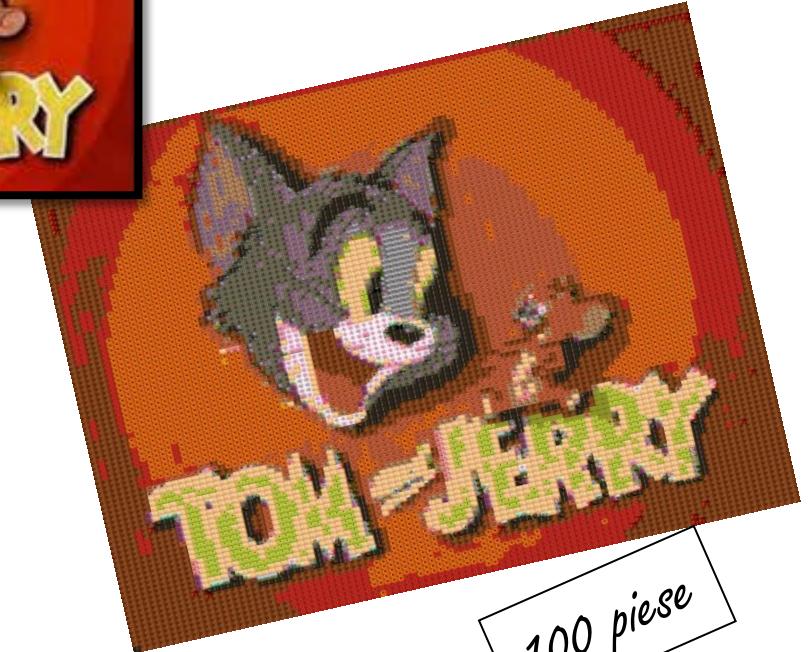


25 piese

original



75 piese



100 piese



25 piese



params.criteriu =
'distantaCuloareMedie'

original



50 piese



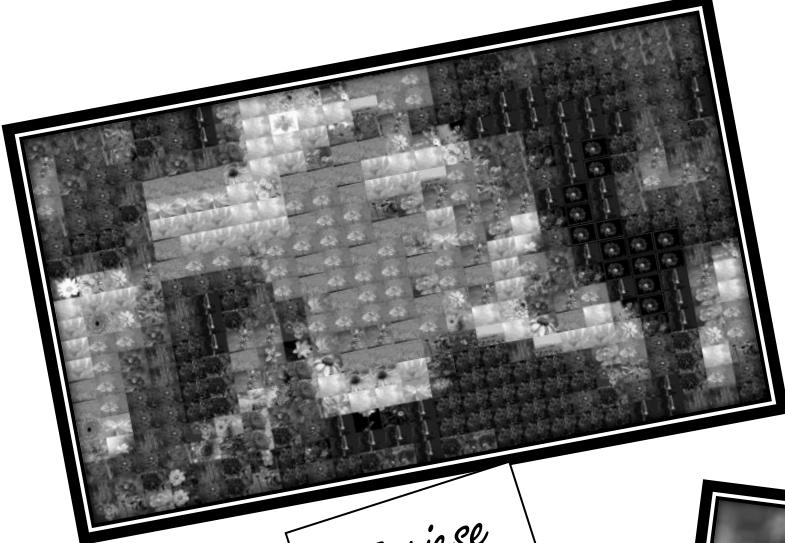
100 piese



75 piese

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params.criteriu =
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```
'distantaCulori'
```



25 piese



original



50 piese



100 piese

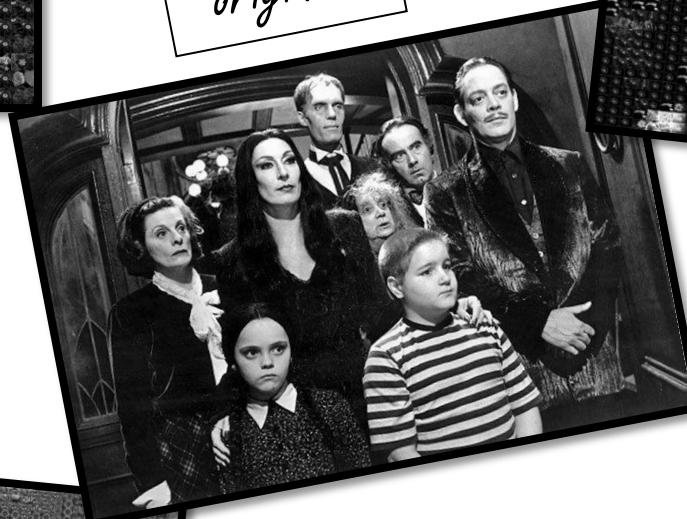


75 piese

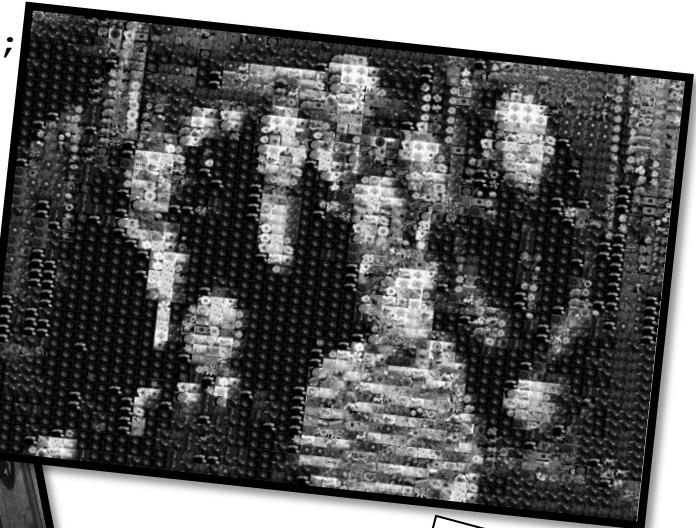
```
params.criteriu =  
'distanțăCuloareMedie';
```



25 piese



original



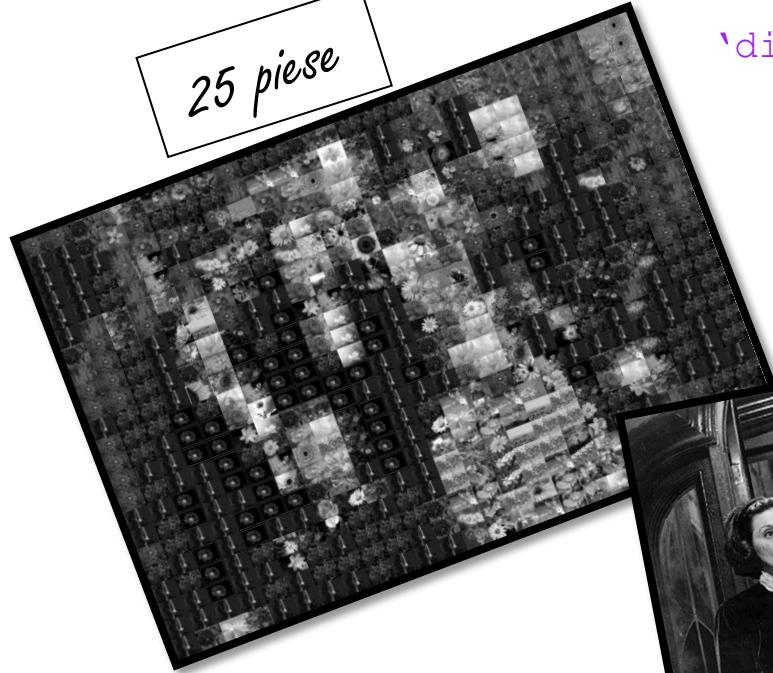
50 piese



75 piese



100 piese



```
params.criteriu =  
'distanțăCulori'
```



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params.criteriu =  
'distantaCuloareMedie';
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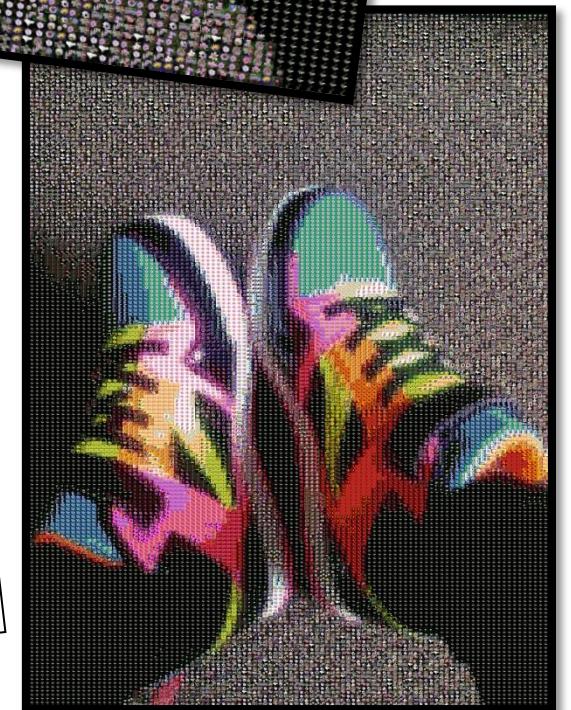
original

75 piese

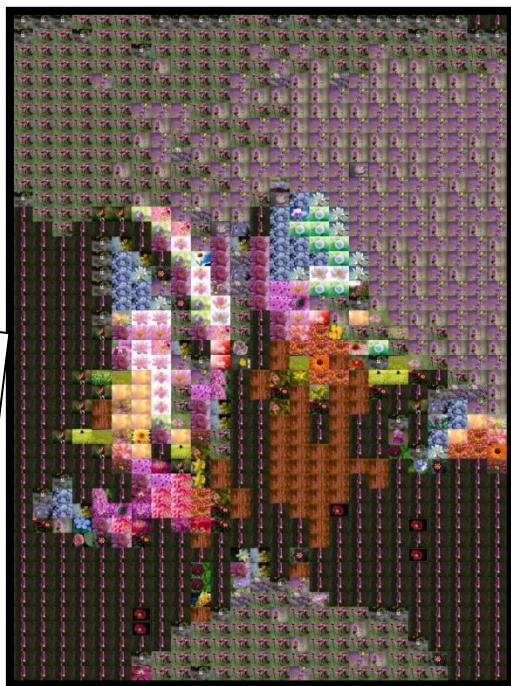


50 piese

100 piese



25 piese

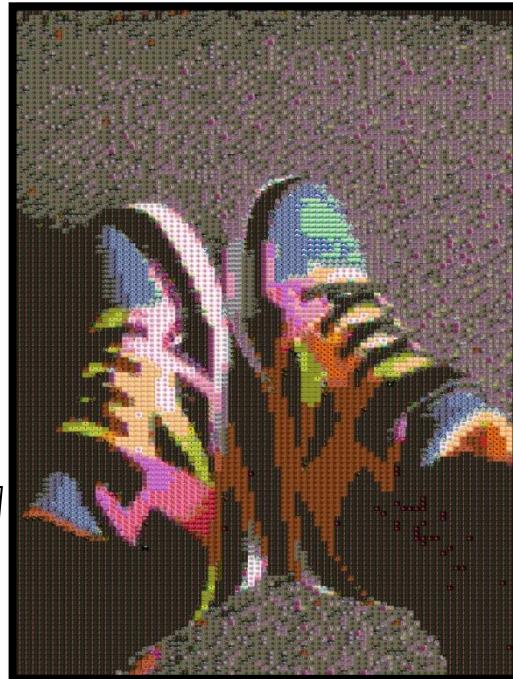


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params.criteriu =  
'distanțaCulori'
```

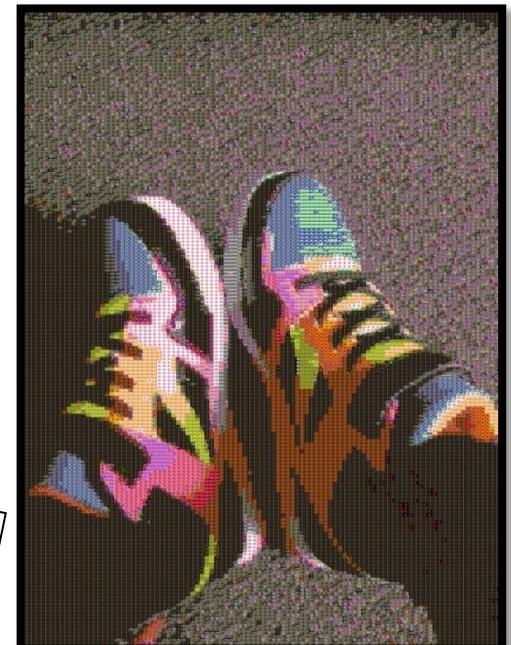
original



100 piese



75 piese

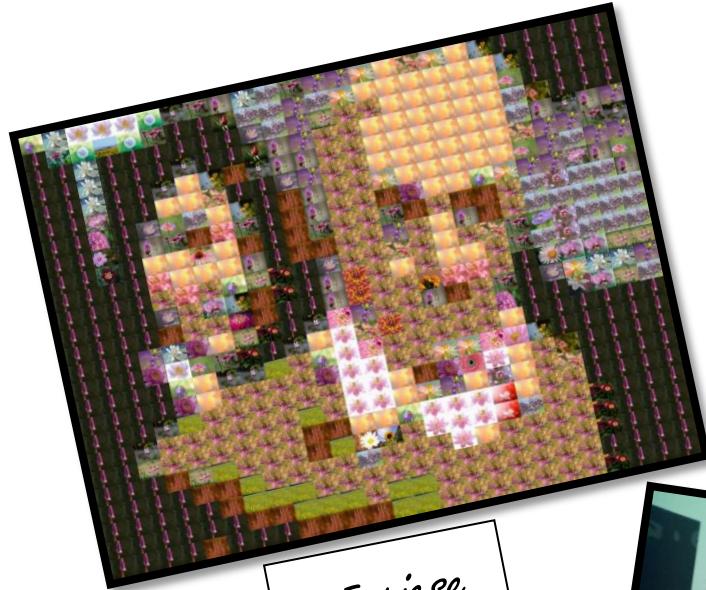


50 piese

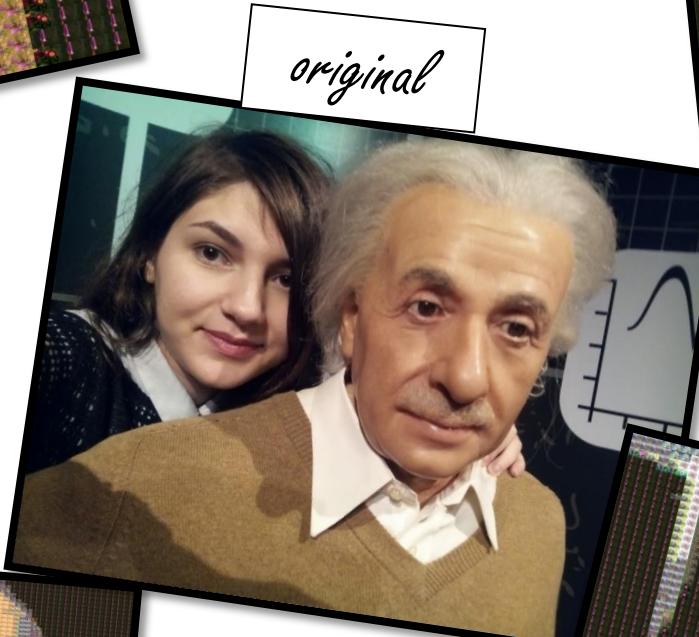


params.criteriu =

'distanțaCulori'



25 piese



original



50 piese

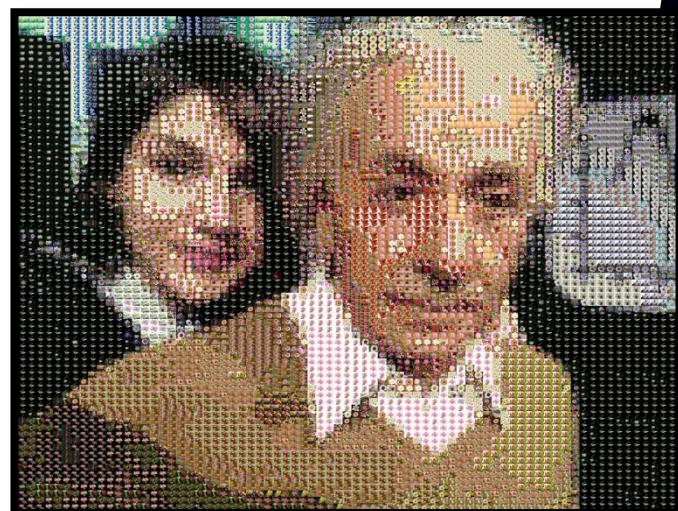
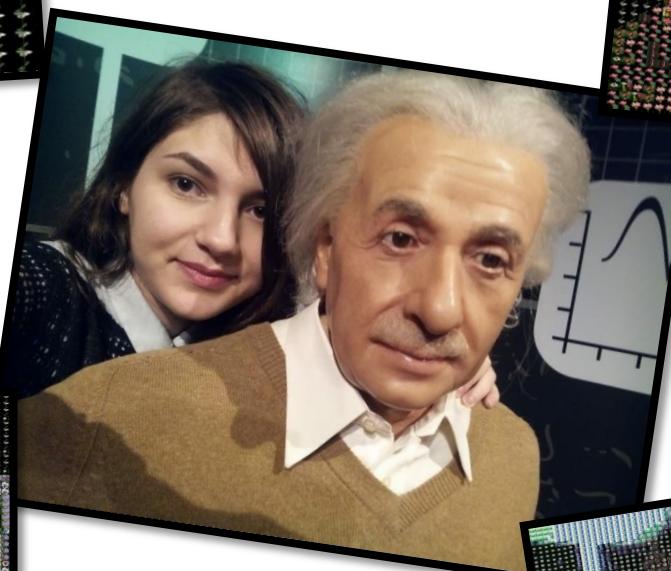
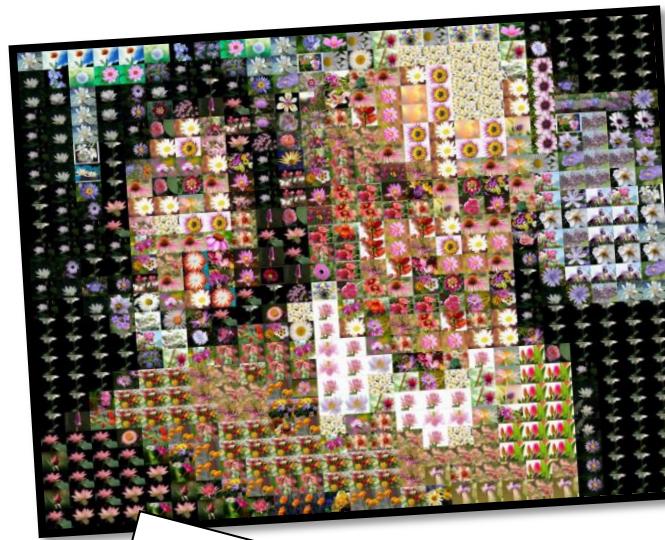


100 piese

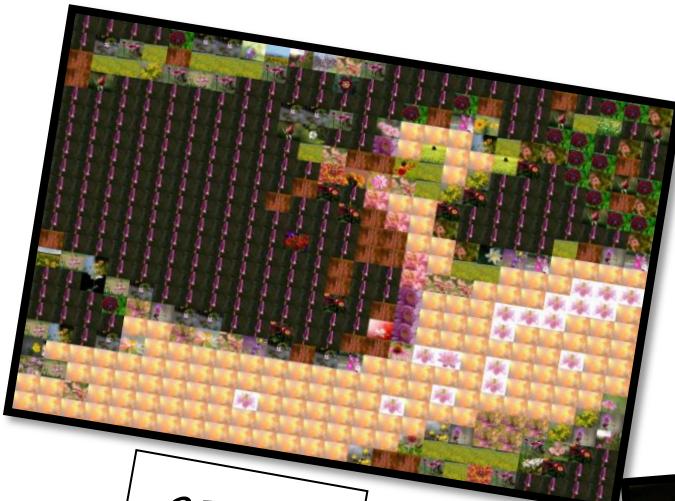


75 piese

```
params.criteriu = 'distantaCuloareMedie';
```



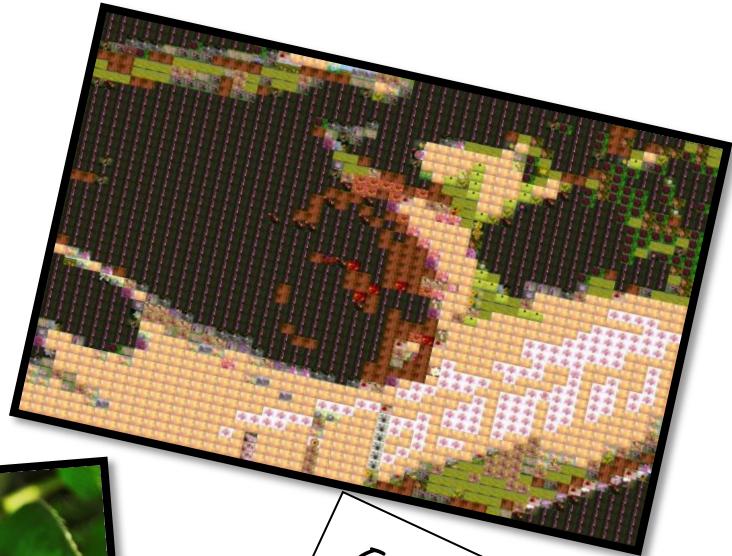
```
params.criteriu =  
'distantaCulori';
```



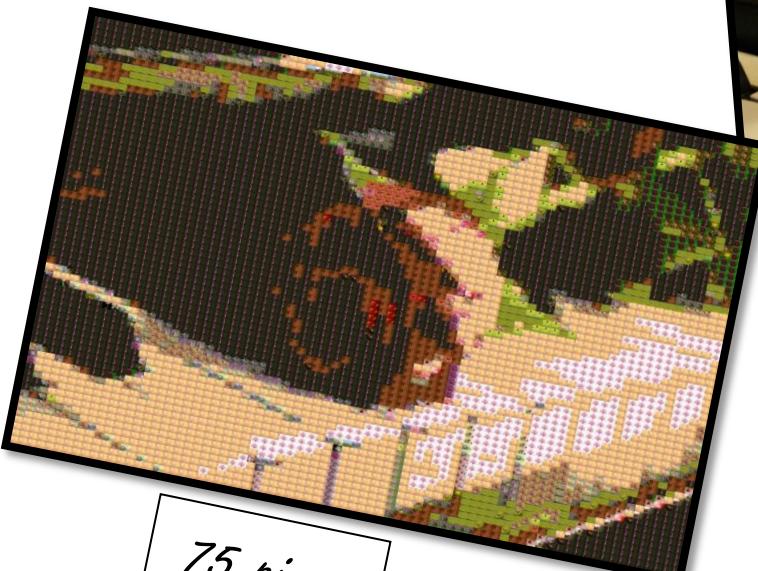
25 piese



original



50 piese

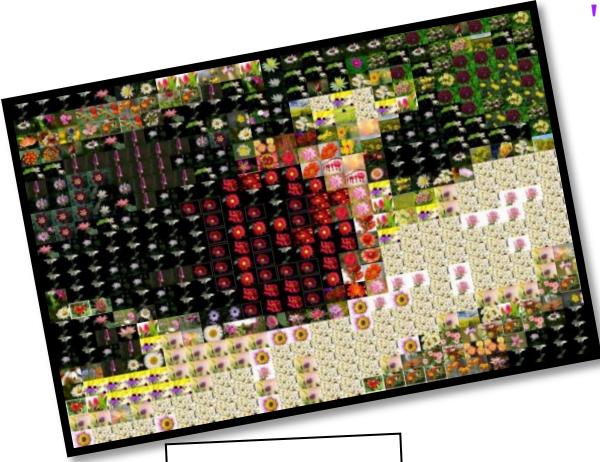


75 piese



100 piese

```
params.criteriu =  
'distantaCuloareMedie';
```



25 piese



original



50 piese

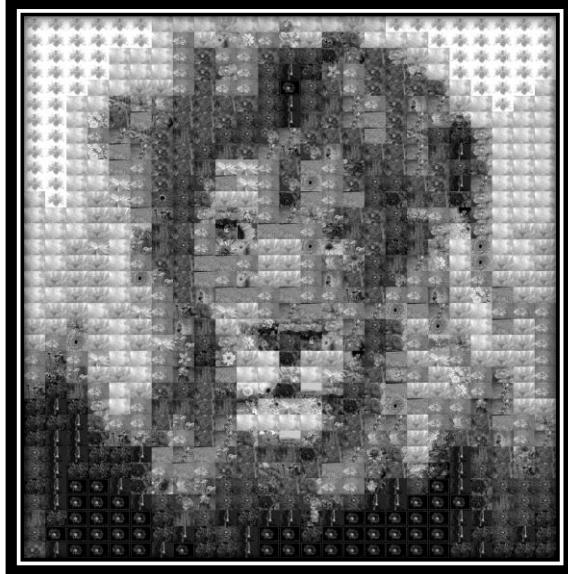


75 piese



100 piese

```
params.criteriu =  
'distantaCulori';
```



25 piese



50 piese



75 piese

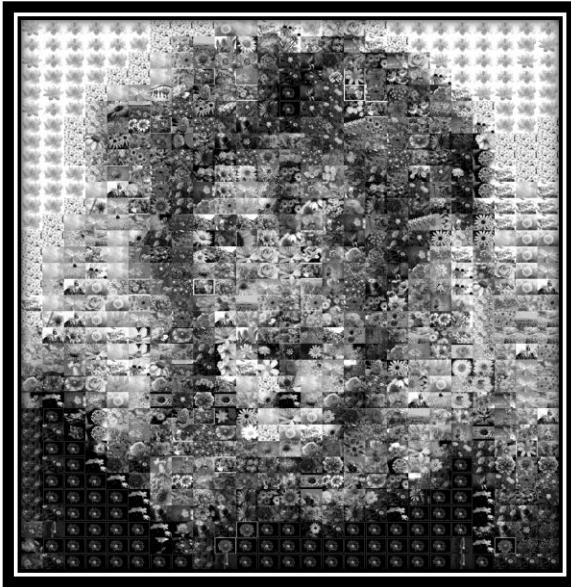


100 piese

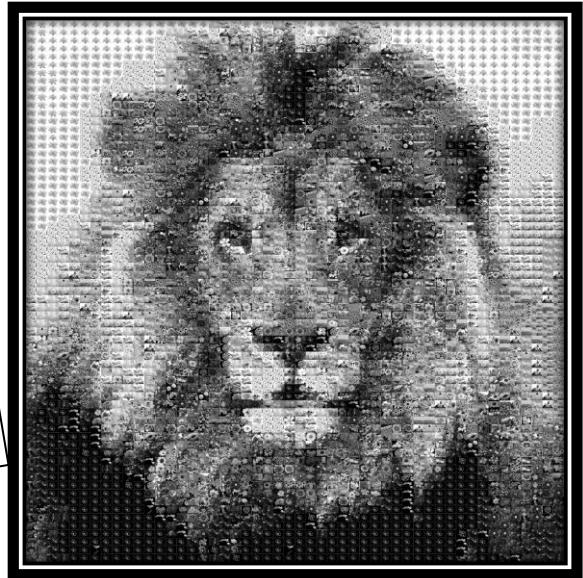


original

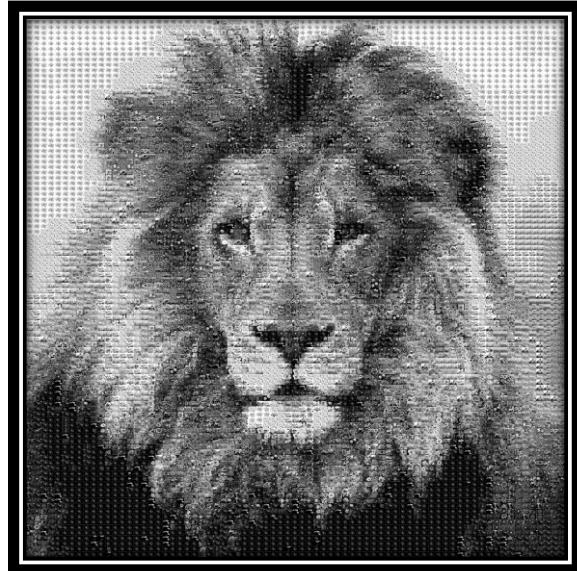
```
params.criteriu =  
'distantaCuloareMedie';
```



25 piese



50 piese



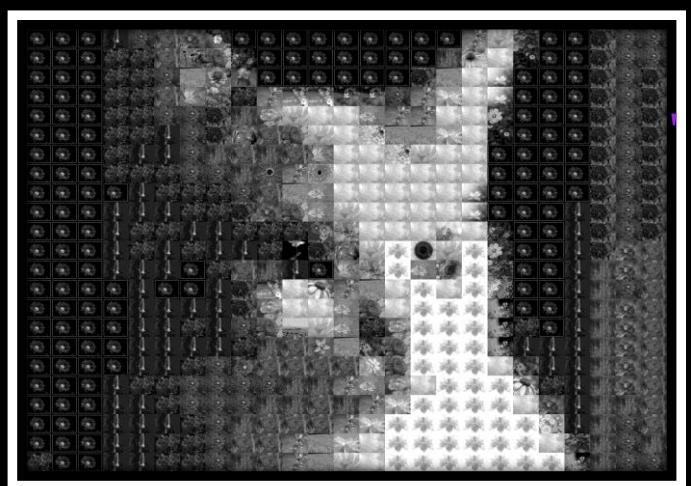
75 piese



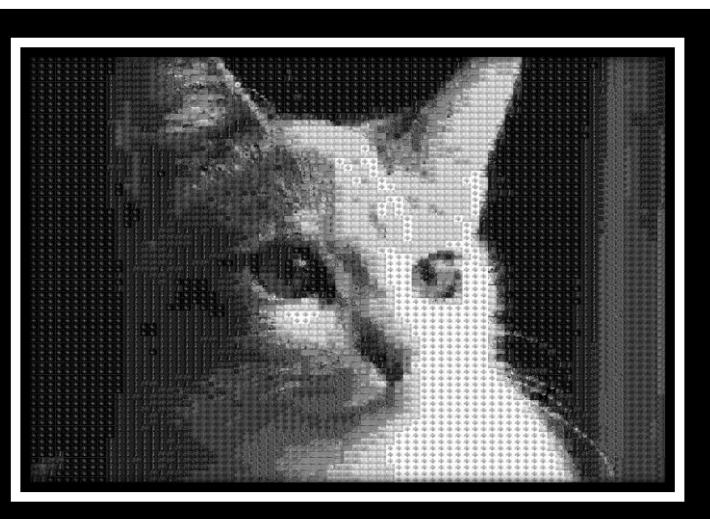
100 piese



original



25 piese



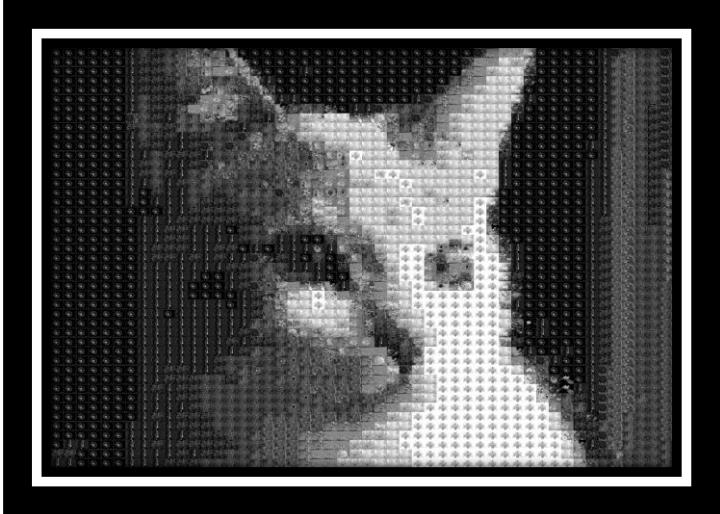
75 piese

```
params.criteriu =  
'distantaCulori'
```

original



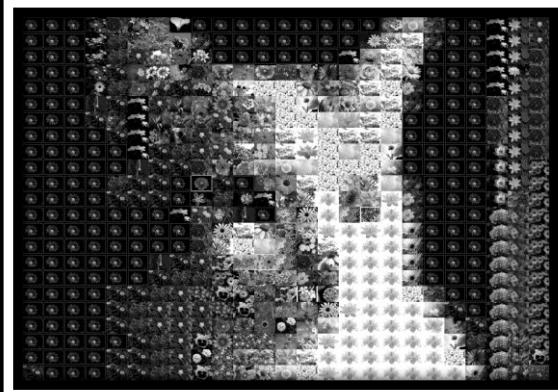
50 piese



100 piese

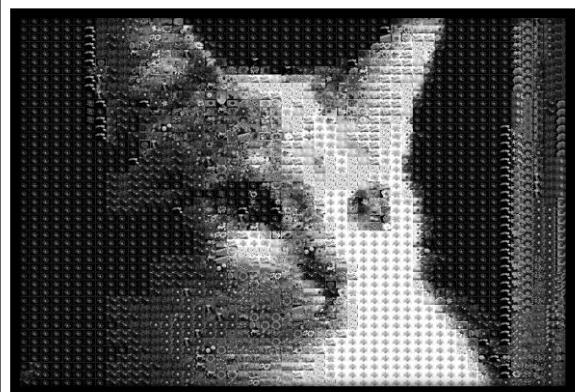


25 piese



```
params.criteriu =  
'distantaCuloareMedie';
```

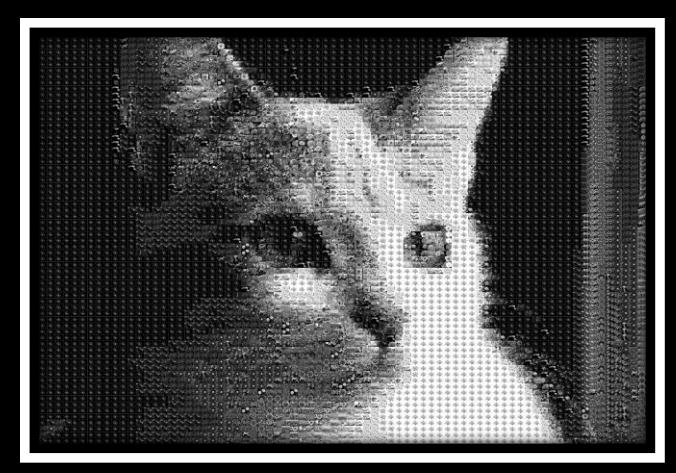
50 piese



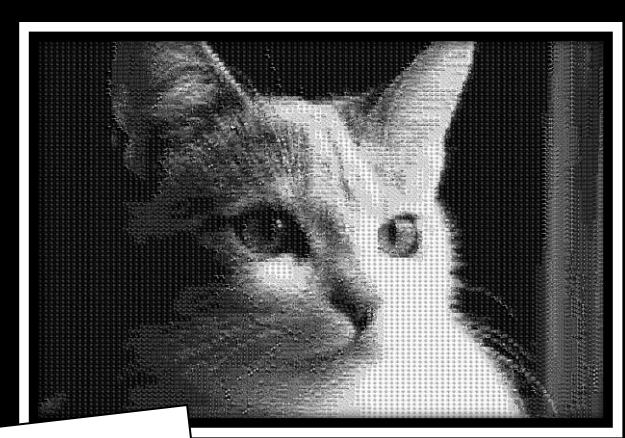
original



75 piese



100 piese



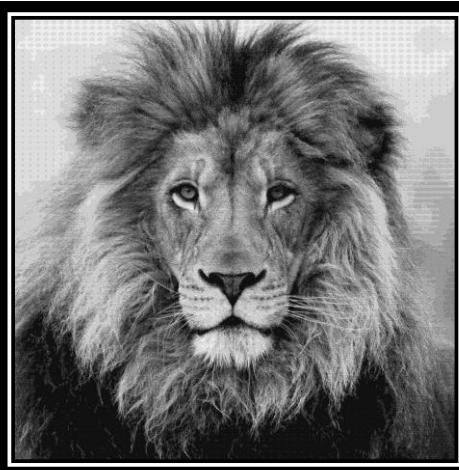
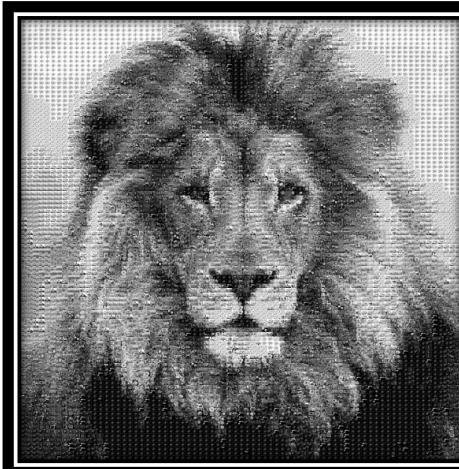
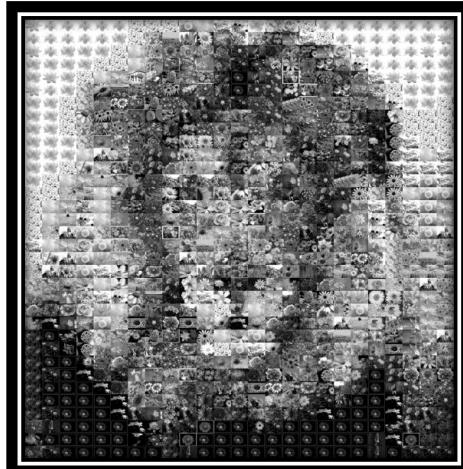
Dintre cele doua criteriile folosite ('`distantaCuloareMedie`' si '`distantaCulori`') pe majoritatea pozelor criteriul care a fost mai eficient (din punct de vedere al imaginii rezultate, dar si al timpului de rulare) este '`distantaCuloareMedie`'. Acesta are un rezultat mai bun deoarece calculeaza media culorilor pe canale, avand astfel o precizie mult mai buna decat calcularea "distantei" de la o culoare la alta.

Bineintele ca exista si exceptii:



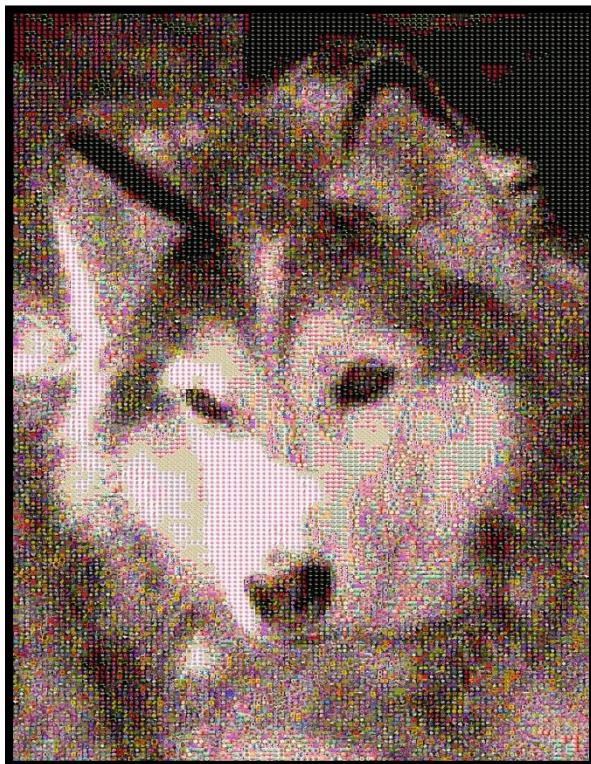
Pentru aceasta fotografie, chiar daca detaliiile sunt mult mai bine evidențiate cu criteriul '`distantaCuloareMedie`', totusi in partea stanga a pozei (unde exista umbre puternice) formele sunt mult mai bine puse in valoare cu criteriul '`distantaCulori`'.

Din imaginile prezentate mai sus este absolut evident ca in functie de numarul de piese ale mozaicului calitatea pozei poate creste sau scade. Cu cat exista mai multe piese cu atat imaginea mozaic se va apropiia mai mult de imaginea originala, o piesa de mozaic ocupand din ce in ce mai putini pixeli. Imaginea mozaic ar fi probabil aproape identica cu imaginea originala in momentul in care s-ar ajunge ca o piesa de mozaic sa ocupe un singur pixel.



In exemplul de mai sus este prezentata aceeasi imagine creata cu 25, 75, 100, 200 si 400 de piese (ultima imagine fiind cea originala). Se poate observa ca deja de la 200 de piese in sus diferențele intre imaginile mozaic si cea originala sunt aproape insesizabile.

Un alt criteriu de transformare a unei imagini intr-o imagine mozaic este criteriul Talida. Acesta calculeaza "distanta" dintre media culorilor din imaginea referinta si media culorilor pieselor de mozaic. Deoarece culorile nu sunt differentiate pe canale, imaginea mozaic rezultata va avea cu totul alte culori decat cea originala.



BONUS:

Pentru a incarca imaginile din setul de date CIFAR-10 am utilizat o alta functie `incarcaPieseMozaicCIFAR.m`.

Pentru a putea crea mozaicuri cu imagini dintr-o clasa specifică trebuie să punem o condiție care va alege imaginile doar pentru o anumita valoare a unui label. Valorile label-urilor sunt între 0 și 9 în funcție de următoarele clase:

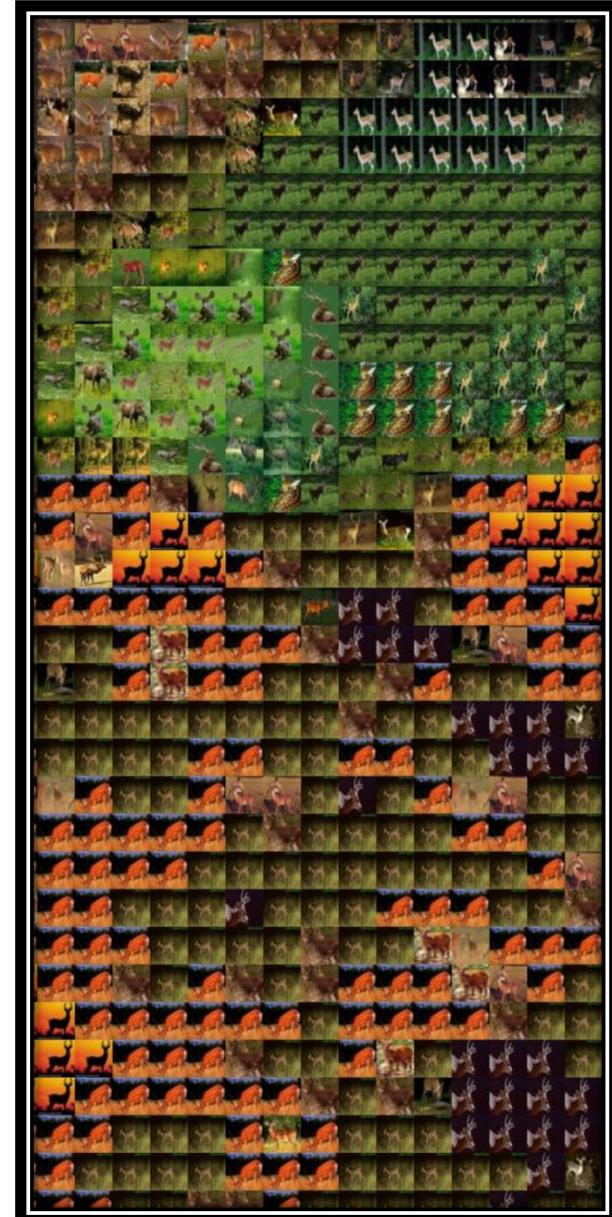
Label=4 (deer)

Zoom

Imagine originala



Imagine mozaic (200 piese)

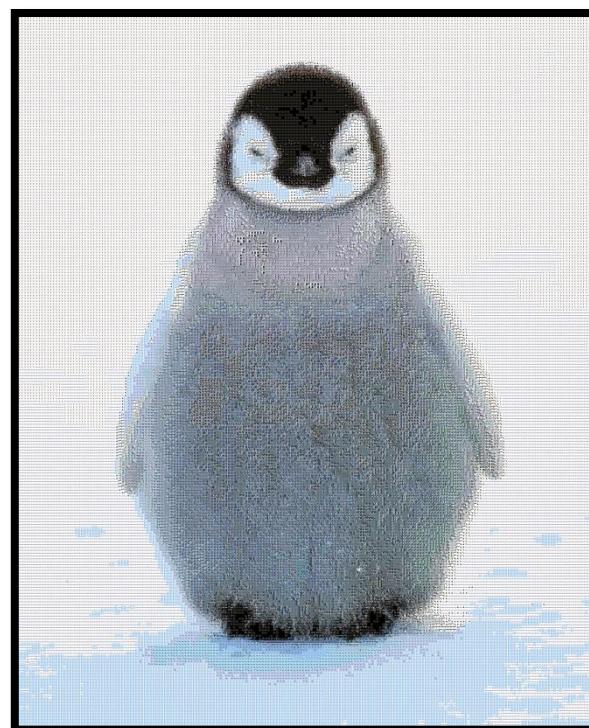


Label =2 (bird)

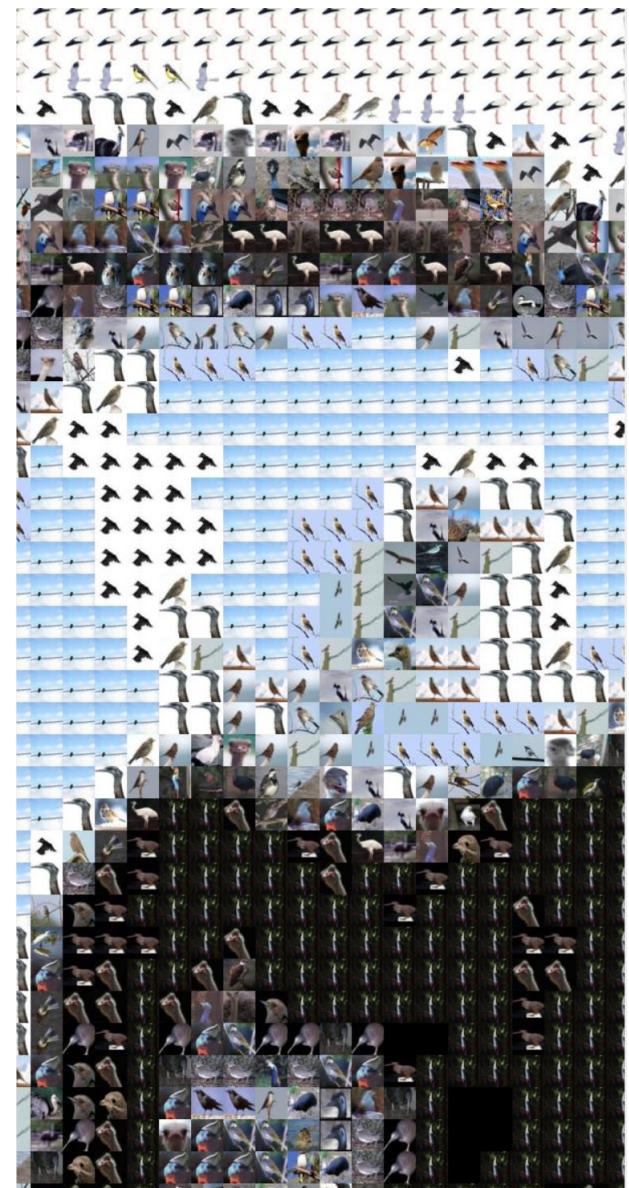
Imagine orizontal



Imagine mozaic (200 piese)



Zoom

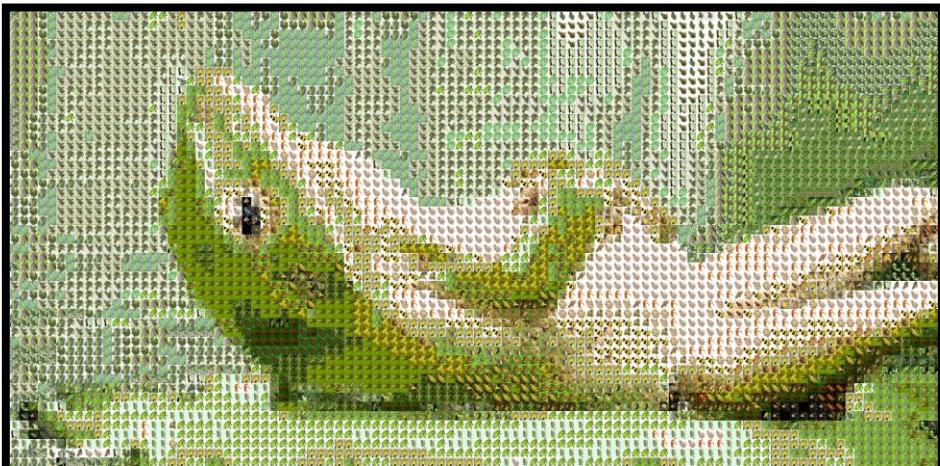


Label=6 (frog)

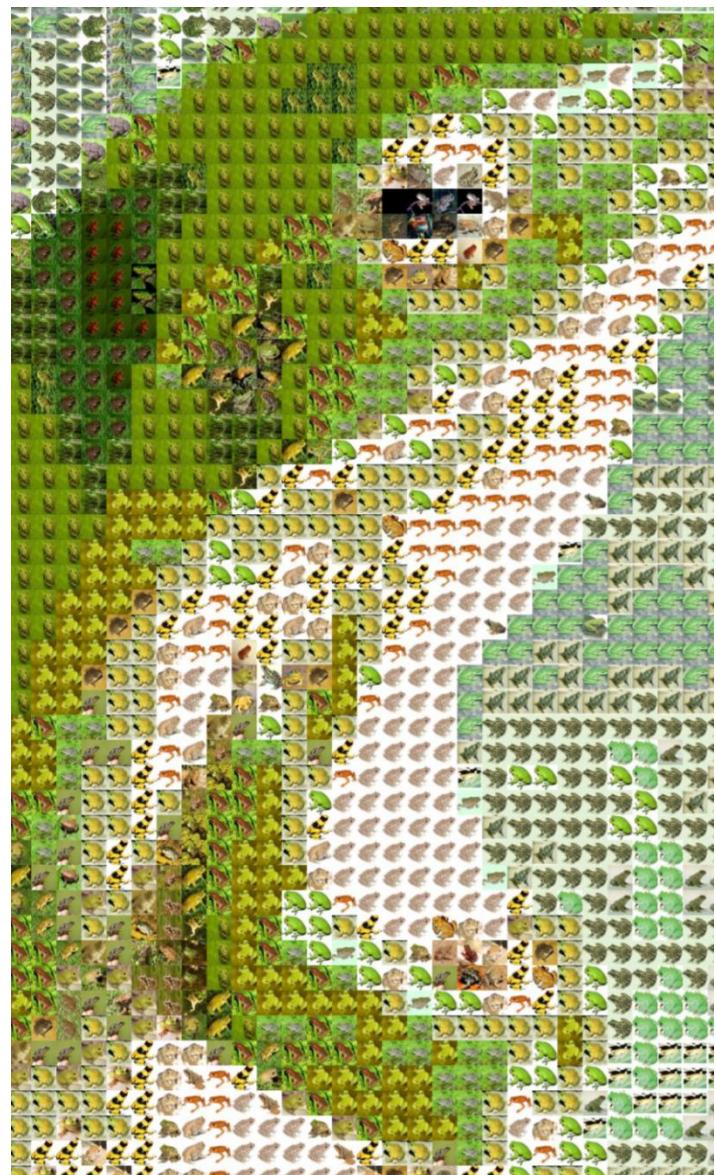
Imagine originala



Imagine mozaic (100 piese)



Zoom

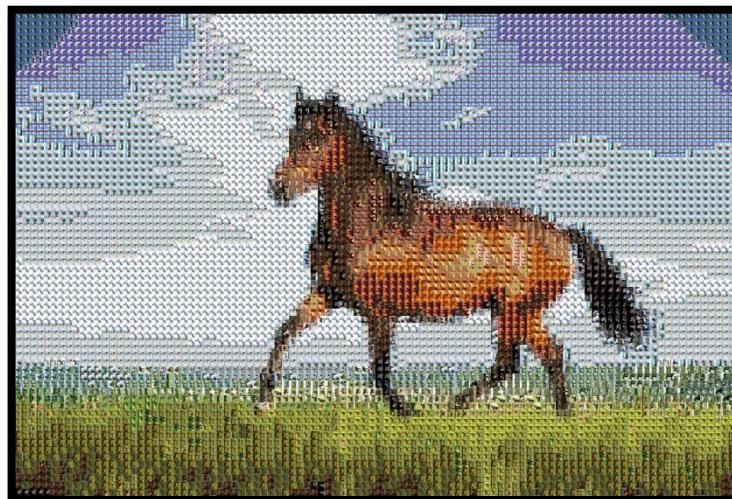


Label=7 (horse)

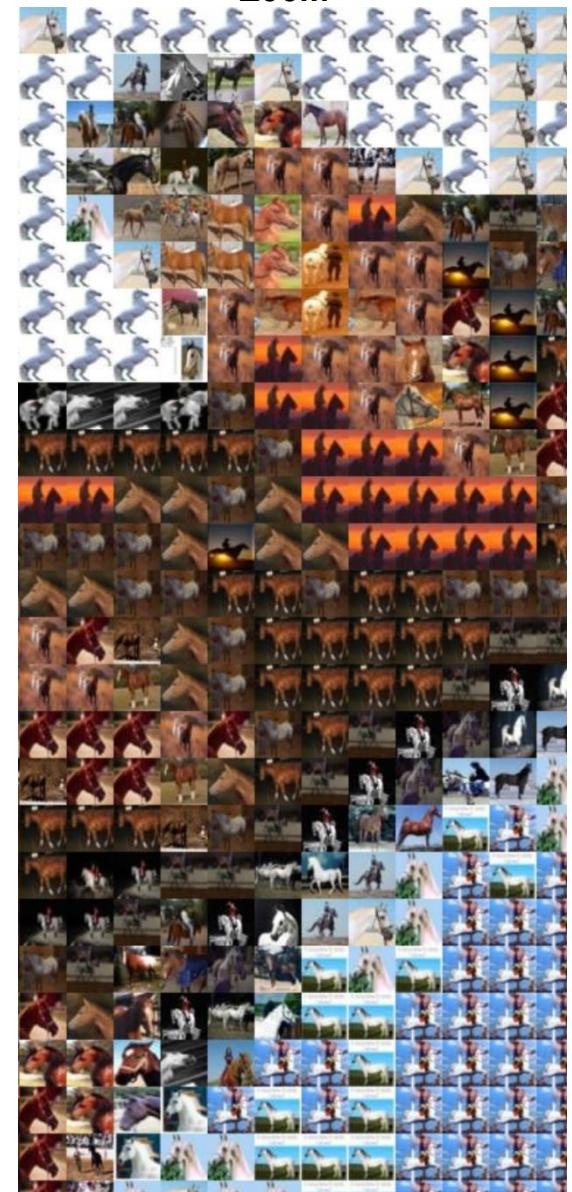
Imagine originala



Imagine mozaic (100 piese)



Zoom

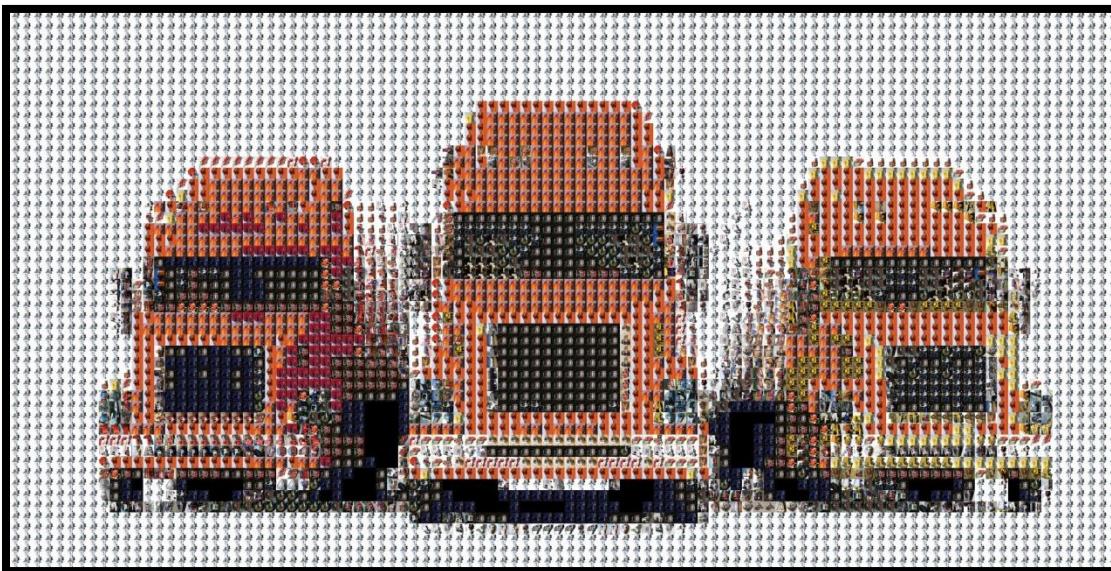


Label=9 (truck)

Imagine originala



Imagine mozaic (100 piese)



Zoom

