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EE 451

For KCST

EE101 - EE112 - EE211 - EE201 - EE212
- EE312 - EE341 - EE342 - EE351 -
EE352 - EE365 - EE410 - EE441 - EE442
- EE443 - EE451

فالكم A

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Image Processing

- الصوره
- عمليات
  - تغيير الألوان
  - اكتشاف حواف الأشياء فى الصوره
  - تحسين جوده الصوره

- اختيارى → MCQs
- ملئ → توتوريال

* Digital images:

أى صوره تتكون من مجموعه من الـ Pixels

* Pixel:

is the term used most widely to denote the element of digital image.



* The image ⟶ 2-D
two dimentional array
f(x,y)

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The range of pixels ⟶ 0 and 255

✡ Applications of image processing:

- Medical field.
- Machine / Robot vision.
- Color processing.
- Video processing.

* The quality of image depend on dpi

Pixels ↑ dpi ↑ quality ↑

↓ ↓ ↓

* Note:

Better quality implies more dpi

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120x80 Pixels

60x40 Pixels

20x20 Pixels

whet is the image which has better quality.

120x80 Pixels is the better quality.

* Note:

Better quality implies more bits to encode the pixels intensity.

quality ↑ bits ↑

what is the image which has better quality.



5 bits 8 bits 6 bits 4 bits 1 bits

8 bits is the image has better quality.

☆ Color of light types :

① Achromatic light

Black , white

② Chromatic light

ⓐ Primary colors of light

red , green , blue ←

ⓑ Secondary colors of light

cyan , magenta , yellow

Magenta ⟶ R + B

Cyan ⟶ G + B

yellow ⟶ R + G

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* Characteristic of colors :

- Brightness.
- Hue.
- Saturation.

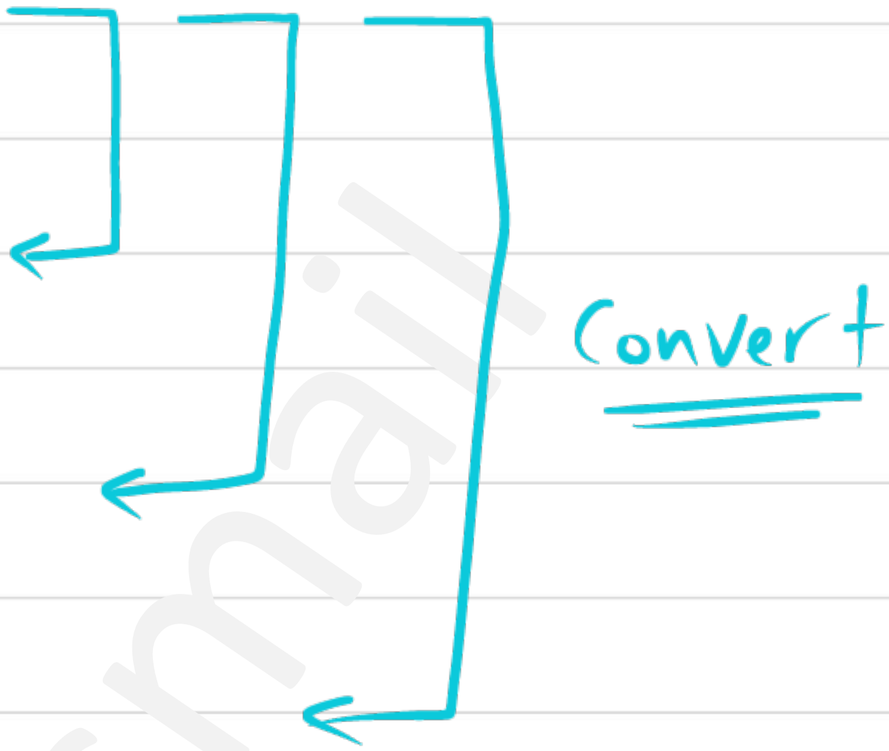
* Note :

Hue and saturation taken together are called chromaticity.

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☆ Color models :

* RGB Color model
* CMY Color model
* CMyK Color model
* HSI Color model



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