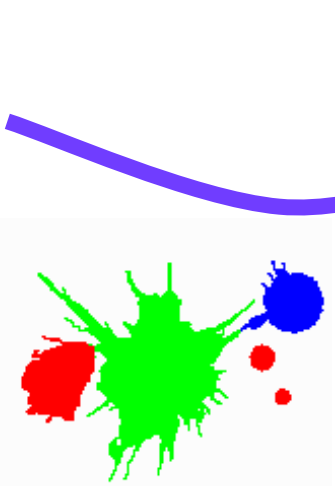
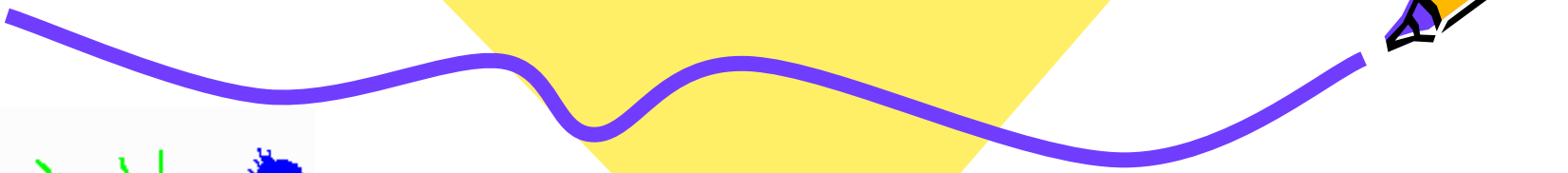
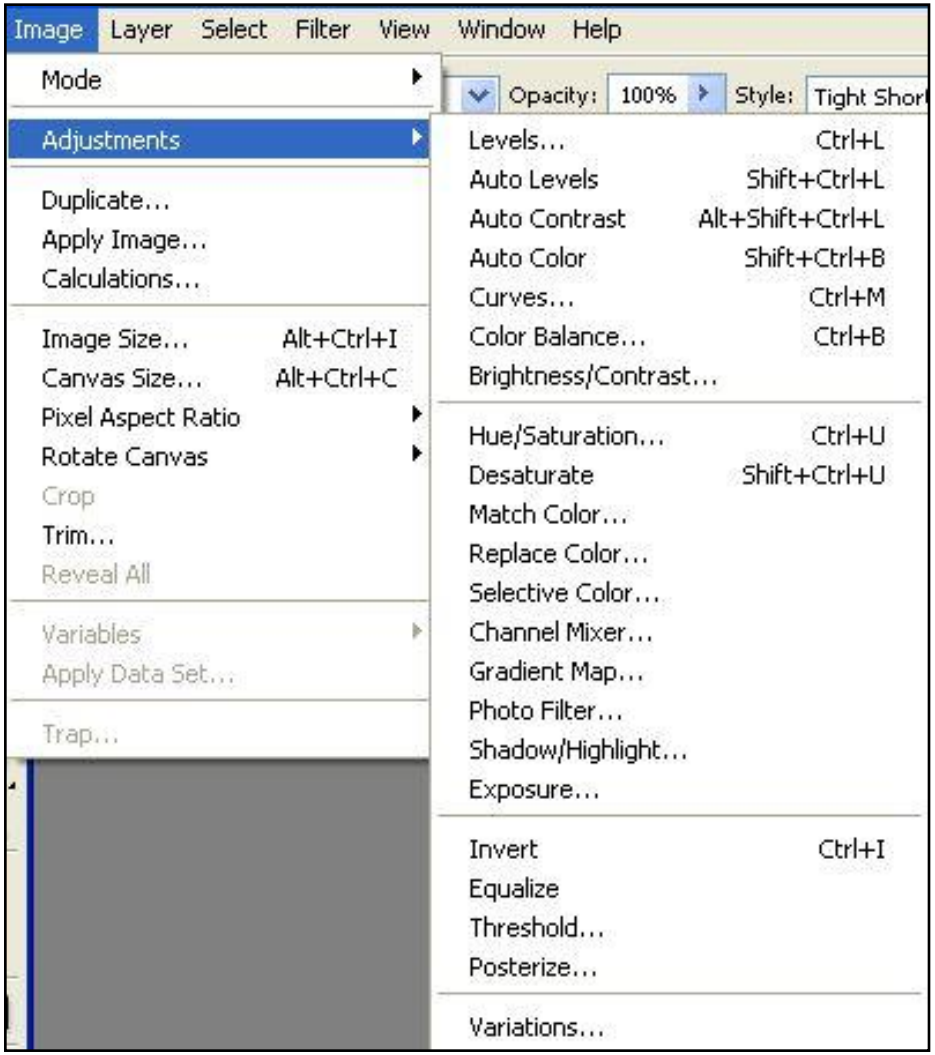
Sisteme software de prelucrarea imaginilor

Lucrul cu culori





Sisteme Software de Prelucrarea Imaginilor
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LAPI

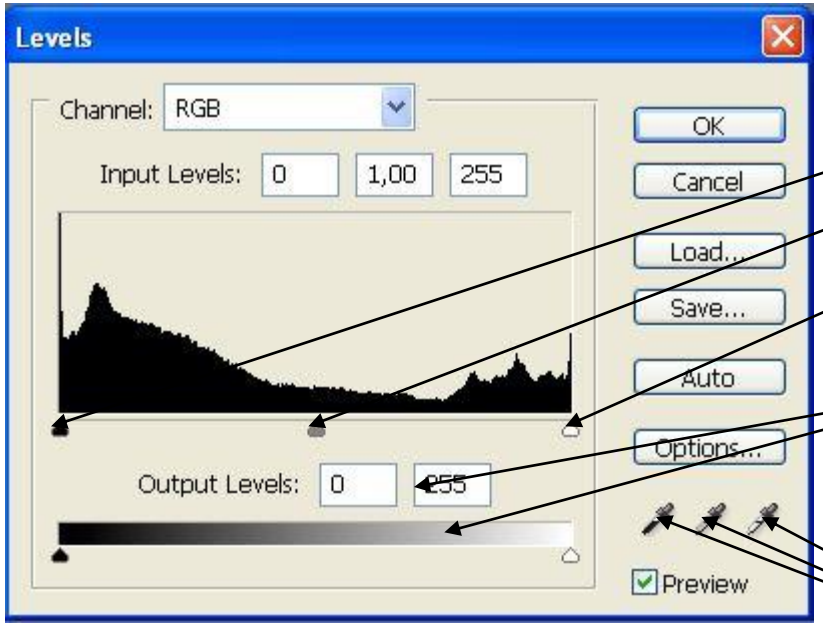


Sisteme Software de Prelucrarea Imaginilor

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Levels

- Se poate modifica histograma imaginii



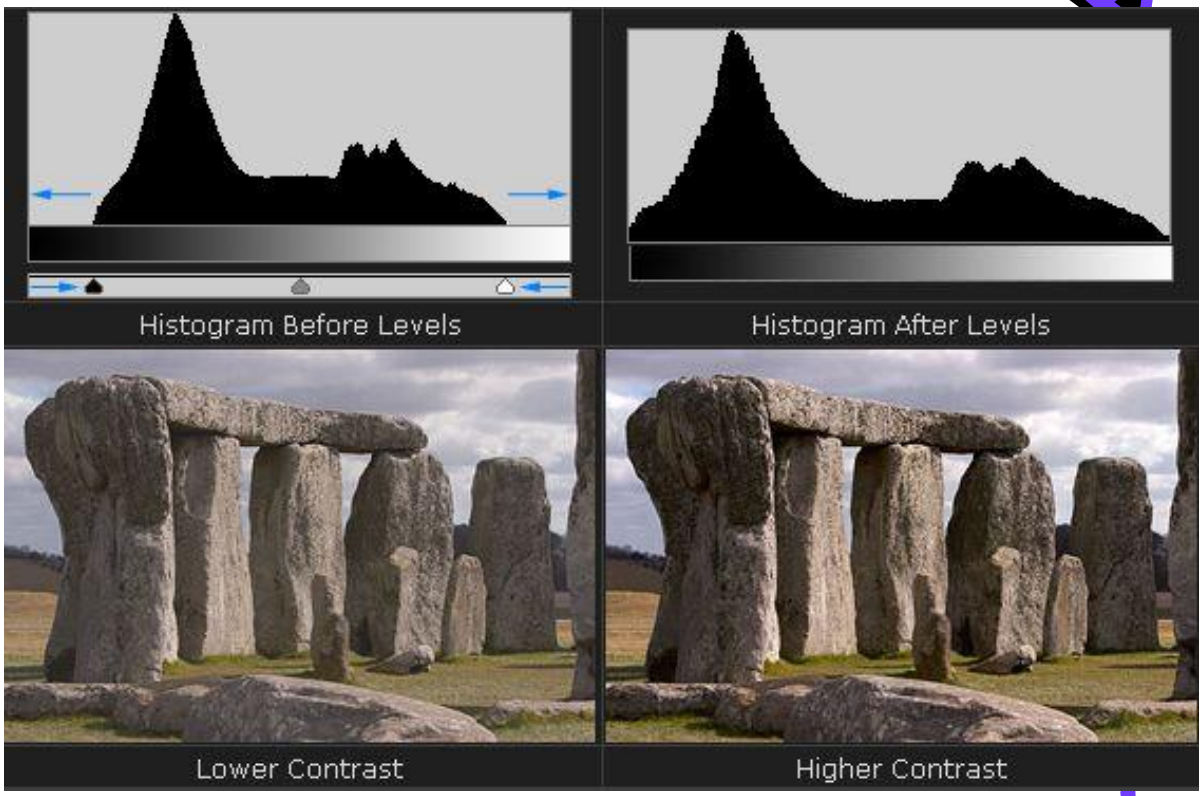
Slidere pentru negru/gri/alb

Gama de niveluri de gri ale imaginii rezultante

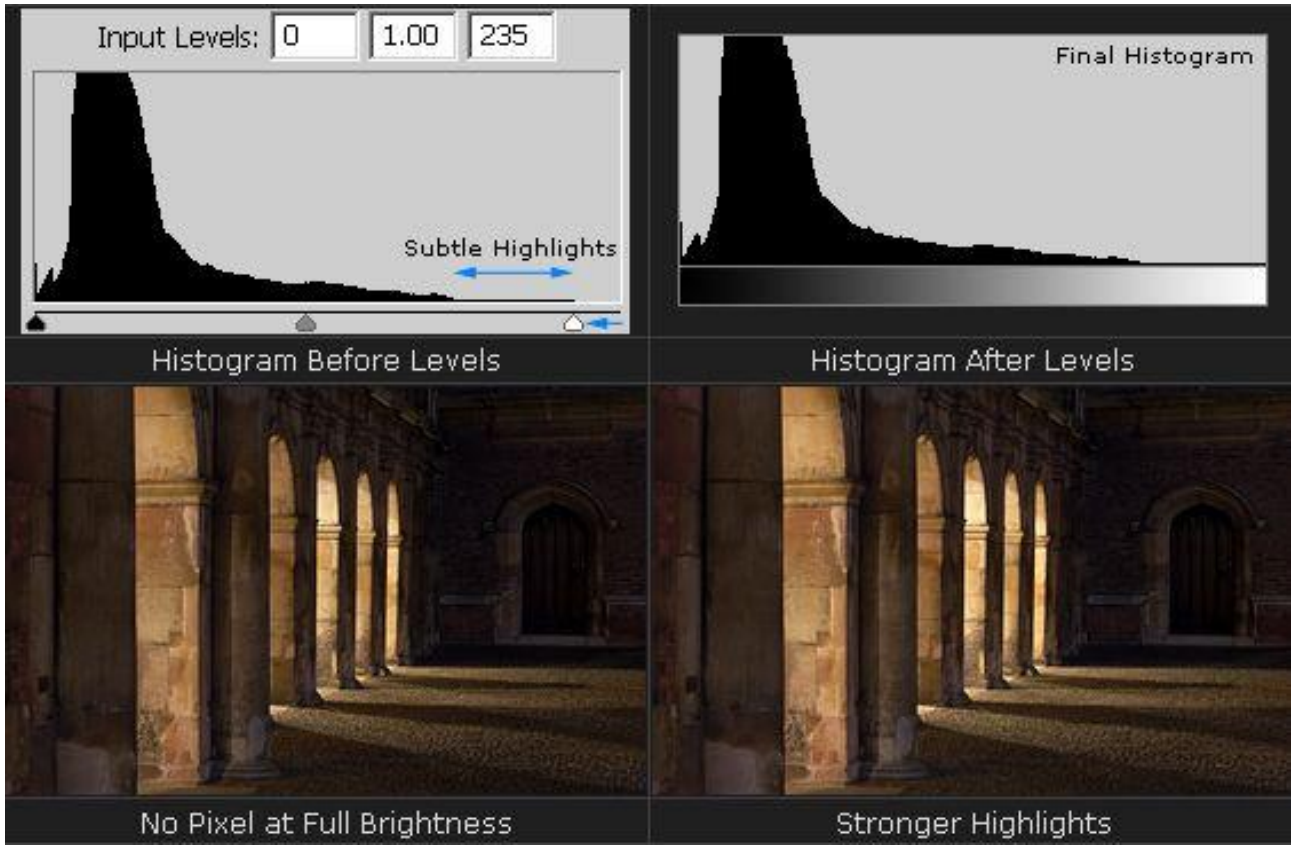
Selectare nivel de negru/gri/alb

Levels

- Pozitiile sliderelor de negru si de alb redefinesc valorile histogramei de intrare astfel incat sa corespunda valorilor de iesire (implicit 0 si 255).

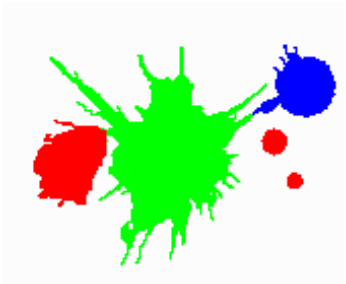


Levels





- Prin apasarea tastei *Alt* se pot observa locurile unde s-au produs truncheri

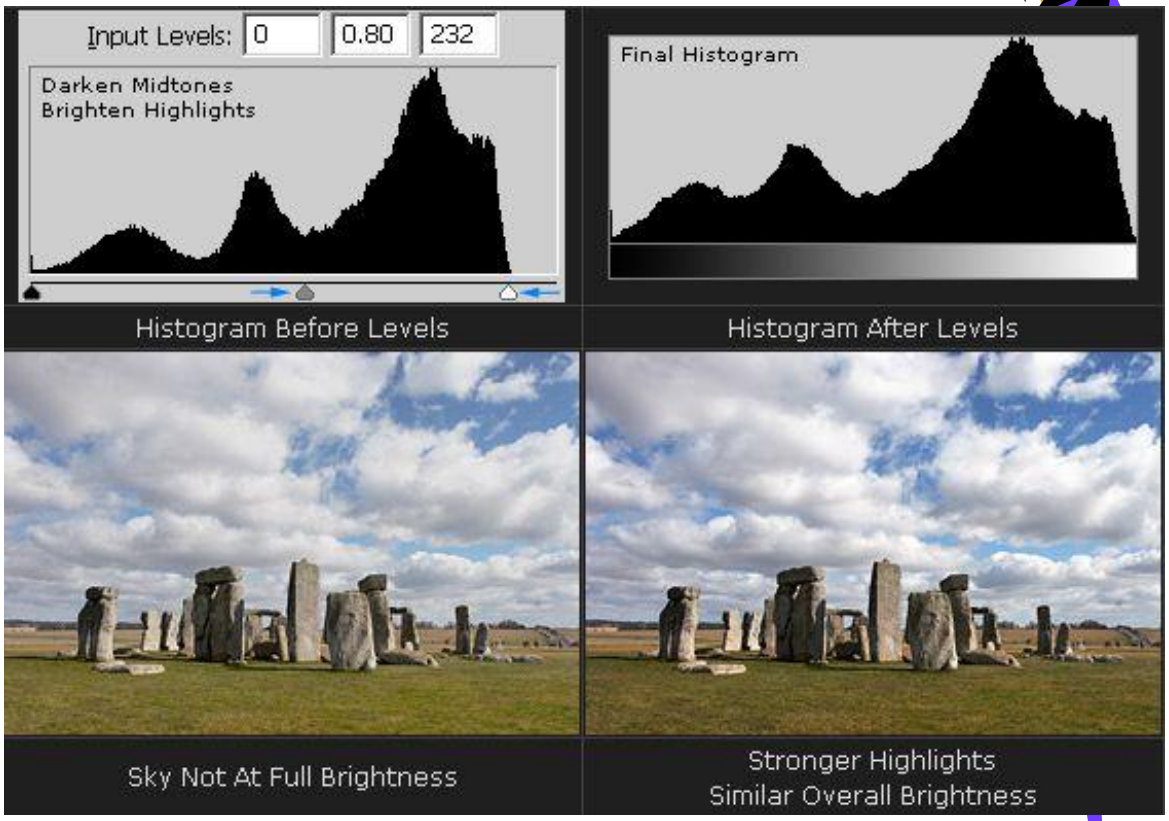


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Levels

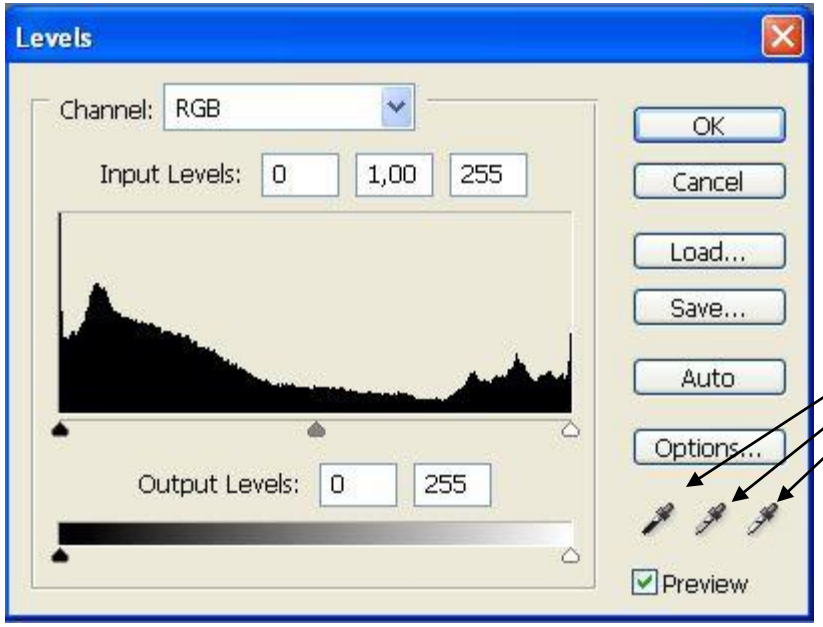
- Sliderul de gri redefineste pozitia nivelului de gri mediu (128)
- Valoarea reprezinta de fapt ajustarea de gamma
- Se poate considera o masura relativa a numarului de niveluri de gri din stanga sliderului fata de cele din dreapta



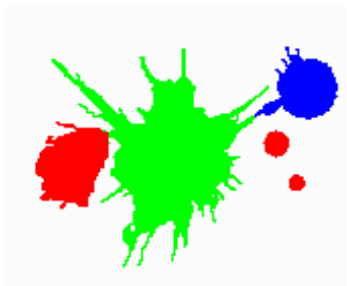
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Levels

- Se poate modifica histograma imaginii

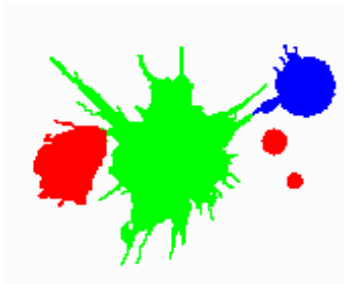


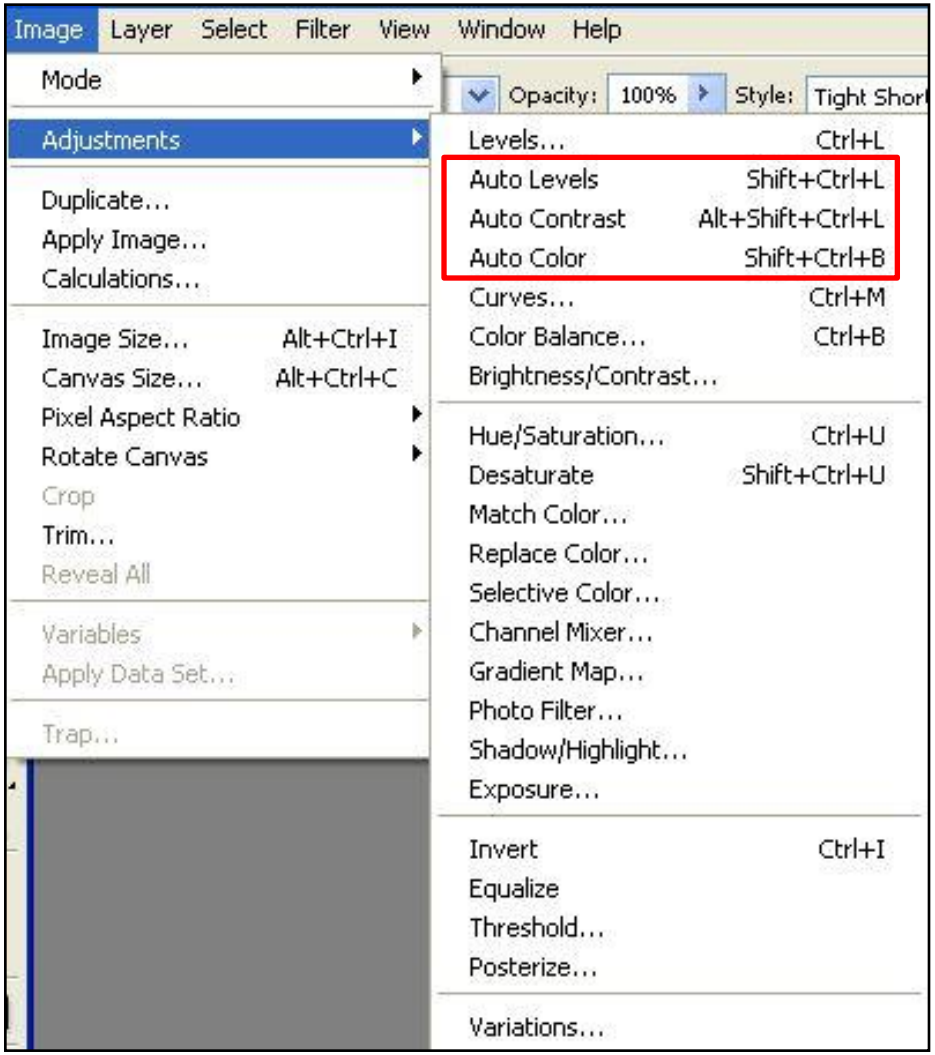
Selectare nivel de negru/gri/alb



Levels

- Selectarea nivelelor de negru si alb cu ajutorul pipetelor este mai rapida, dar nu atat de precisa
- Selectarea unui punct de gri cu ajutorul pipetei de gri poate rezolva probleme de *white balance*
- Se poate lucra si pe canale de culoare separat, dar si in acest caz se modifica nivelul de alb





Sisteme Software de Prelucrarea Imaginilor

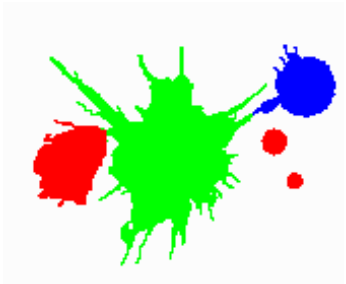
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Auto Contrast, Auto Levels, Auto Color

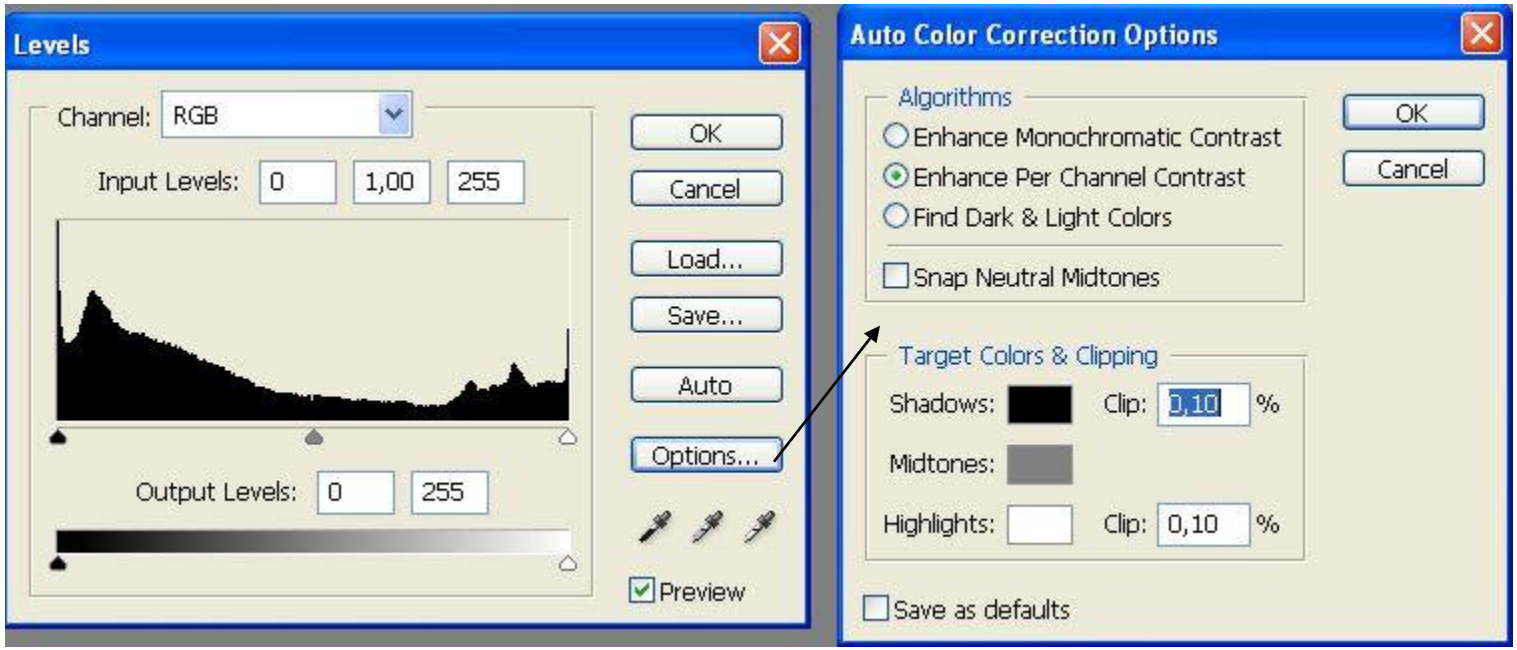
- *Auto Contrast (Enhance Monochromatic Contrast):* lucreaza pe toate canalele identic pentru a pastra culorile

- *Auto Levels (Enhance Per Channel Contrast)*: lucreaza pe fiecare canal de culoare independent. Poate rezolva probleme de *white balance*

- *Auto Color (Find Dark & Light Colors)*: foloseste culorile cele mai inchise/deschise din imagine ca *Shadow/Highlights*

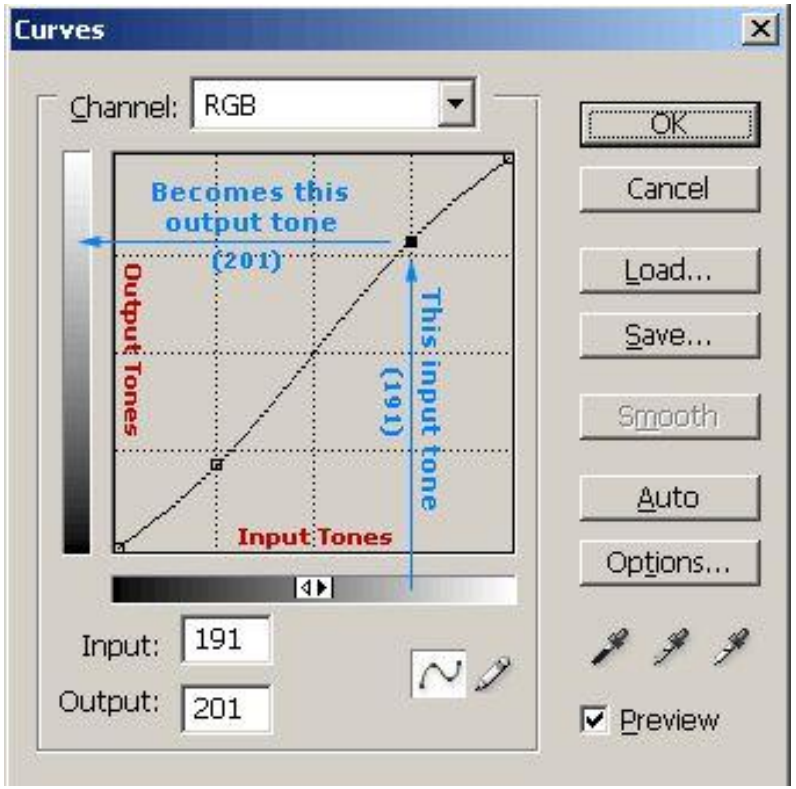


Auto Contrast, Auto Levels, Auto Color



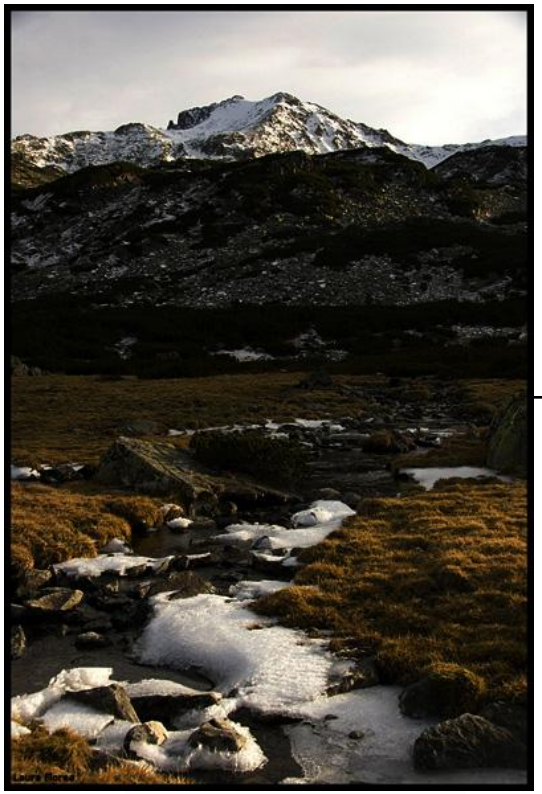
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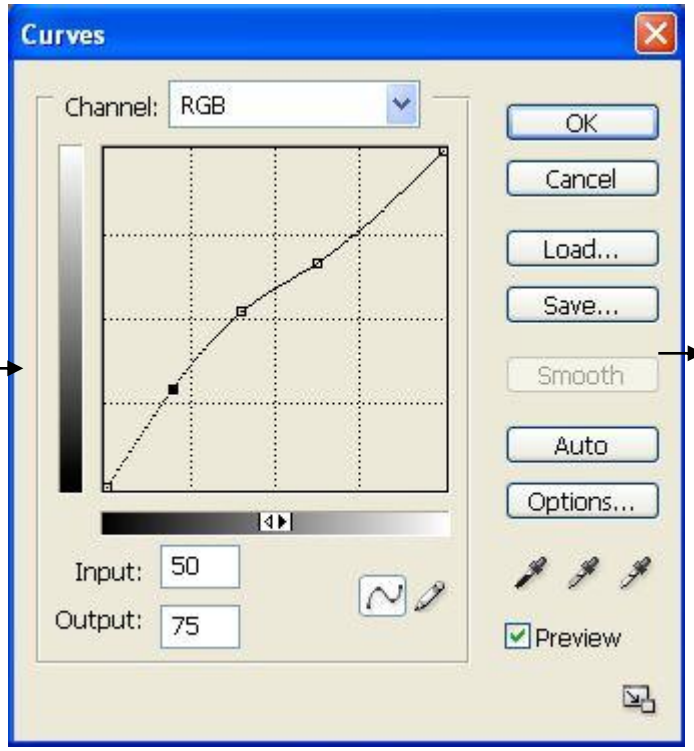
Curves



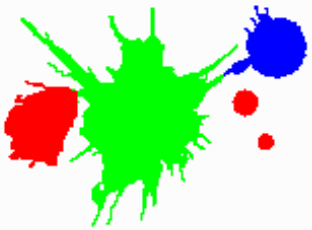
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Curves





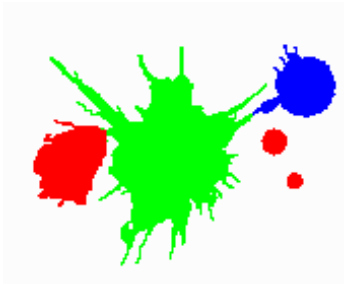




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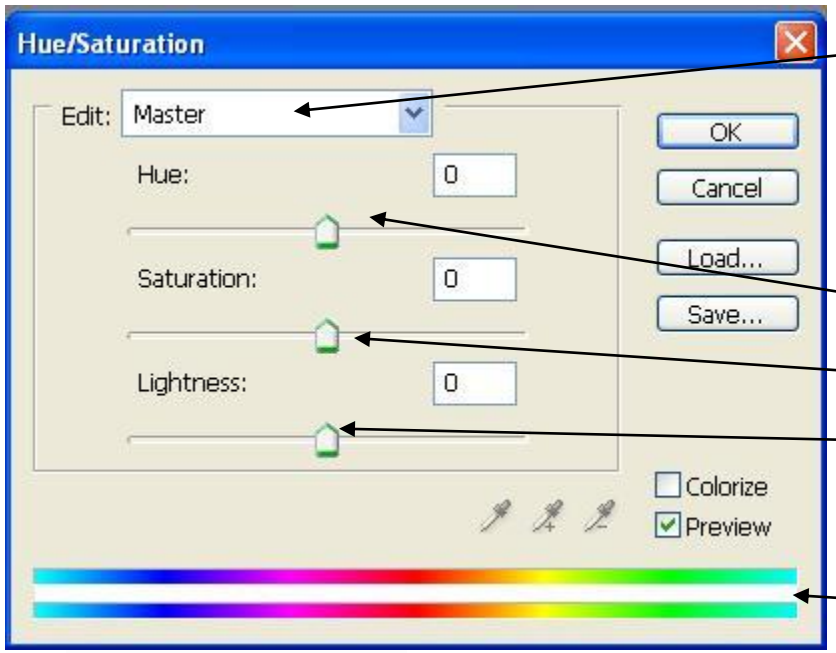
Exercitiu

- Folosind *Levels* si *Curves* modificati imaginile *04AStart.jpg, 04BStart.jpg, 04CStart.jpg, 04DStart.jpg*.



Hue/Saturation

Modificarea nuantei de culoare, saturatiei si luminozitatii



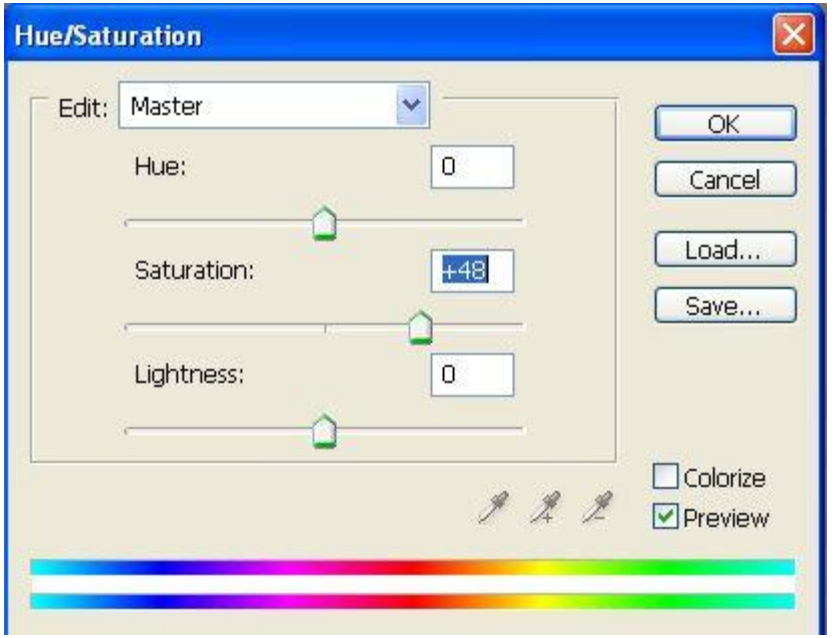
Se pot modifica toate culorile simultan sau separat pe fiecare canal de culoare

Slidere pentru modificarea
- nuantei de culoare
- saturatiei
- luminozitatii

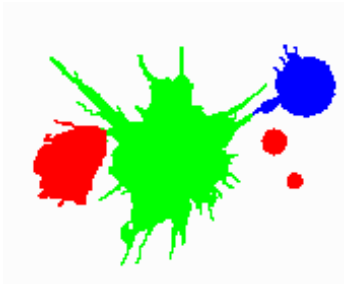
Nuantele inainte si dupa transformare

Hue/Saturation





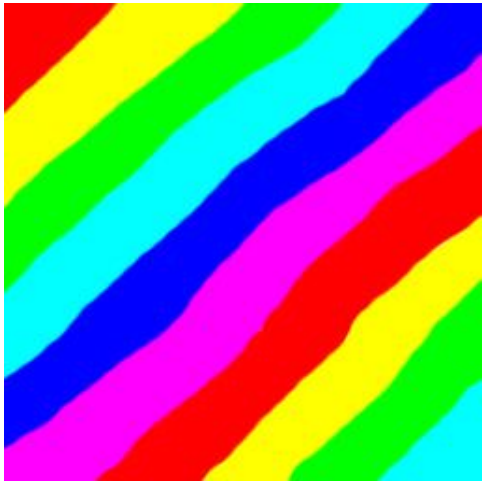


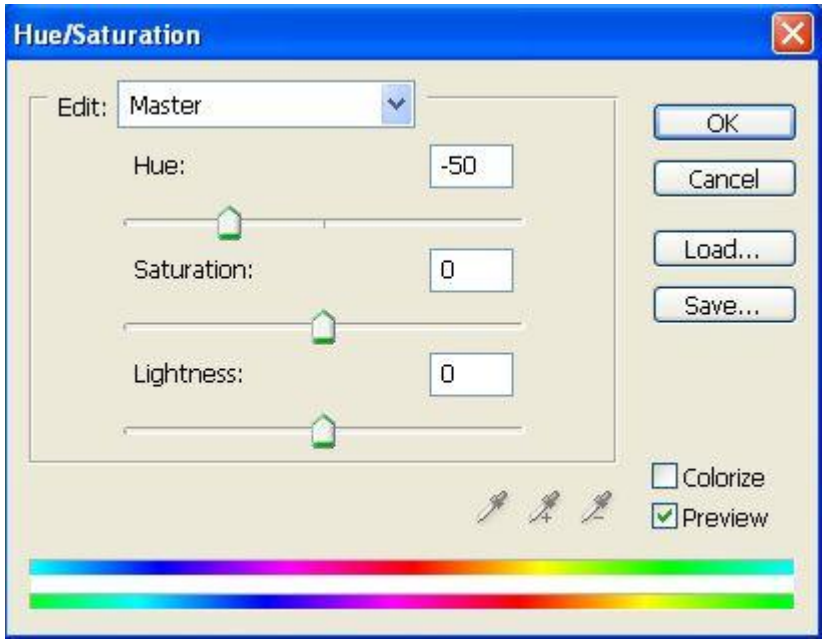


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Hue/Saturation



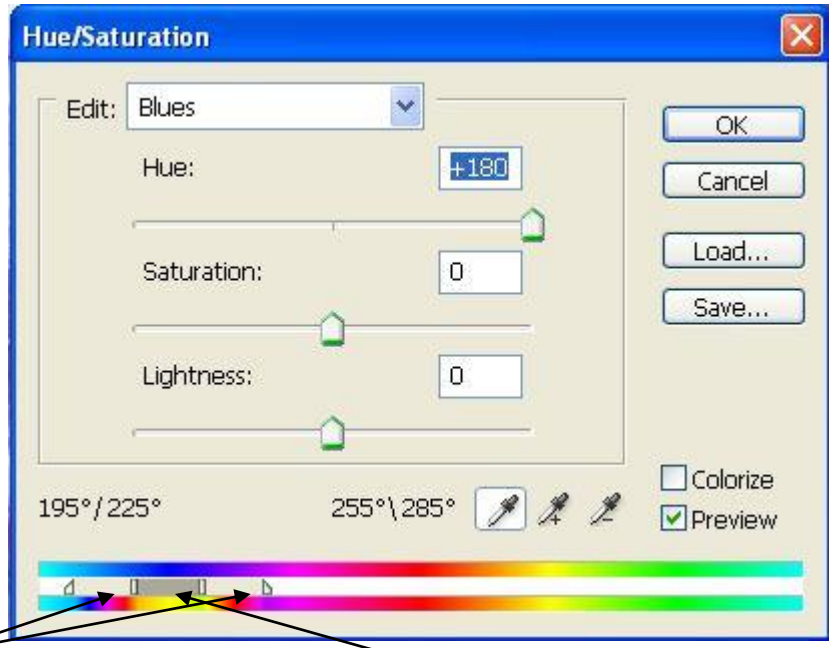




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Hue/Saturation







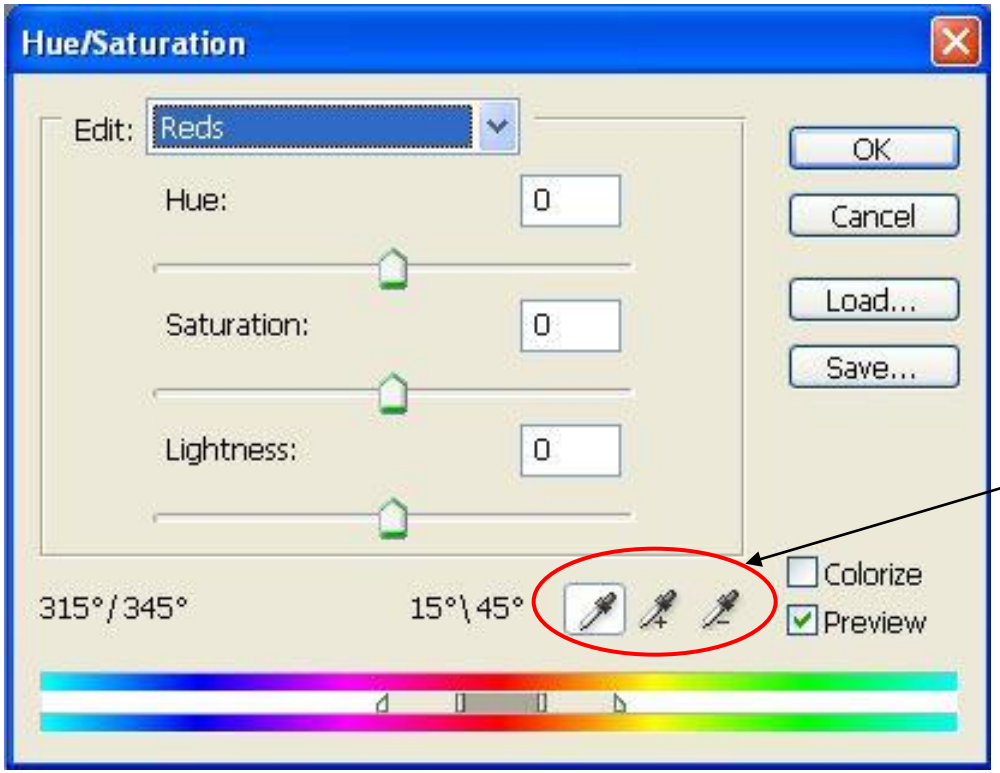
- Zone de culori pe care le modifica partial

Zona de culori pe care le schimba complet

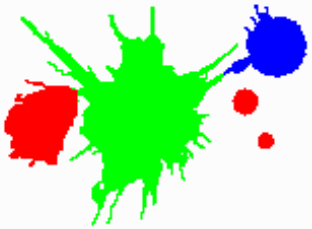
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Hue/Saturation



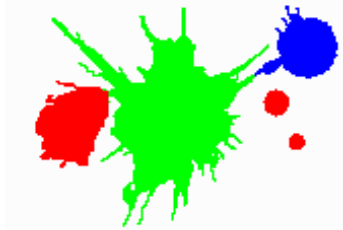
- Selectarea manuala a culorilor



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- Modificati culoarea masinii din imaginea 05*car.jpg* sau a unui balon din *05Baloons.jpg.*

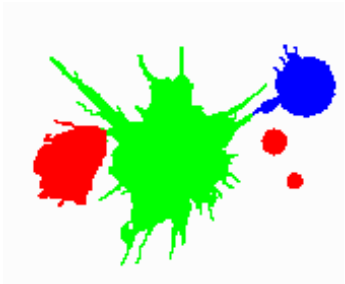


Desaturate

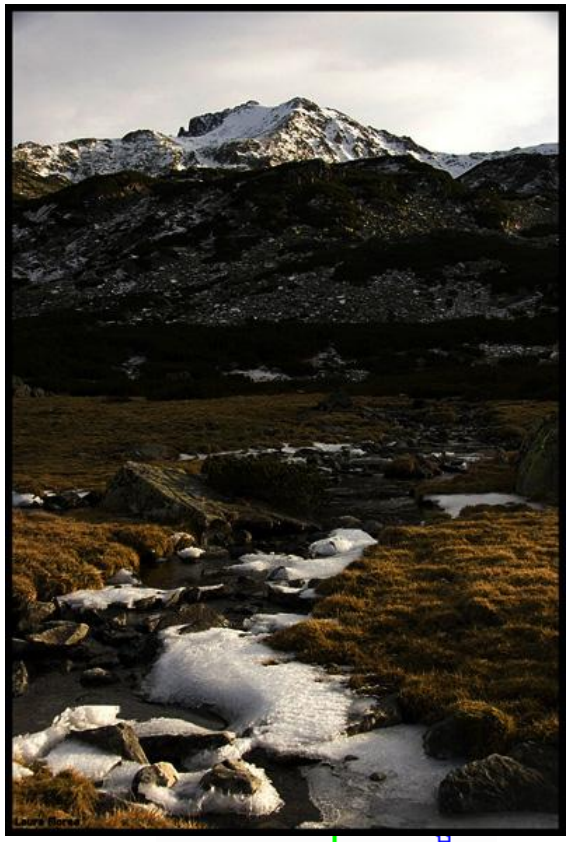
Desaturarea automată a imaginii

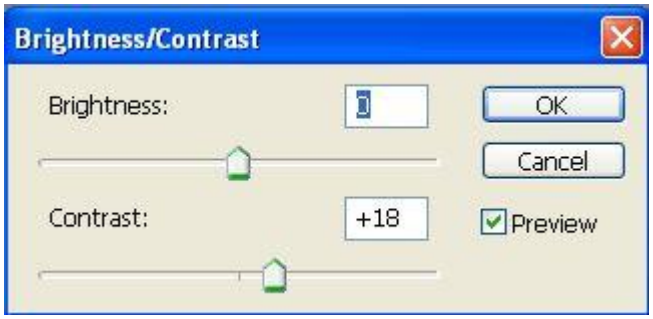


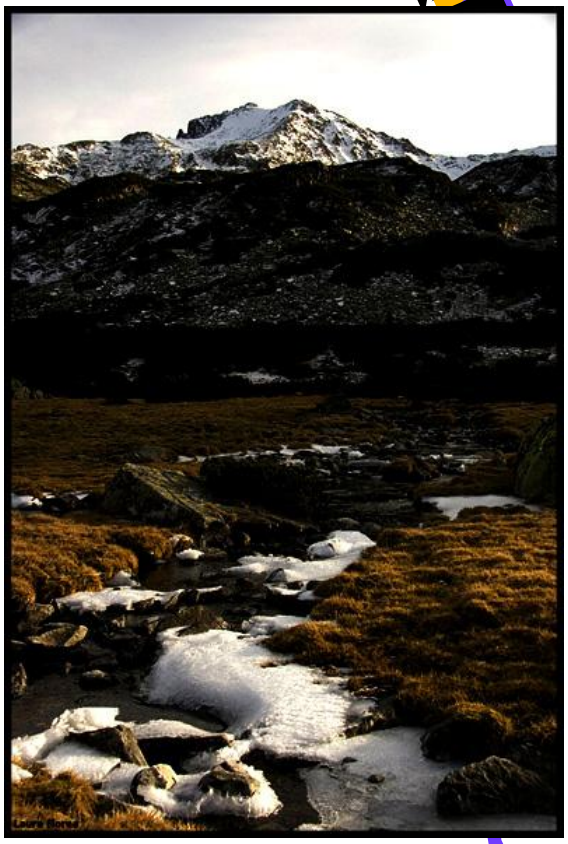




Brightness/Contrast



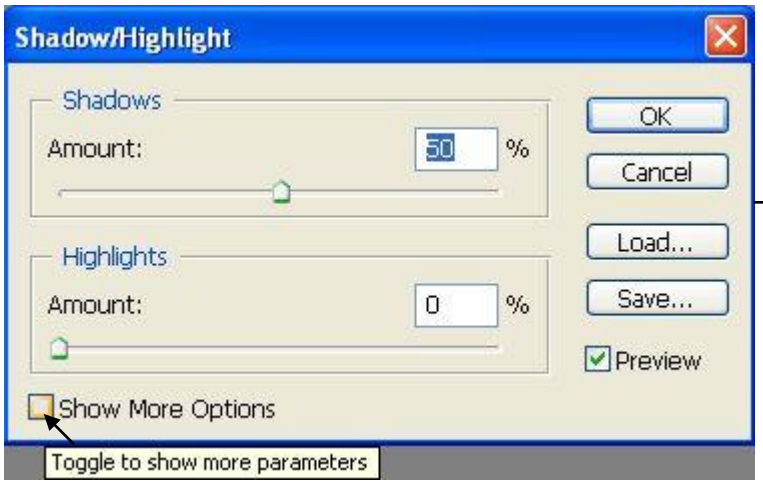


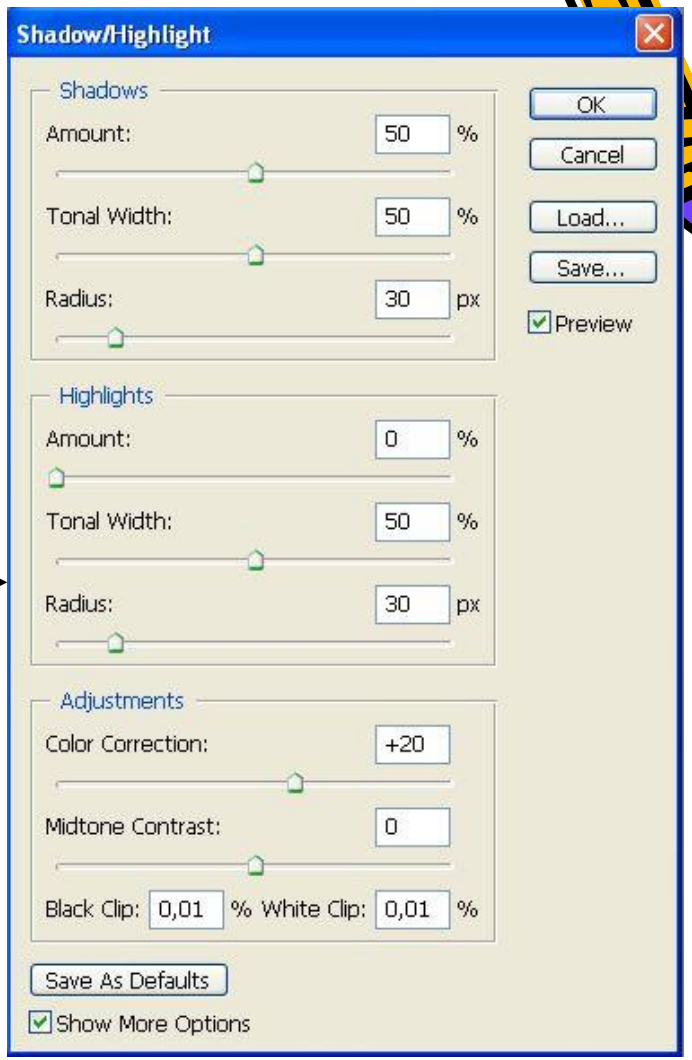


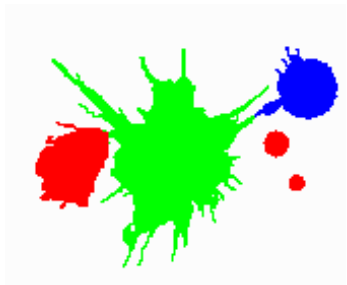
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Shadow/ Highlight

- Lumineaza umbrele si intuneca zonele luminoase





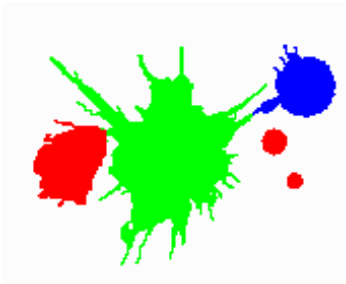


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Shadow/Highlight

- *Amount*: cat de mult lumineaza umbrele/intuneca zonele luminoase
- *Tonal Width*: gama de tonuri care va fi afectata.
    - La *Shadow*: daca e 0% lumineaza numai zonele foarte intunecate; daca se trage catre drepta (100%) lucreaza SI pe zone de luminozitate medie sau chiar pe zonele de luminozitate mare
    - La *Highlight*: daca e 0% intuneca numai zonele foarte luminoase; daca se trage catre dreapta (100%) lucreaza SI pe zone de luminozitate medie sau chiar pe zonele de luminozitate mica
- *Radius*: luminarea/intunecarea se face in functie de pixelii inconjuratori. *Radius* seteaza marimea vecinatatii. Daca se observa blur sau pierdere de detalii -> *Radius* e prea mare.



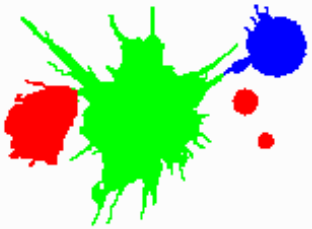
Shadow/Highlight

- Prin modificarile aduse se pierde din saturatie si contrast sau pot aparea culori false
- *Color Correction*: creste/scade saturatia imaginii (in cazul imaginilor color)
- *Brightness*: creste/scade luminozitatea totala (in cazul imaginilor grayscale)
- *Midtone Contrast*: creste/scade contrastul pe zonele de luminozitate medie
- *Black/White clip*: ce procent din nivelurile de gri existente se transforma in negru/alb. Se creste contrastul, dar se pierd detalii in zonele intunecate/luminoase.



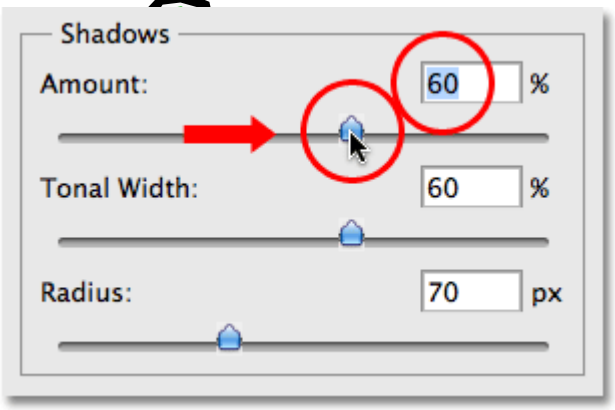
Shadow/Highlight





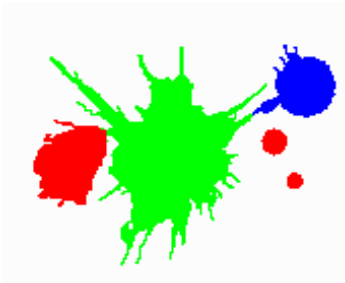
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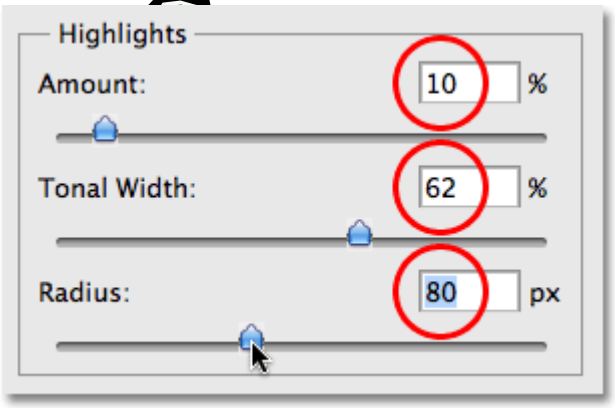
Shadow/Highlight





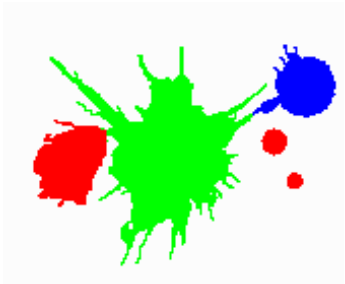
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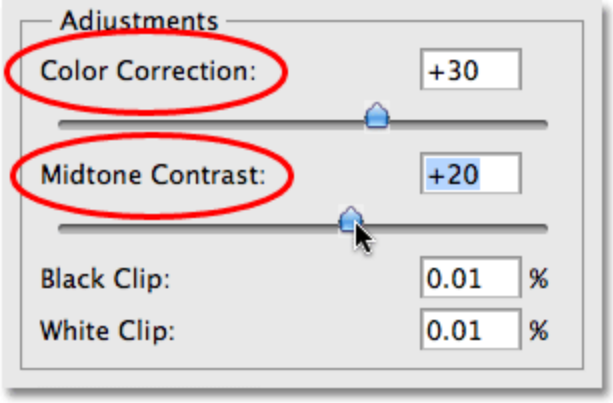
Shadow/Highlight





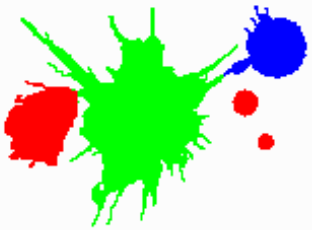
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Shadow/Highlight

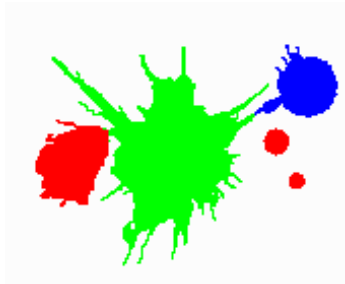




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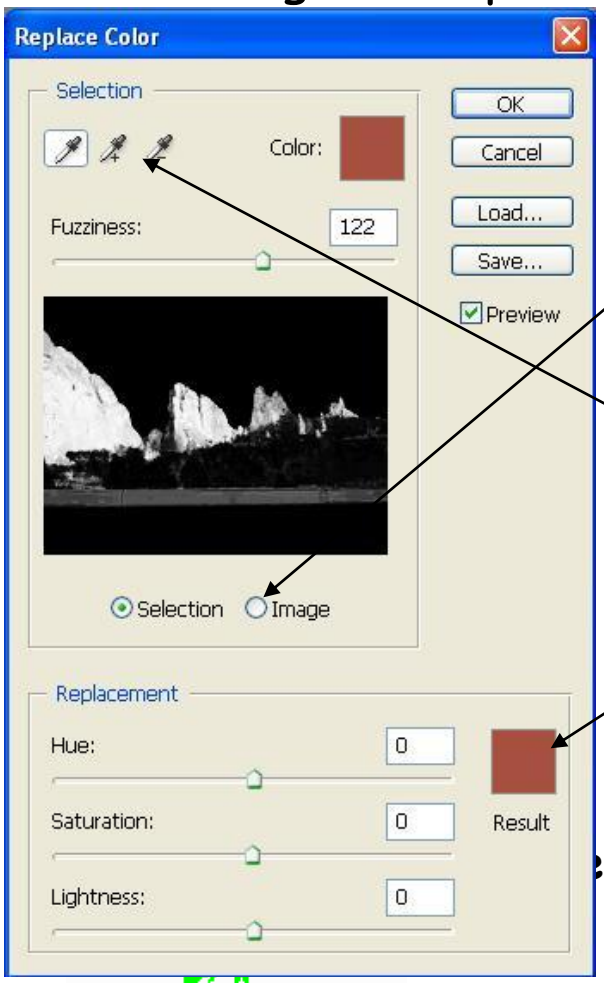
Shadow/Highlight

- Atentie la artefacte!



Replace Color

Permite crearea unei masti pentru a selecta anumite culori dintr-o imagine si apoi înlocuirea lor



Doua optiuni de afisare:

- Selection – afiseaza masca in caseta de previzualizare
- Image – afiseaza imaginea in caseta de previzualizare

Instrumetele pipetă selecteaza/deselecteaza culori din imagine

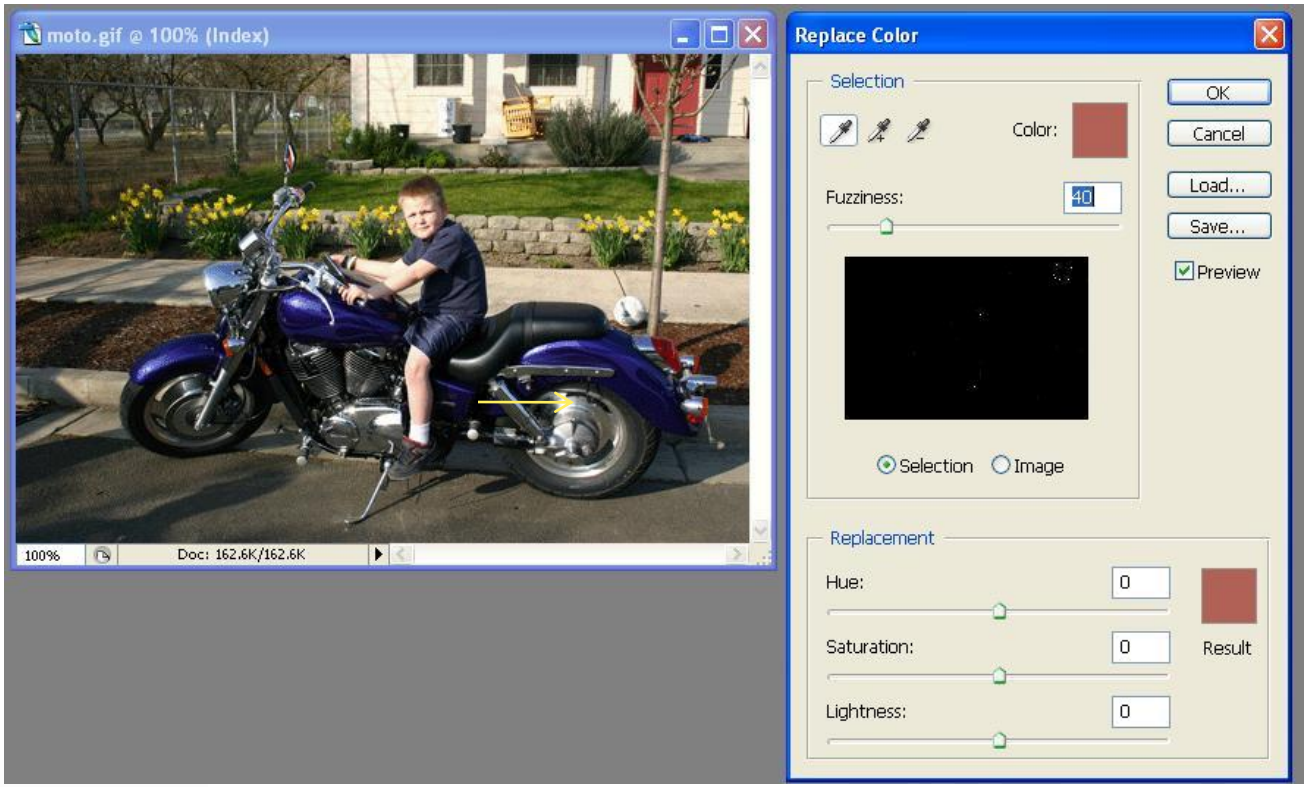
Pentru zonele rezultate se poate seta:

- nuanţa
- saturaţia
- luminozitatea

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Replace Color



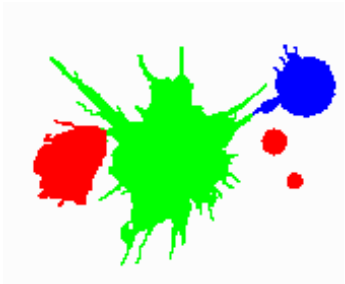
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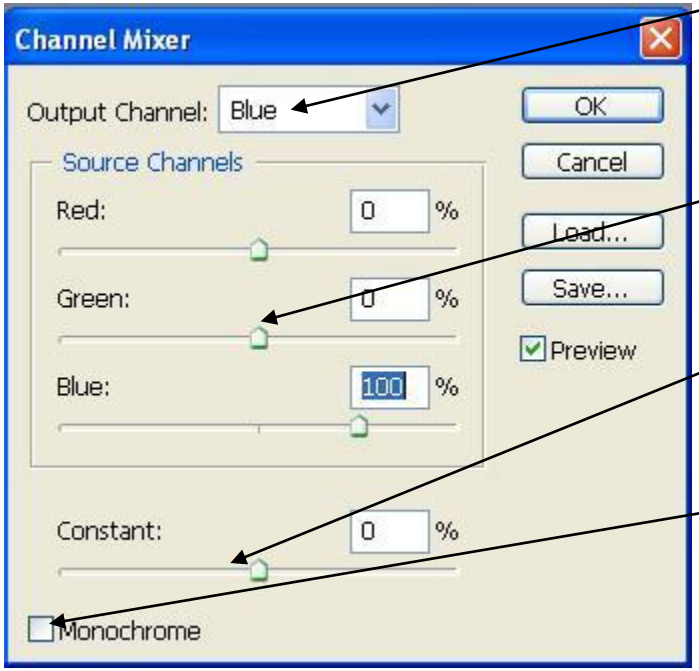
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Poza finală

Channel Mixer

Mixarea culorilor pe fiecare canal



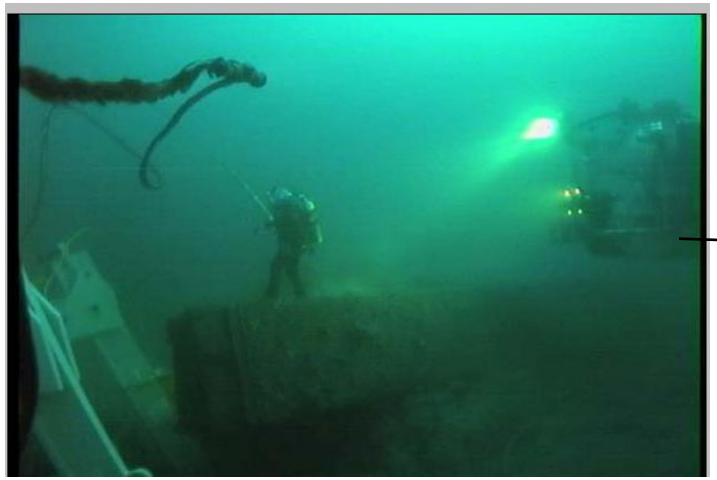
Se selecteaza canalul dorit

Slidere pentru modificarea culorii pe fiecare canal selectat

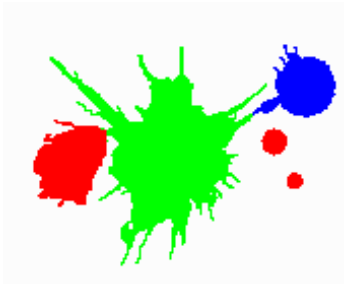
Slider pentru modificarea contrastului

Bifarea căsuţei permite vizualizarea imaginii monocrom si modificarea 'canalului' de gri

Channel Mixer







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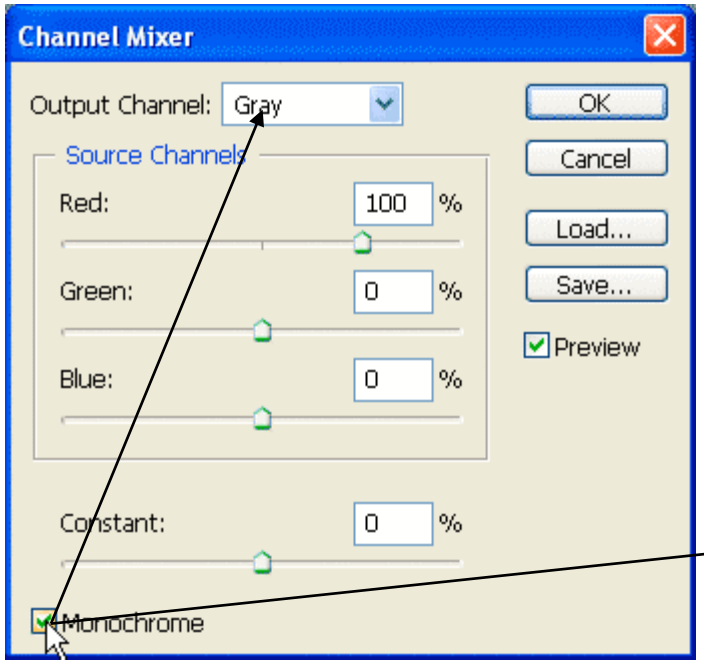
Convertirea imaginii in alb/negru cu Channel Mixer



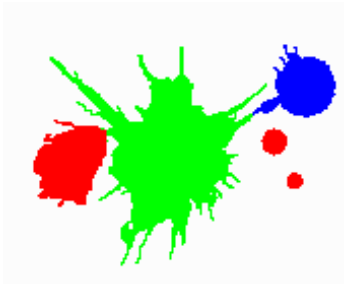


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Convertirea imaginii in alb/negru cu Channel Mixer



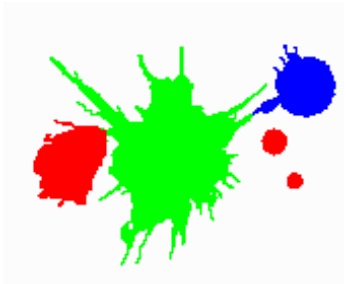




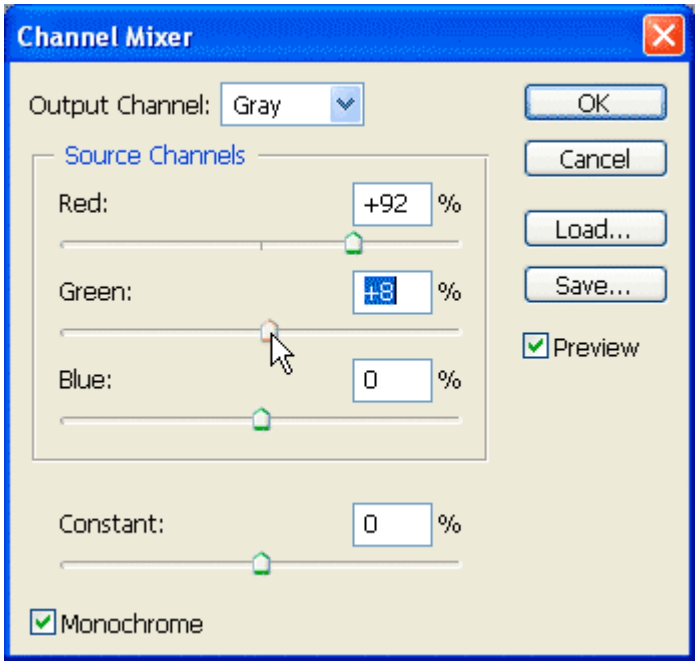
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Convertirea imaginii in alb/negru cu Channel Mixer

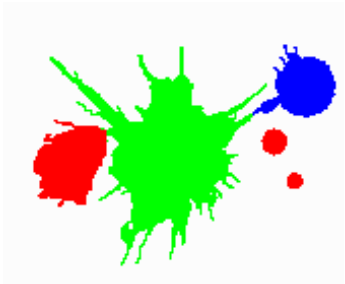
- Implicit se alege canalul de rosu (100%) pentru a crea imaginea alb/negru cand optiunea *Monochrome* e selectata. Informatiile din celelealte doua canele sunt ignorate.
- Deobicei rezultatul nu este satisfacator. Se poate descreste informatia folosita din canalul de rosu si creste cele din canalele de verde si albastru.
- Sfat: Pentru un rezultat cat mai bun ar trebui ca suma celor 3 slidere sa dea 100%. In acest fel se pastreaza contrastul maxim in imagine, fara a ‘arde’ zonele luminoase si fara a pierde detalii in zonele intunecate.



Convertirea imaginii in alb/negru cu Channel Mixer







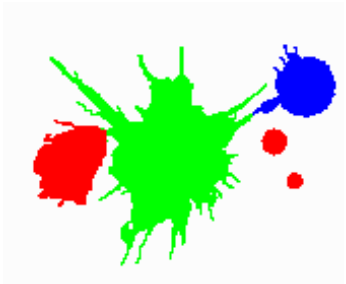
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Convertirea imaginii in alb/negru cu Channel Mixer



desaturate

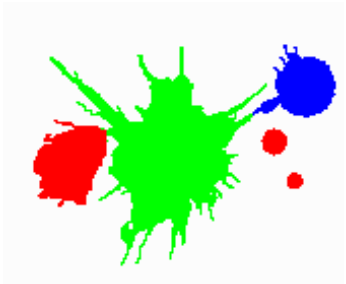


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Convertirea imaginii in alb/negru cu Channel Mixer



Channel Mixer – Red 100%, Green 0%, Blue 0%



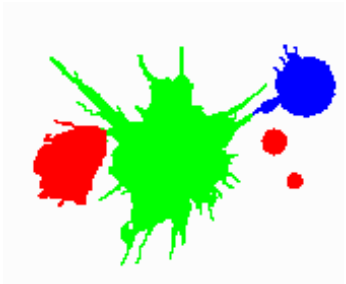
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Convertirea imaginii in alb/negru cu Channel Mixer



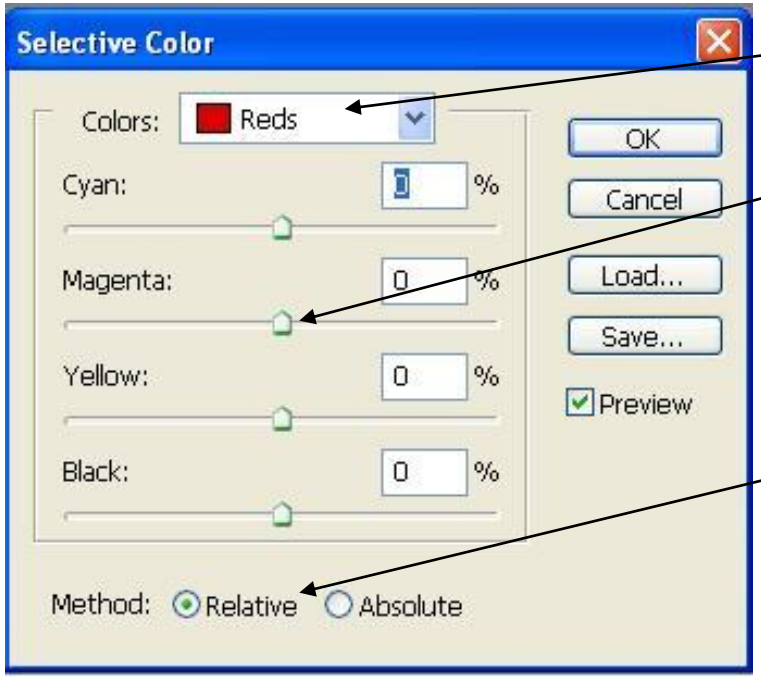
Channel Mixer – Red 92%, Green 8%, Blue 0%



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Selective Color

Se poate schimba cantitatea de culoare din orice culoare primară în mod selectiv, fără a influenţa celelalte culori primare.



Selectia culorii dorite

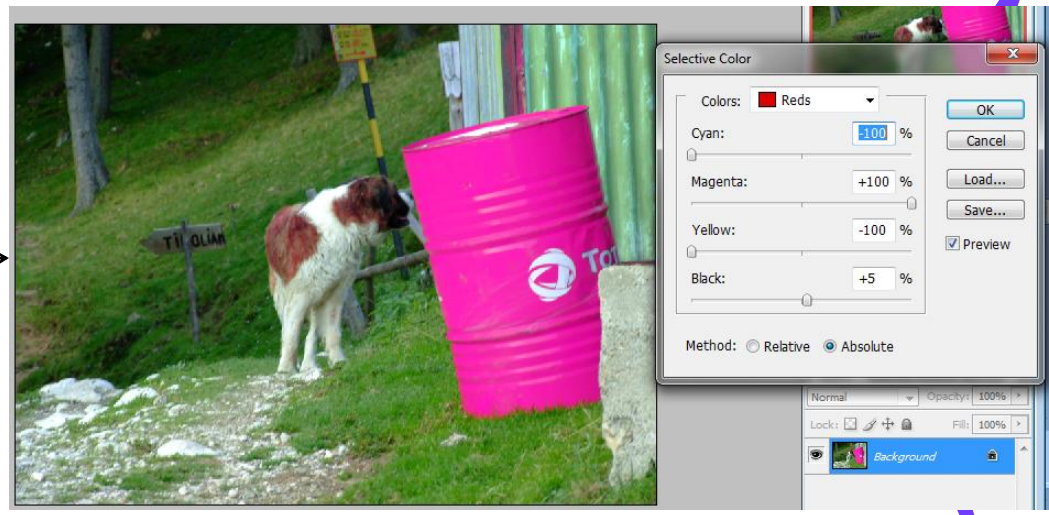
Slidere pentru a mari/micsora componenetele din culoarea selectata

Două metode:

- relativă = schimbă cantitatea existentă de C, M, Y, K după procentajul total
- Absolută = ajustează culoarea în valori absolute

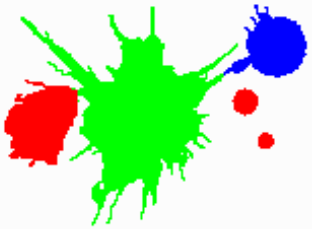
Selective Color





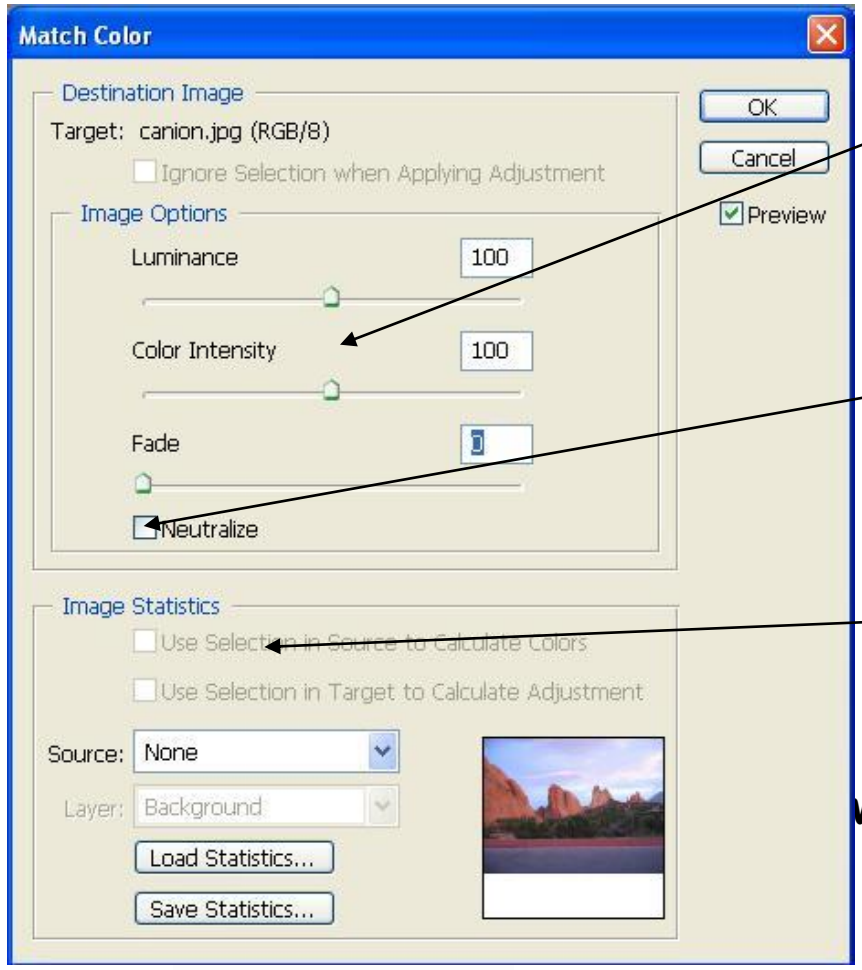
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- Folositi Selective Color pentru a modifica imaginea *09Start.gif*. Un exemplu il puteti vedea in *09End.gif*



Match Color

Corectarea a două sau mai multe fotografii ce vor fi folosite într-un montaj prin ajustarea culorilor astfel incat sa semene



Schimbă luminozitatea imaginii, intensitatea culorilor si gradul de aplicare al instrumentului

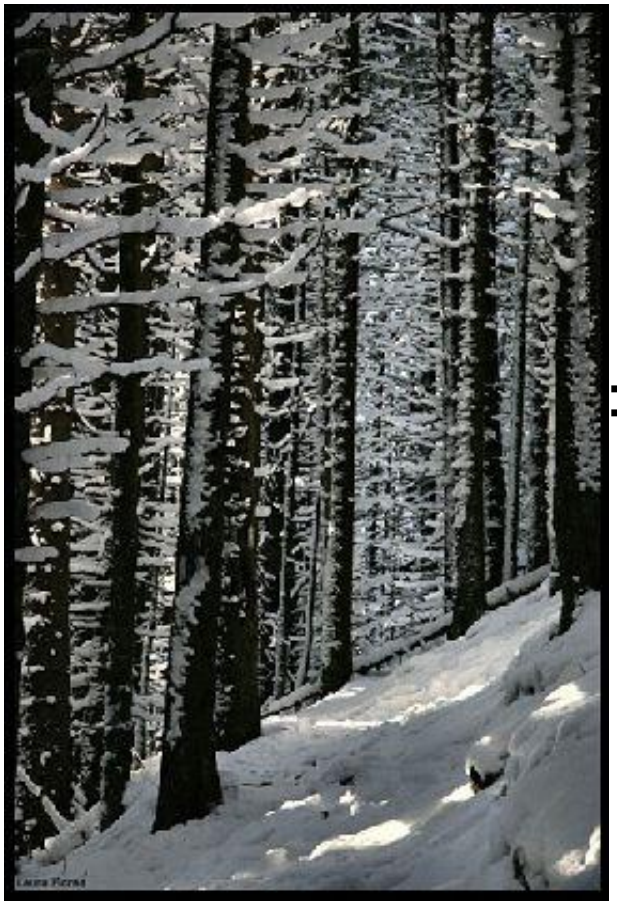
Opţiunea este bifată daca imaginea pe care dorim să o modificăm are o dominantă de culoare

Ajustările parţiale se aplică prin bifarea opţiunilor din Image Statistics

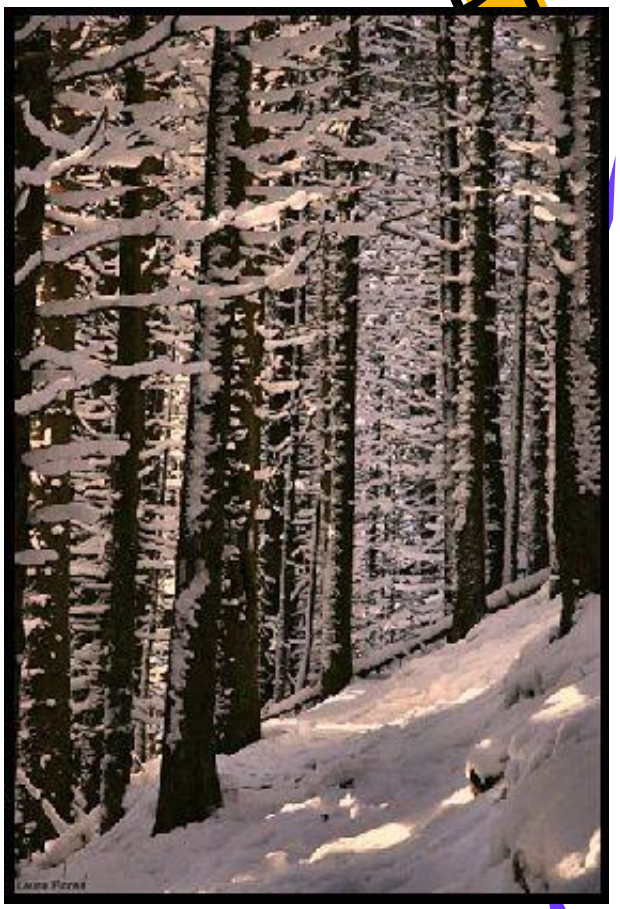
Match Color

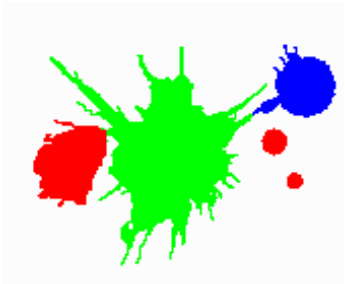


+



=

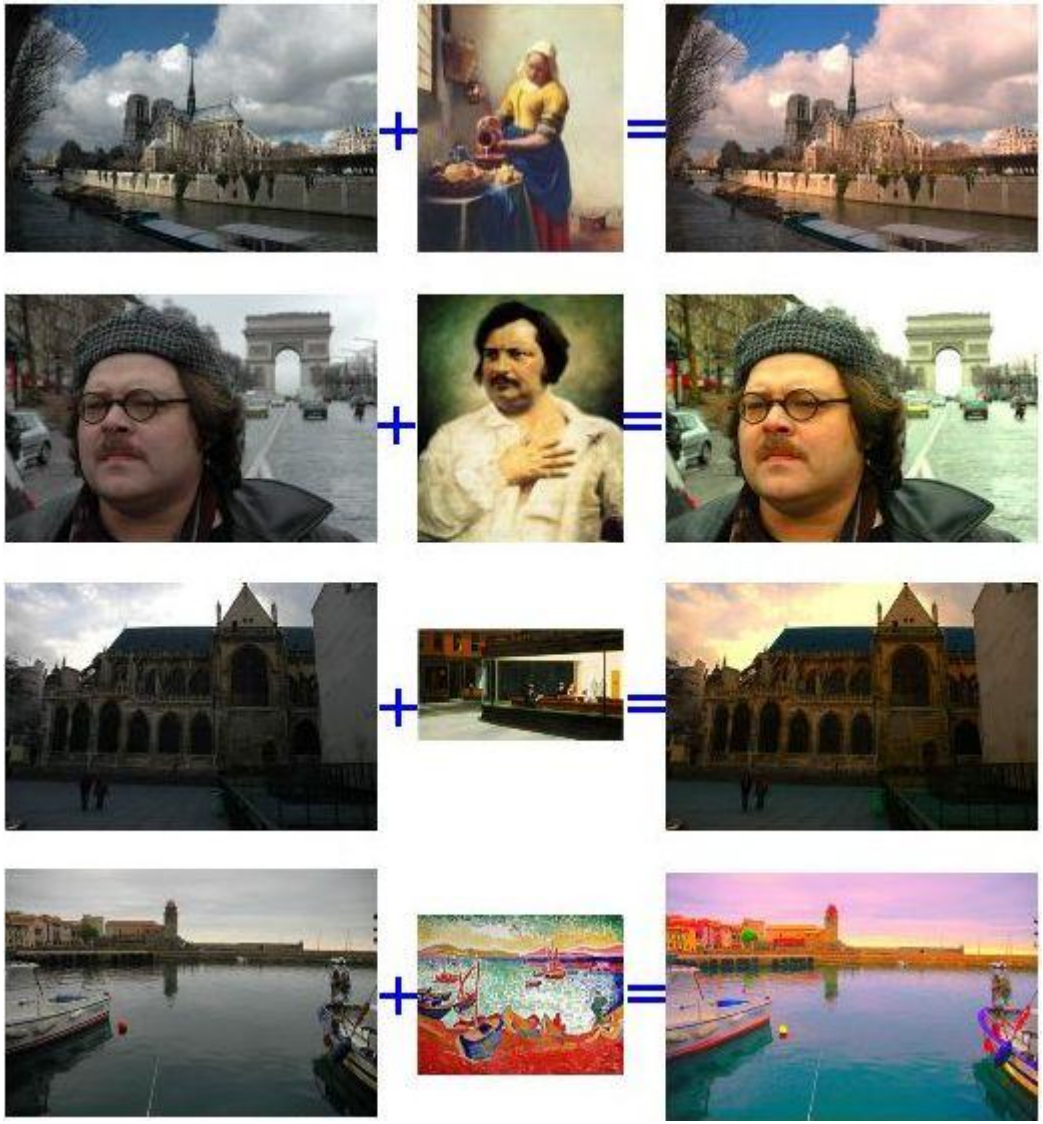




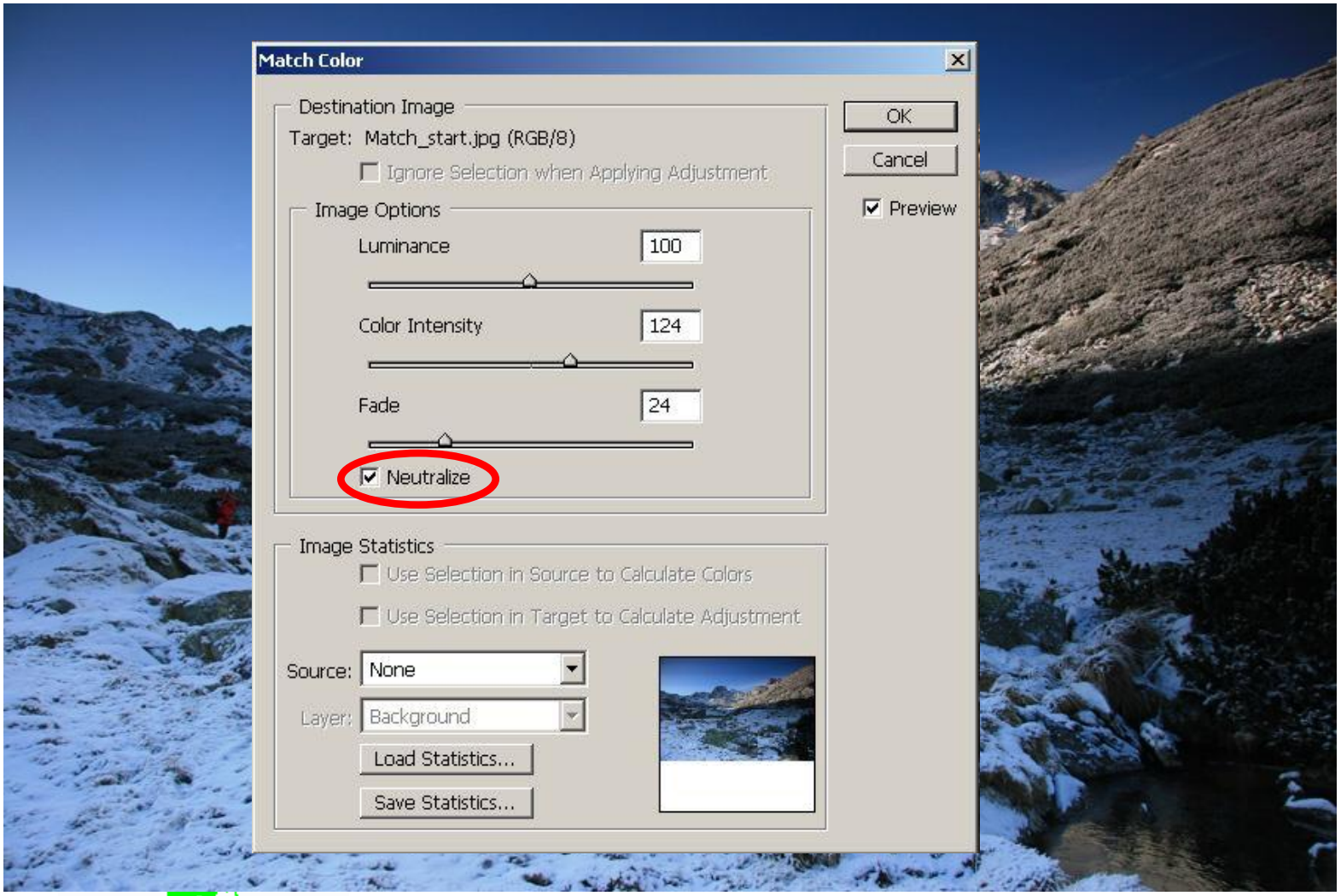
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Match Color



Match Color


Match Color
Destination Image
Target: Match_start.jpg (RGB/8)
Ignore Selection when Applying Adjustment
Image Options
Luminance
100
Color Intensity
124
Fade
24
Neutralize
OK
Cancel
Preview
Image Statistics
Use Selection in Source to Calculate Colors
Use Selection in Target to Calculate Adjustment
Source:
None
Layer:
Background
Load Statistics...
Save Statistics...



- Modificati imaginile: *07A1.jpg* (folosind *07A1a.jpg*), respectiv *07A1Start.jpg* sau *07A2Start.jpg.*

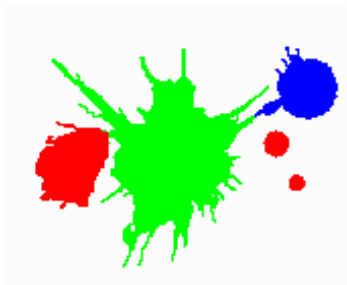
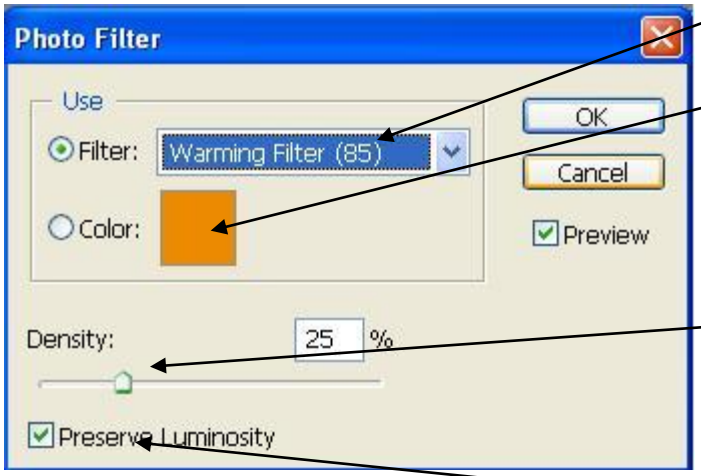


Photo Filter

Aplicarea unor filtre predefinite imaginilor



Tipul de filtru (predefinit)

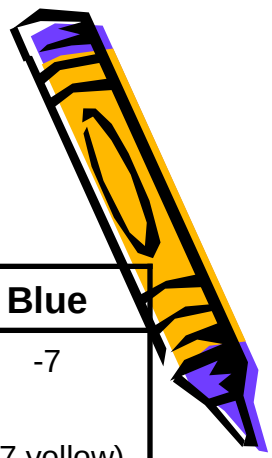
Filtru definit de utilizator

Densitatea filtrului
(intensitatea modificarii)

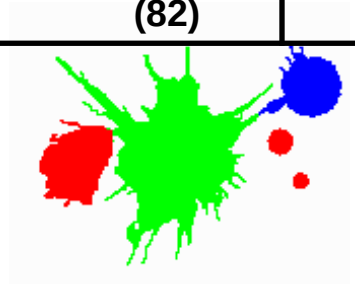
Păstrarea luminozităţii imaginii



Photo Filter



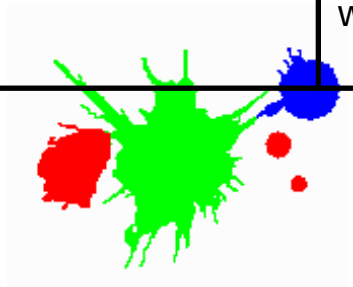
Filter	Uses	Red	Green	Blue
Warming Filter (85)	Correct for using tungsten white balance (Light bulb icon) with daylight	5	-2 (+2 magenta)	-7 (+7 yellow)
Warming Filter (LBA)	Stronger version of the above filter	7	-2 (+2 magenta)	-7 (+7 yellow)
Warming Filter (81)	Warms up the color	4	-1 (+1 magenta)	-7 (+7 yellow)
Cooling Filter (80)	Correct for using daylight white balance (Sun icon) with tungsten lighting	-6 (+6 cyan)	0	19
Cooling Filter (LBB)	Slightly different from the above filter	-4 (+4 cyan)	-1 (+1 magenta)	19
Cooling Filter (82)	Cools down the color	-15 (+15 cyan)	3	24



Sisteme Software de Prelucrarea Imaginilor

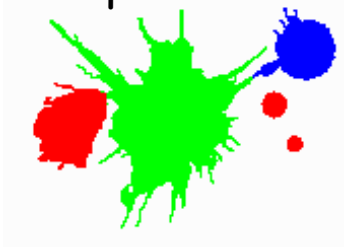
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Filter	Uses	Red	Green	Blue
Red		8	-3 (+3 magenta)	-3 (+3 yellow)
Orange		7	-2 (+2 magenta)	-5 (+5 yellow)
Yellow		-12 (+12 cyan)	0	-10 (+10 yellow)
Green		-5 (+5 cyan)	3	-5 (+5 yellow)
Cyan		-6 (+6 cyan)	2	5
Blue		-2 (+2 cyan)	-1 (+1 magenta)	9
Violet		2	-3 (+3 magenta)	8
Magenta	Correct for using daylight white balance (Sun icon) with florescent lighting	6	-4 (+4 magenta)	6



Filter	Uses	Red	Green	Blue
Sepia	Toning B&W photographs	2	-1 (+1 magenta)	-3 (+3 yellow)
Deep Red		12	-6 (+6 magenta)	-4 (+4 yellow)
Deep Blue		-2 (+2 cyan)	0	8
Deep Emerald		-4 (+4 cyan)	2	-2 (+2 yellow)
Deep Yellow		4	0	-10 (+10 yellow)
Underwater		-5 (+5 cyan)	2	1

Exemplele din tabel sunt la *densitate* 25% cu *Preserve Luminosity* bifat.

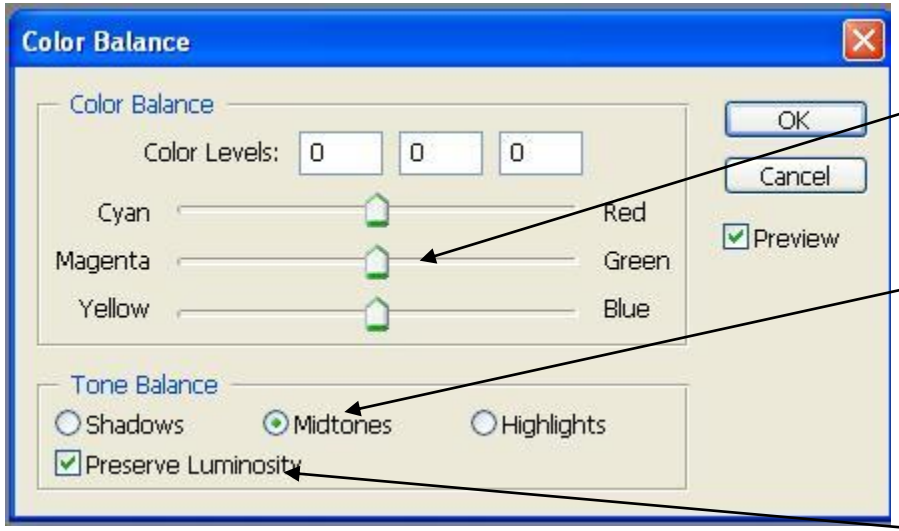


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Color Balance

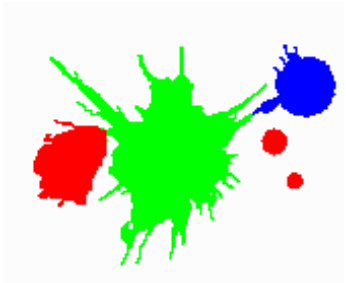
Modificarea amestecului de culoare dintr-o imagine. Poate fi folosita pentru rezolvarea problemelor de *white balance*.



Ajustarea nuanţelor de culoare din imagine

Alegerea intervalului tonal în care în care se vor efectua modificări

Se poate păstra luminozitatea



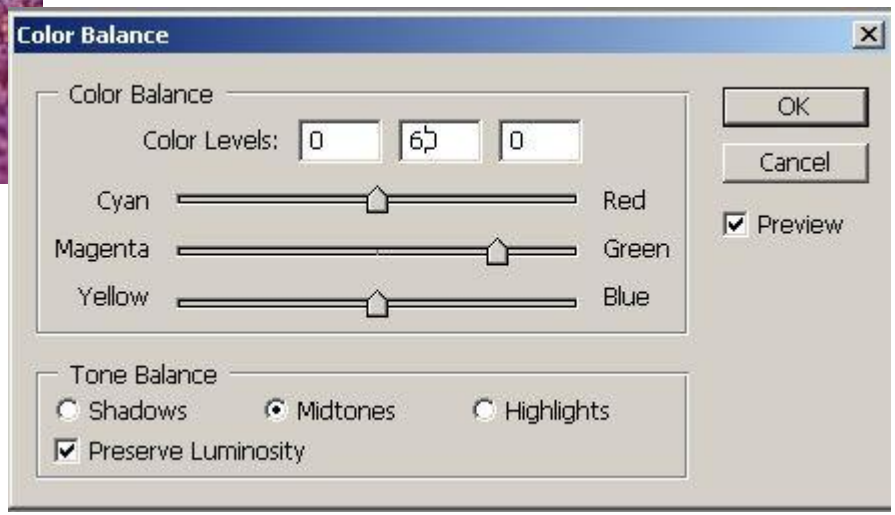
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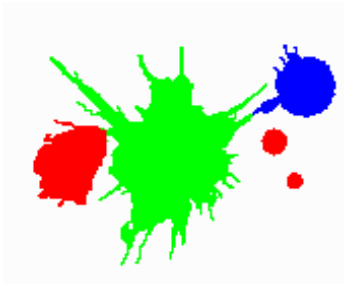


Color Balance









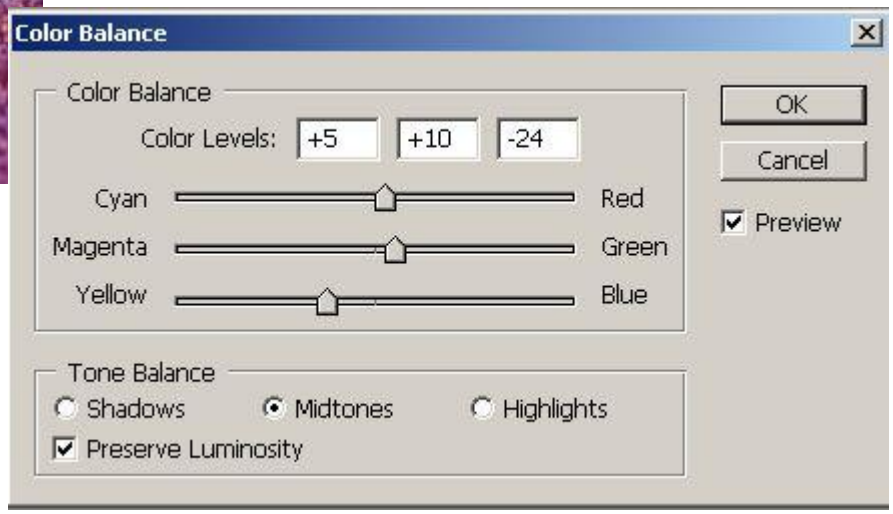
Sisteme Software de Prelucrarea Imaginilor

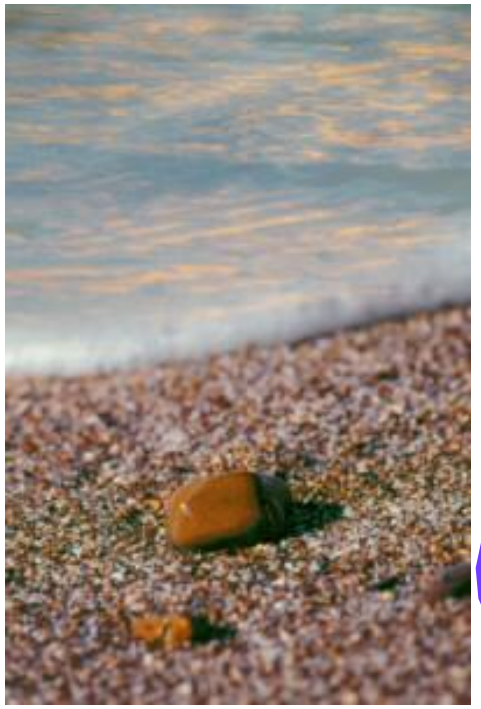
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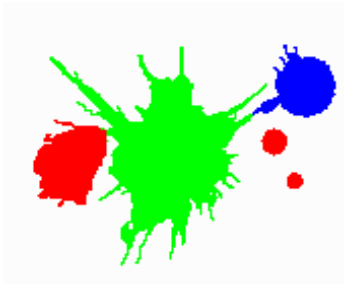


Color Balance





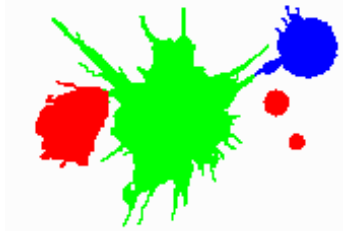




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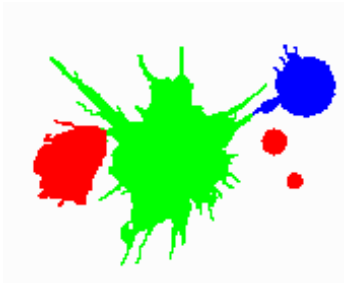
- Urmariti exemplul din curs de la Color Balance si modificati imaginile: *08AStart.jpg* si *08Start.jpg.*





Color Balance



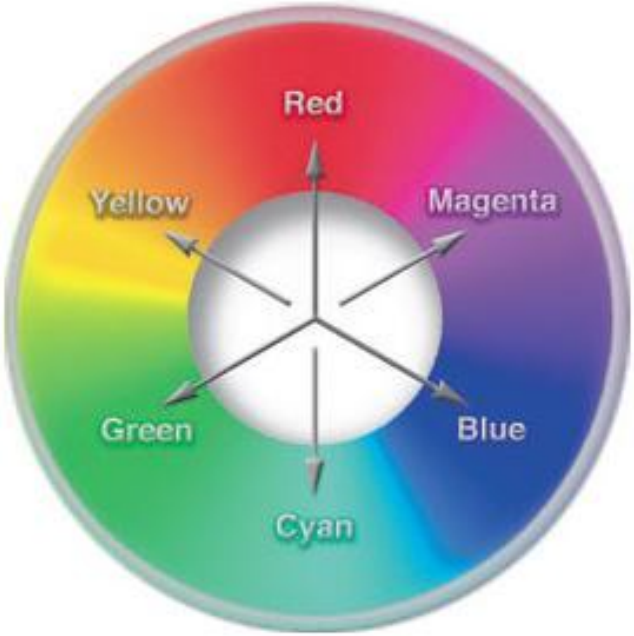


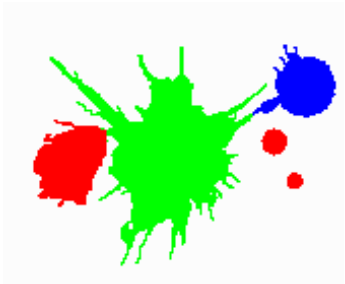
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Variations

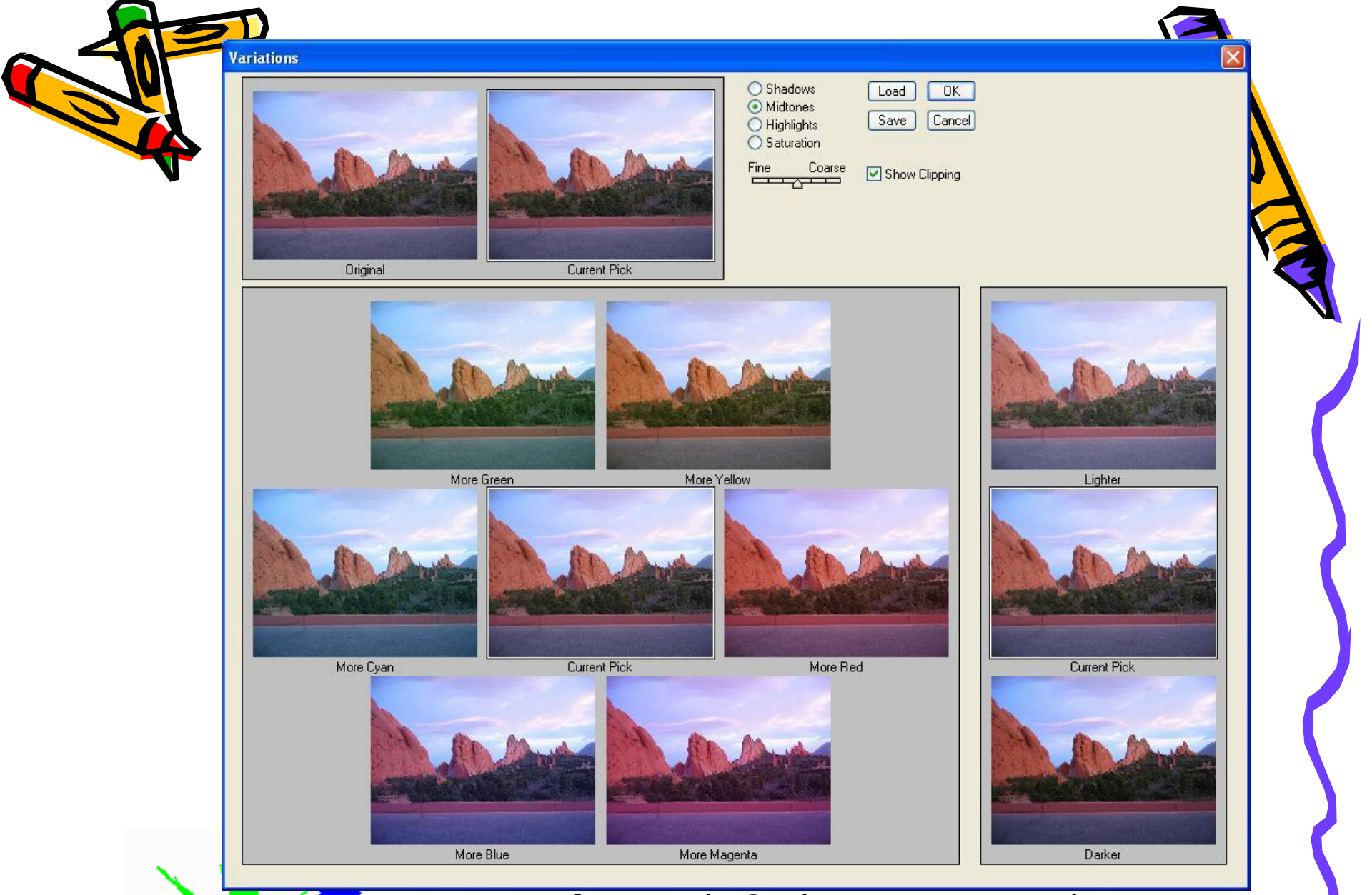
Modificarea redarea culorilor în şase direcţii





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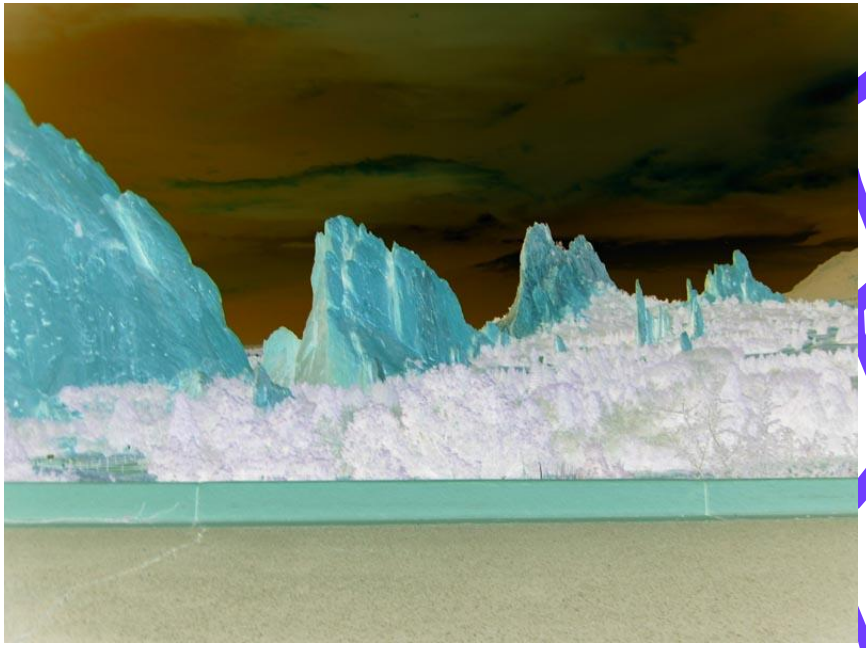
Sisteme Software de Prelucrarea Imaginilor

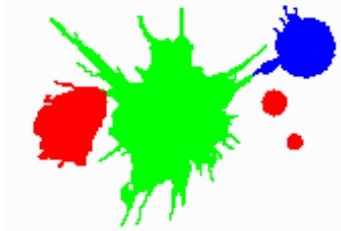
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Invert

Inversează nuanţele culorilor din imagine





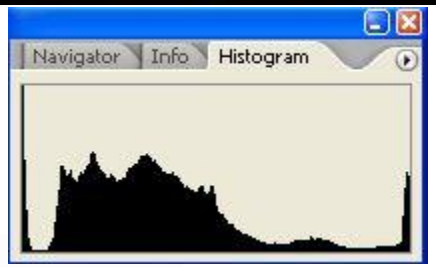


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Equalize







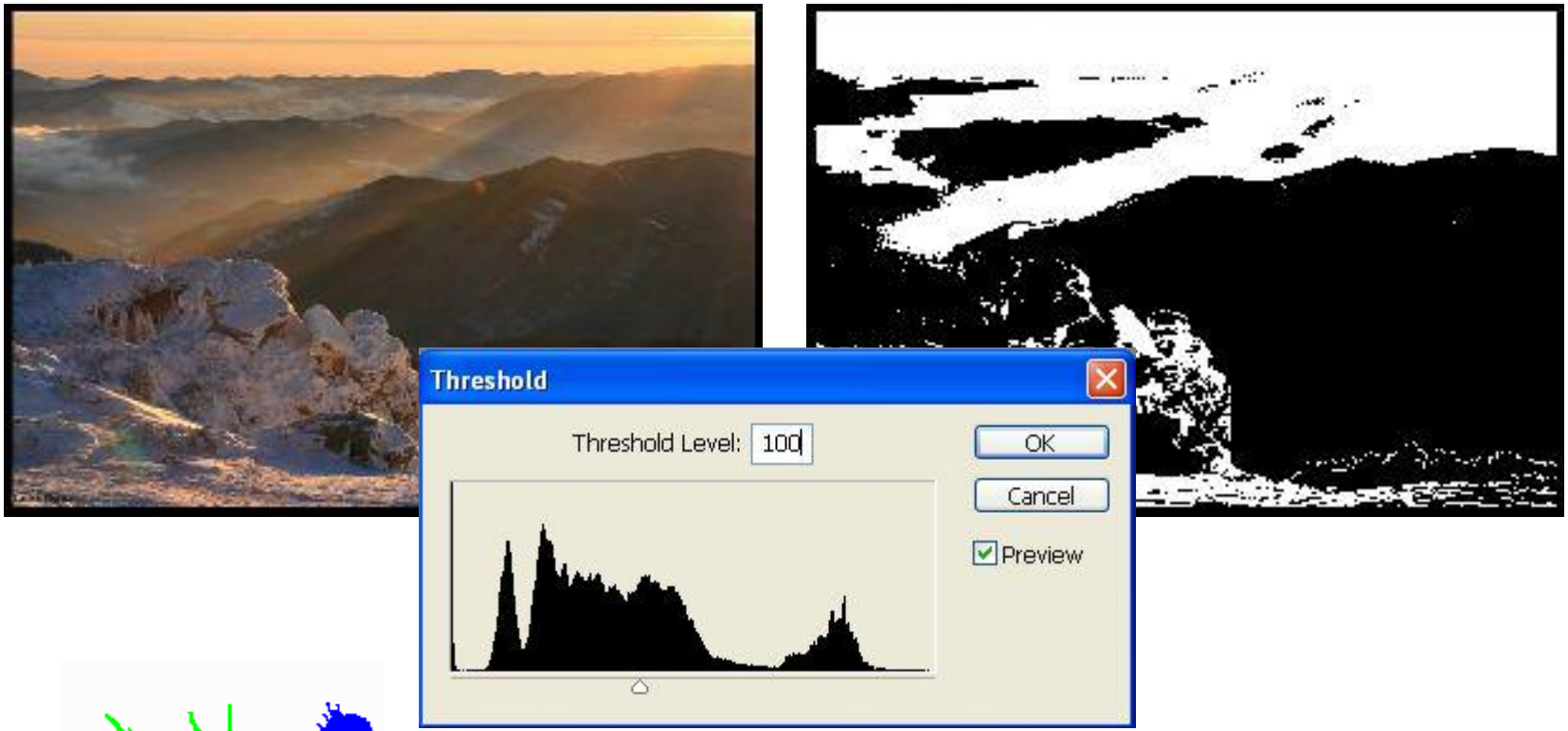




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Threshold

- Segmentare pe histograma cu 1 prag setat de utilizator

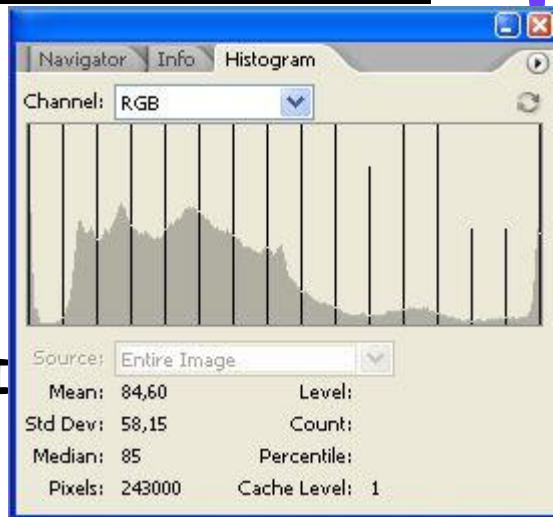


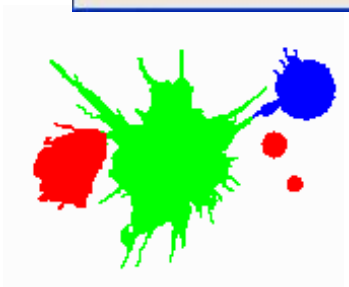
Posterize









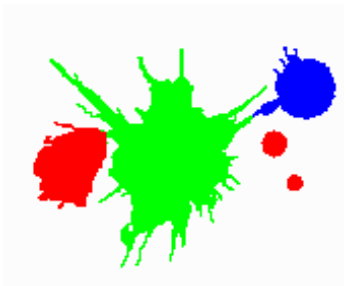


Sisteme Software de Prelucrarea I

SL. Dr. ing. Laura Florea

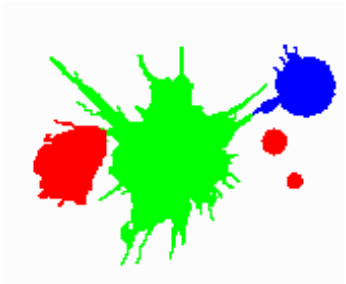
Identificarea culorilor din afara gamei reproductibile

- O gamă reproductibilă reprezintă intervalul de culori pe care il poate afişa sau tipări un sistem de culori
- O culoare care poate fi afişată in RGB ar putea fi în afara gamei reproductibile şi aşadar netipăribilă pentru setarea CMYK.

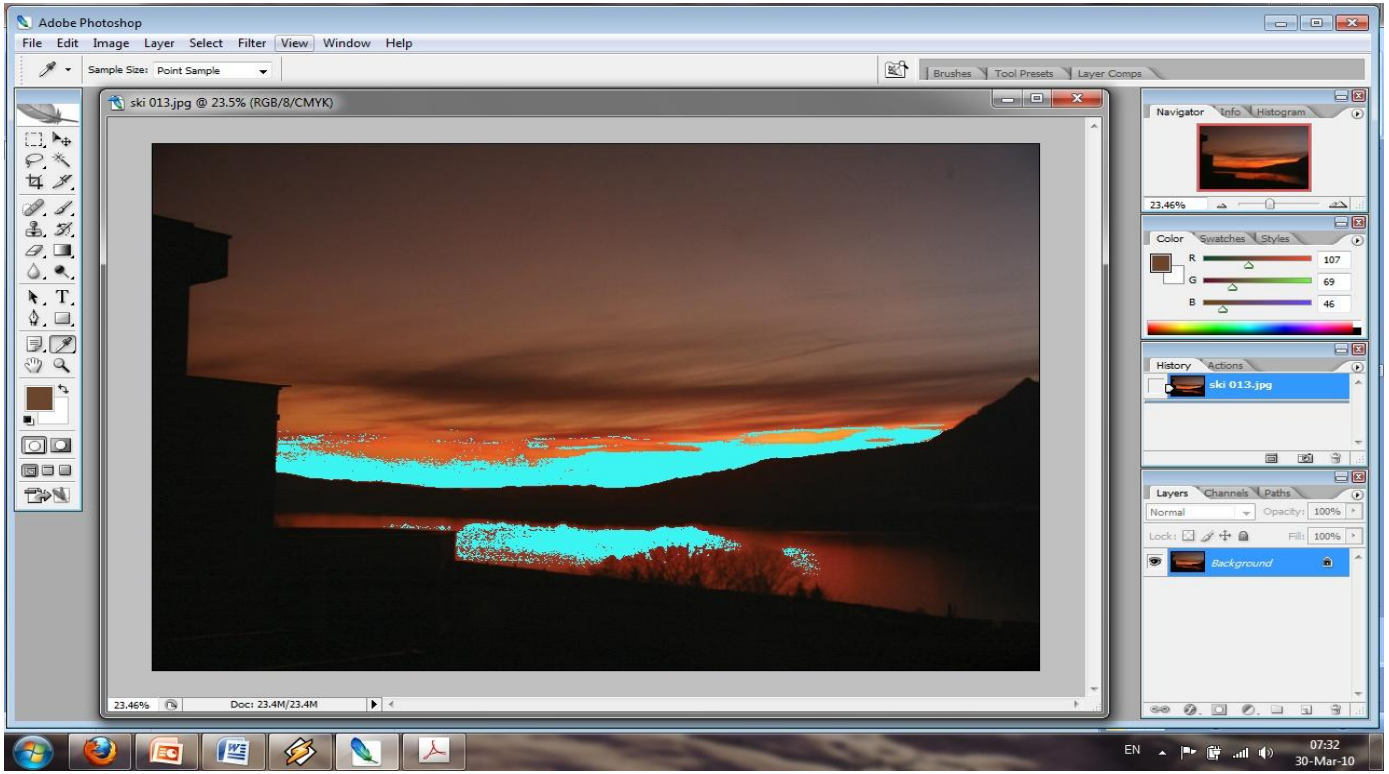


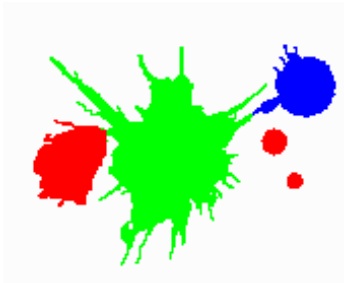
Identificarea culorilor din afara gamei reproductibile

- Căutarea culorilor din afara gamei reproductibile (căutăm culorile din RGB nedisponibile în CMYK):
  - View»Proof Setup»Working CMYK
  - View»Gamut Warning
- Putem alege o culoare mai vizibilă pentru afișarea acestor culori:
  - Edit»Preferences»Transparency&Gamut



Identificarea culorilor din afara gamei reproductibile





Sisteme Software de Prelucrarea Imaginilor

SL. Dr. ing. Laura Florea

Bibliografie

- http://www.photoshopcafe.com/tutorials/layers/intro.htm
- http://www.graphics.com
- http://www.cambridgeincolour.com/
- http://www.photoshopessentials.com/
- http://www.adobepress.com
- http://shapeshed.com/journal/photoshop_101_the_clone_tool/
- http://www.naturescapes.net/062004/gd0604.htm
- http://www.lonestardigital.com/history_brush.htm
- http://www.showandtell-graphics.com/change-color.html
- http://www.unfocusedbrain.com/projects/match_color/
- http://www.photokaboom.com/photography/learn/Photoshop_Elements/photo_filter_adjustment_layers/1_photo_filter_adjustment_layers_basic.htm
- http://www.worldbirds.co.uk/correcting_colour_balance.aspx
- Adobe Photoshop CS2 Tools & Basics, University Libraries, Iunie 2006.
- Adobe Photoshop CS2, Curs oficial Adobe, Teora 2006.
- Elaine Weinmann, Peter Lourekas: Photoshop for Windows & Macintosh, Peachpit Press

- Multumesc pentru ajutor masteranzilor Vlad Povarna si Ciurea Alexandru (SIVA 2010)!

