

DESIGNER TOOLS

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INTRODUCTION

A language for graphical designers...

It is intended to make the work of the designer easier, the grammar will be on English so everyone can use it, it is intended to be used by people that doesn't know how to program.

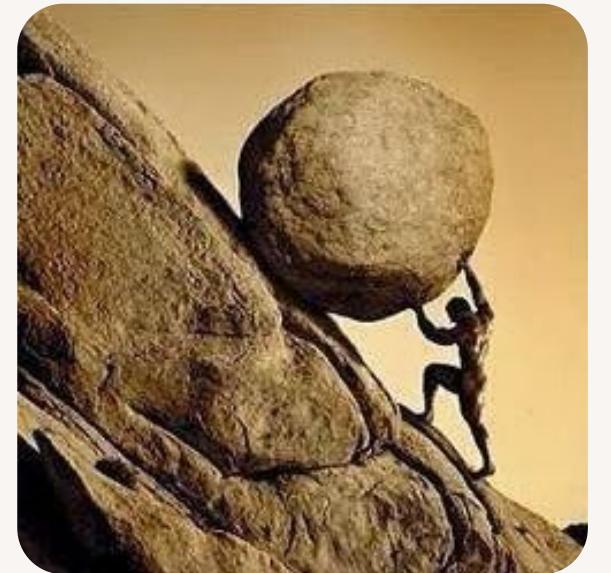


pillow



JUSTIFICATION

Work smarter, not harder...

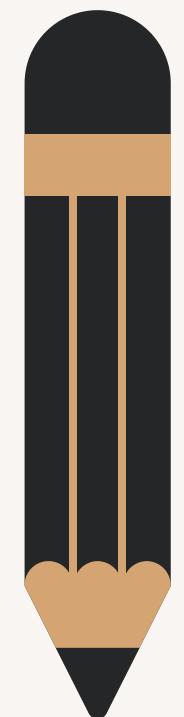


Some tasks made manually can be really tedious and time consuming to make, but with the help of the language can be made really fast and easy.



KEYWORDS

Lexem	Token	Description
START	Keyword	Defines the start of the code.
END	Keyword	Defines the end of the code.
START_OP	Keyword	Defines the start of a block of code.
END_OP	Keyword	Defines the end of a block of code.
TO_IMAGE	Keyword	Defines the location of an image.
TO_FOLDER	Keyword	Defines the location of a folder of images to be use.
sepia	Keyword	Constant filter vintage.
negative	Keyword	Constant filter, inverts colors.
black_white	Keyword	Constant filter, turns colors to black and white.
dark	Keyword	Constant filter, lowers brightness.
red	Keyword	Constant filter, turns colors into red.
green	Keyword	Constant filter, turns colors into green.

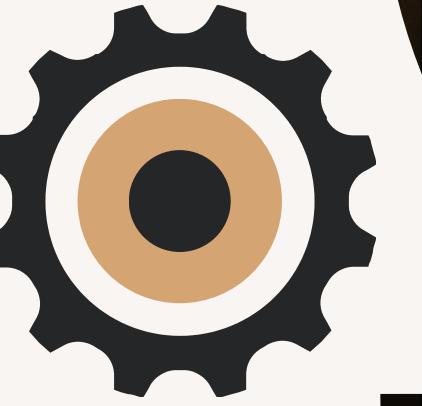


KEYWORDS

Lexem	Token	Description
blue	Keyword	Constant filter, turns colors into blue.
blur	Keyword	Constant filter, blurs an image.
contour	Keyword	Constant filter, affect the shadows and glows.
detail	Keyword	Constant filter, improves sharpness and brings out detail.
edge	Keyword	Constant filter, sharpens edges of images.
find_edges	Keyword	Constant filter, shows mostly the edges of an image.
smooth	Keyword	Constant filter, blends the pixels along the edge.
sharpen	Keyword	Constant filter, focuses soft edges to increase clarity.
grayscale	Keyword	Constant filter, turns colors into a greyscale.
emboss	Keyword	Constant filter, darkens high-contrast edges.
blur_gaussian	Keyword	Special filter, applies a blur depending on a float.
brightness	Keyword	Special enhance, rises brightness depending on a float.
contrast	Keyword	Special enhance, rises contrast depending on a float.
color增强	Keyword	Special enhance, rises color saturation depending on a float.
definition	Keyword	Special enhance, rises definition depending on a float.
flip_horizontally	Keyword	Constant transform, flips the image horizontally.
flip_vertically	Keyword	Constant transform, flips the image vertically.
rotate	Keyword	Special transform, rotates depending on a integer angle (float).



LEXEMES & TOKENS



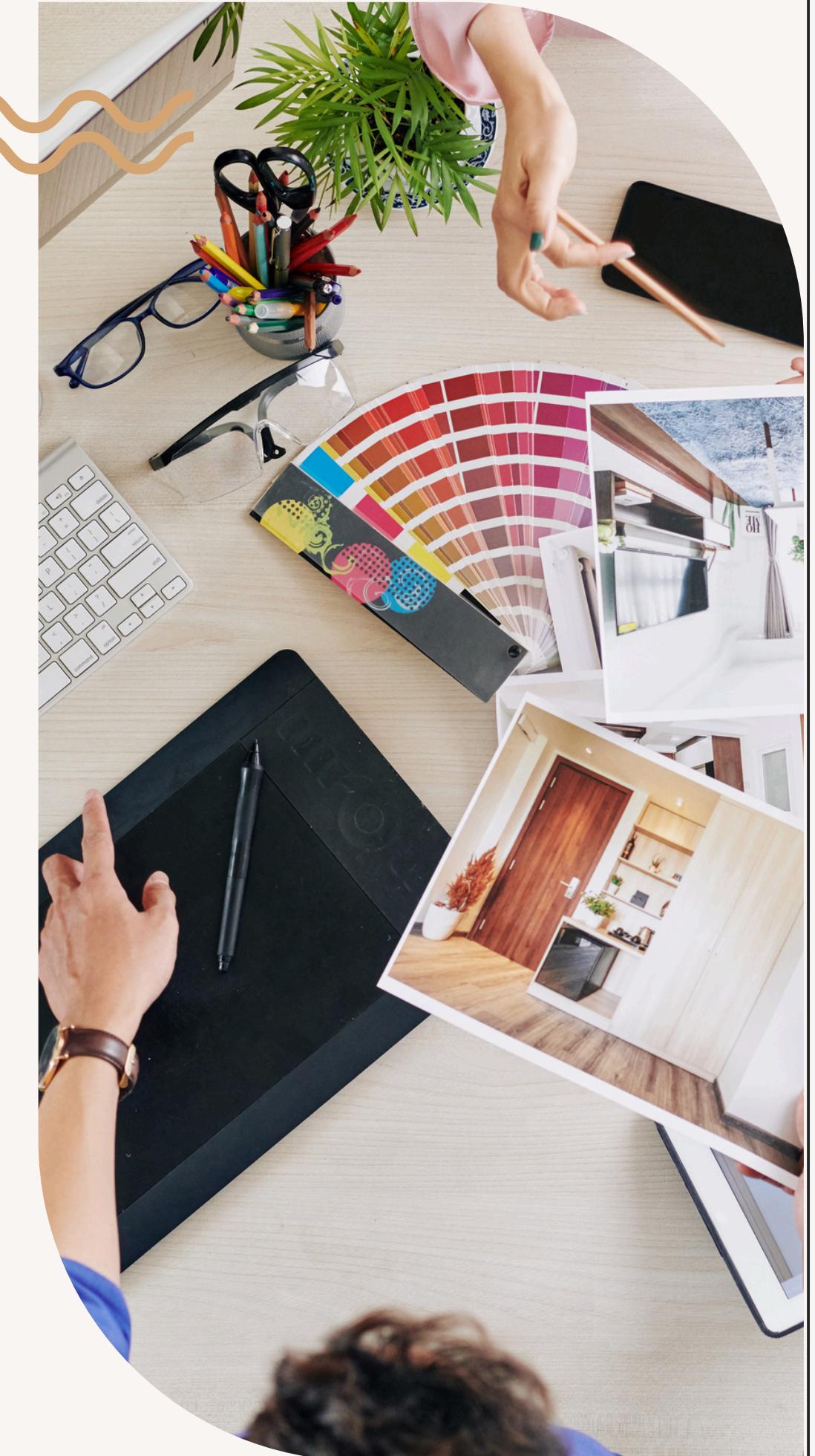
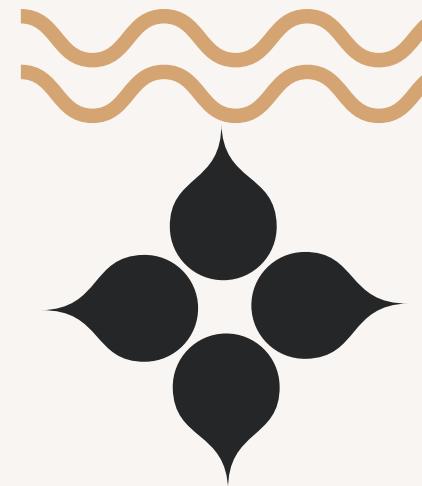
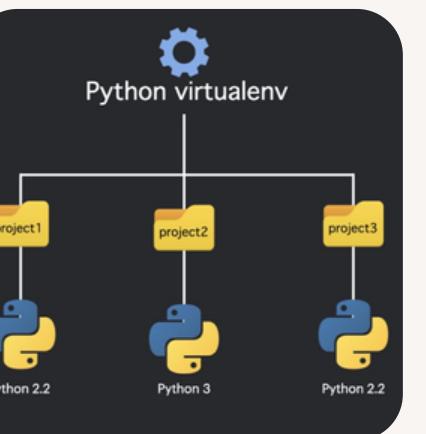
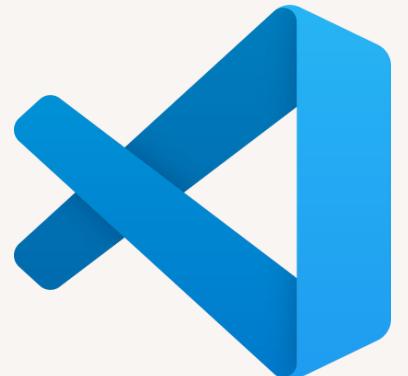
Lexem	Token	Description
APPLY_FILTER	Operator	Applies predefined filters to img/folder.
APPLY_TRANSFORM	Operator	Applies predefined transformations to img/folder.
APPLY_ENHANCE	Operator	Applies predefined enhancements to img/folder.
"(" and ")"	Special char	Defines the content of a function

GENERATIVE GRAMMAR

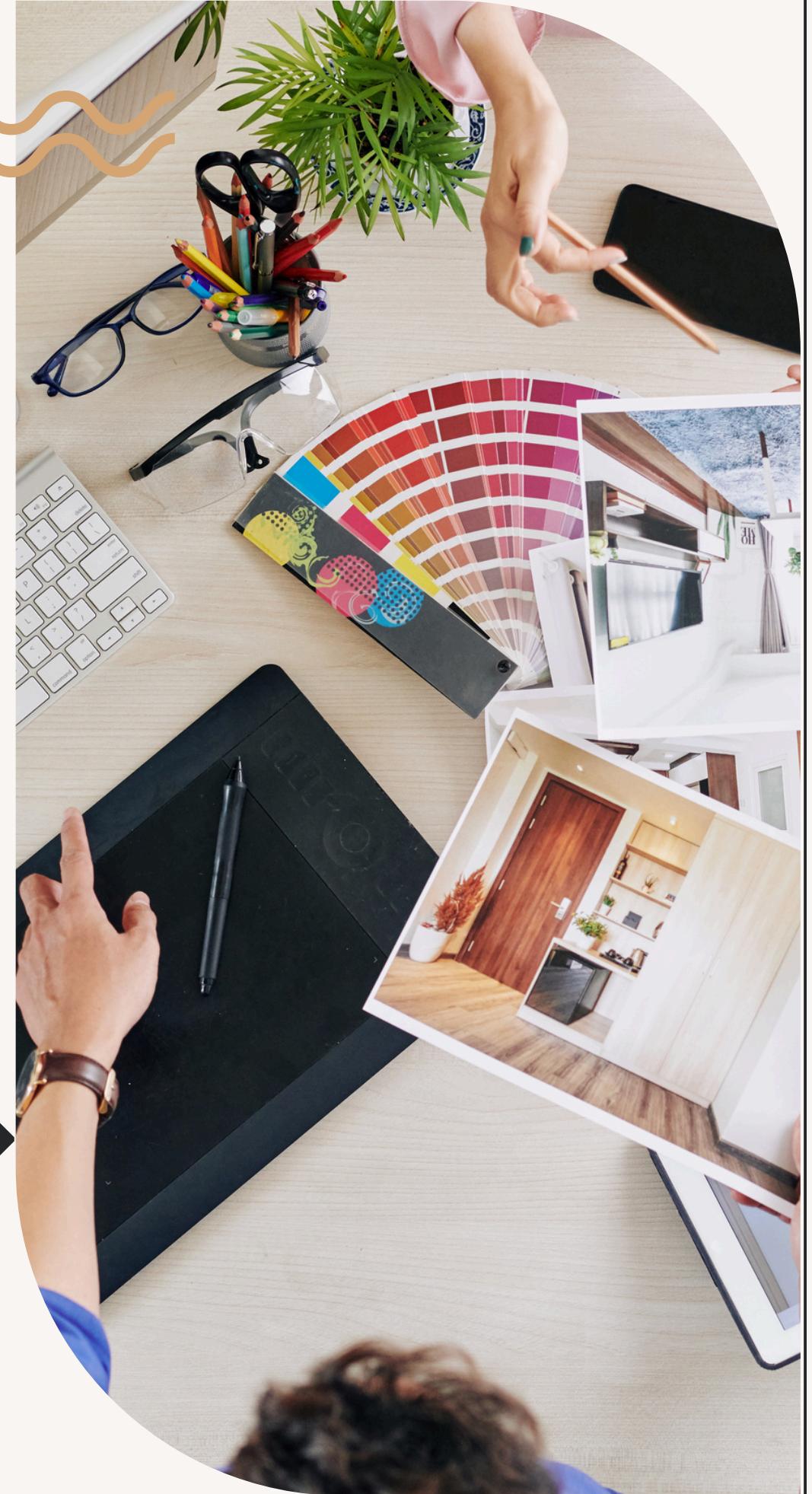
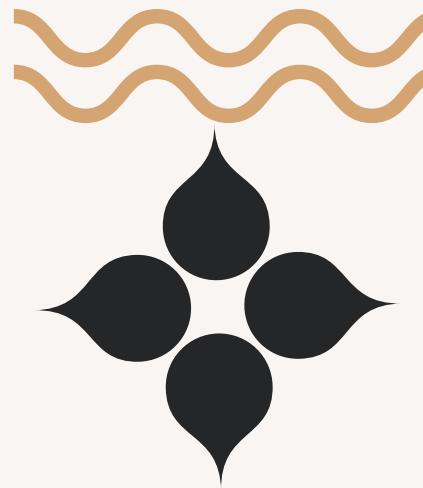
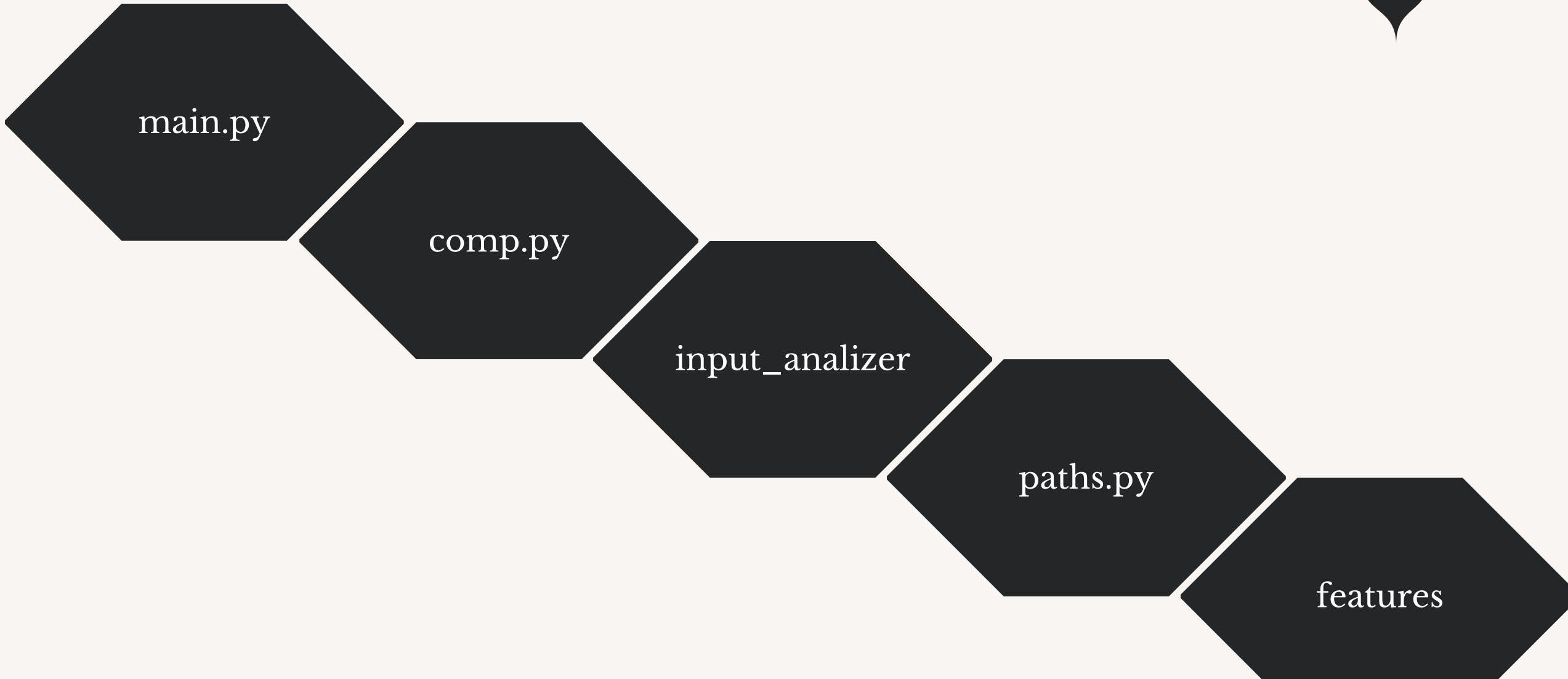
```
 $\langle S \rangle \Rightarrow \text{"START"} \langle \text{block} \rangle \text{"END"}$ 
 $\langle \text{block} \rangle \Rightarrow \text{"START\_OP"} \langle \text{statement} \rangle \text{"END\_OP"} \langle \text{block} \rangle \mid \lambda$ 
 $\langle \text{statement} \rangle \Rightarrow \langle \text{image} \rangle \langle \text{operation\_type} \rangle \langle \text{operation} \rangle$ 
 $\quad \mid \langle \text{folder} \rangle \langle \text{operation\_type} \rangle \langle \text{operation} \rangle$ 
 $\langle \text{operation\_type} \rangle \Rightarrow \text{"APPLY\_FILTER"} \mid \text{"APPLY\_TRANSFORM"}$ 
 $\quad \mid \text{"APPLY\_ENHANCE"}$ 
 $\langle \text{operation} \rangle \Rightarrow \langle \text{filter} \rangle \mid \langle \text{s\_filter} \rangle \mid \langle \text{transform} \rangle \mid \langle \text{s\_transform} \rangle$ 
 $\quad \mid \langle \text{s\_enhance} \rangle$ 
 $\langle \text{filter} \rangle \Rightarrow \text{"sepia"} \mid \text{"negative"} \mid \text{"black\_white"} \mid \text{"dark"} \mid \text{"red"} \mid \text{"green"}$ 
 $\quad \mid \text{"blue"} \mid \text{"blur"} \mid \text{"contour"} \mid \text{"detail"} \mid \text{"edge"} \mid \text{"find\_edges"}$ 
 $\quad \mid \text{"smooth"} \mid \text{"sharpen"} \mid \text{"grayscale"} \mid \text{"emboss"}$ 
 $\langle \text{s\_filter} \rangle \Rightarrow \text{"blur\_gaussian"} \langle \text{number} \rangle$ 
 $\langle \text{transform} \rangle \Rightarrow \text{"flip\_horizontally"} \mid \text{"flip\_vertically"} \mid \text{"rotate"} \mid \text{"crop"}$ 
 $\langle \text{s\_transform} \rangle \Rightarrow \text{"rotate"} \langle \text{number} \rangle \mid \text{"crop"} \langle \text{number} \rangle$ 
 $\langle \text{s\_enhance} \rangle \Rightarrow \text{"brightness"} \langle \text{number} \rangle \mid \text{"contrast"} \langle \text{number} \rangle$ 
 $\quad \mid \text{"color\_enhance"} \langle \text{number} \rangle \mid \text{"definition"} \langle \text{number} \rangle$ 
 $\langle \text{number} \rangle \Rightarrow \text{any real number including negatives}$ 
 $\langle \text{image} \rangle \Rightarrow \text{"TO\_IMAGE"}(\text{"image\_url"})$ 
 $\langle \text{image} \rangle \Rightarrow \text{"TO\_FOLDER"}(\text{"folder\_url"})$ 
```



PROGRAMMING



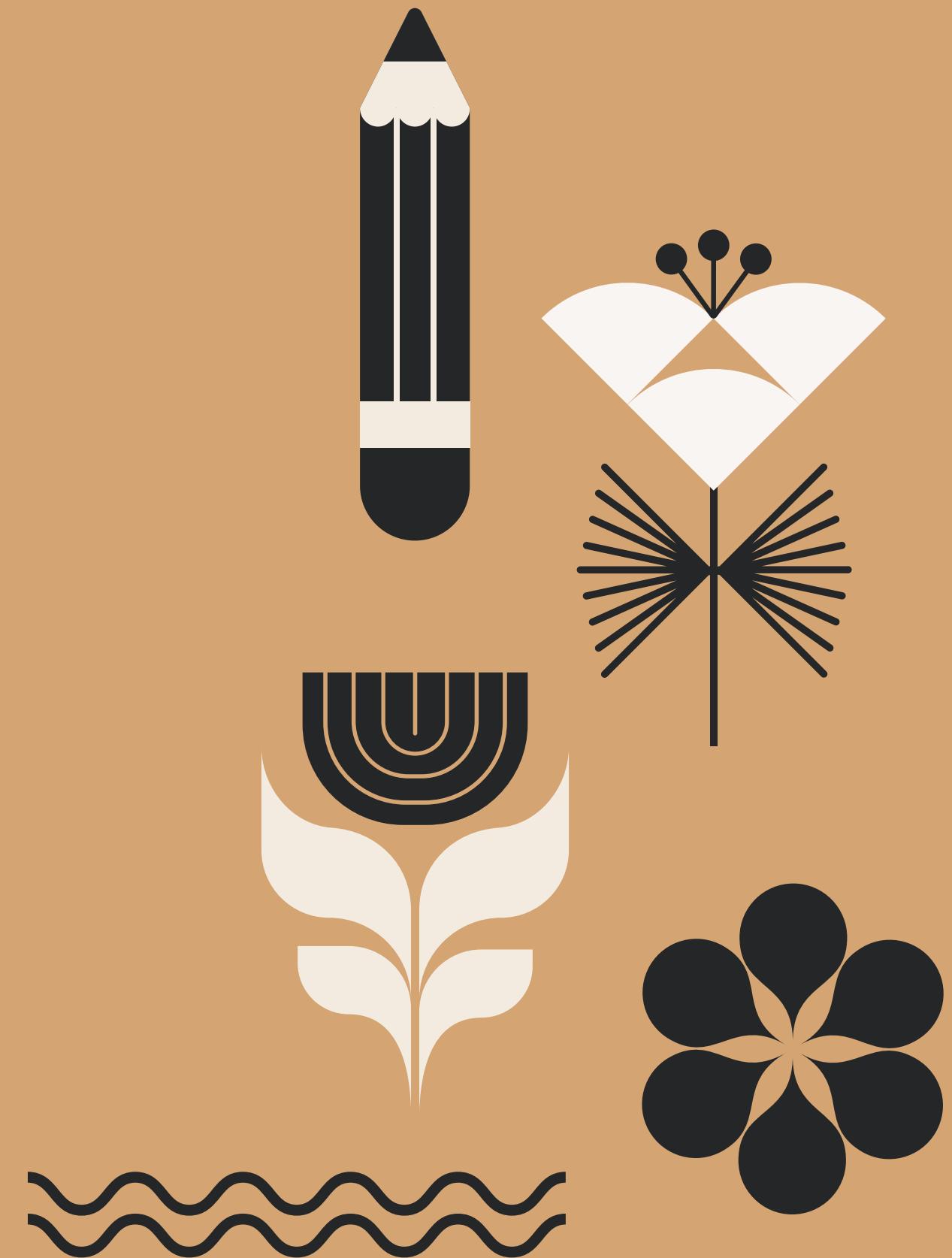
PROGRAMMING



USAGE EXAMPLE

It will automatically get
the images

From the folder “common/img_resources/”



GENERATIVE GRAMMAR

```
 $\langle S \rangle \Rightarrow "START" \langle block \rangle "END"$ 
 $\langle block \rangle \Rightarrow "START\_OP" \langle statement \rangle "END\_OP" \langle block \rangle \mid \lambda$ 
 $\langle statement \rangle \Rightarrow \langle image \rangle \langle operation\_type \rangle \langle operation \rangle$ 
 $\quad \mid \langle folder \rangle \langle operation\_type \rangle \langle operation \rangle$ 
 $\langle operation\_type \rangle \Rightarrow "APPLY\_FILTER" \mid "APPLY\_TRANSFORM"$ 
 $\quad \mid "APPLY\_ENHANCE"$ 
 $\langle operation \rangle \Rightarrow \langle filter \rangle \mid \langle s\_filter \rangle \mid \langle transform \rangle \mid \langle s\_transform \rangle$ 
 $\quad \mid \langle s\_enhance \rangle$ 
 $\langle filter \rangle \Rightarrow "sepia" \mid "negative" \mid "black\_white" \mid "dark" \mid "red" \mid "green"$ 
 $\quad \mid "blue" \mid "blur" \mid "contour" \mid "detail" \mid "edge" \mid "find\_edges"$ 
 $\quad \mid "smooth" \mid "sharpen" \mid "grayscale" \mid "emboss"$ 
 $\langle s\_filter \rangle \Rightarrow "blur\_gaussian" \langle number \rangle$ 
 $\langle transform \rangle \Rightarrow "flip\_horizontally" \mid "flip\_vertically" \mid "rotate" \mid "crop"$ 
 $\langle s\_transform \rangle \Rightarrow "rotate" \langle number \rangle \mid "crop" \langle number \rangle$ 
 $\langle s\_enhance \rangle \Rightarrow "brightness" \langle number \rangle \mid "contrast" \langle number \rangle$ 
 $\quad \mid "color\_enhance" \langle number \rangle \mid "definition" \langle number \rangle$ 
 $\langle number \rangle \Rightarrow \text{any real number including negatives}$ 
 $\langle image \rangle \Rightarrow "TO\_IMAGE ("image\_url")"$ 
 $\langle image \rangle \Rightarrow "TO\_FOLDER ("folder\_url")"$ 
```

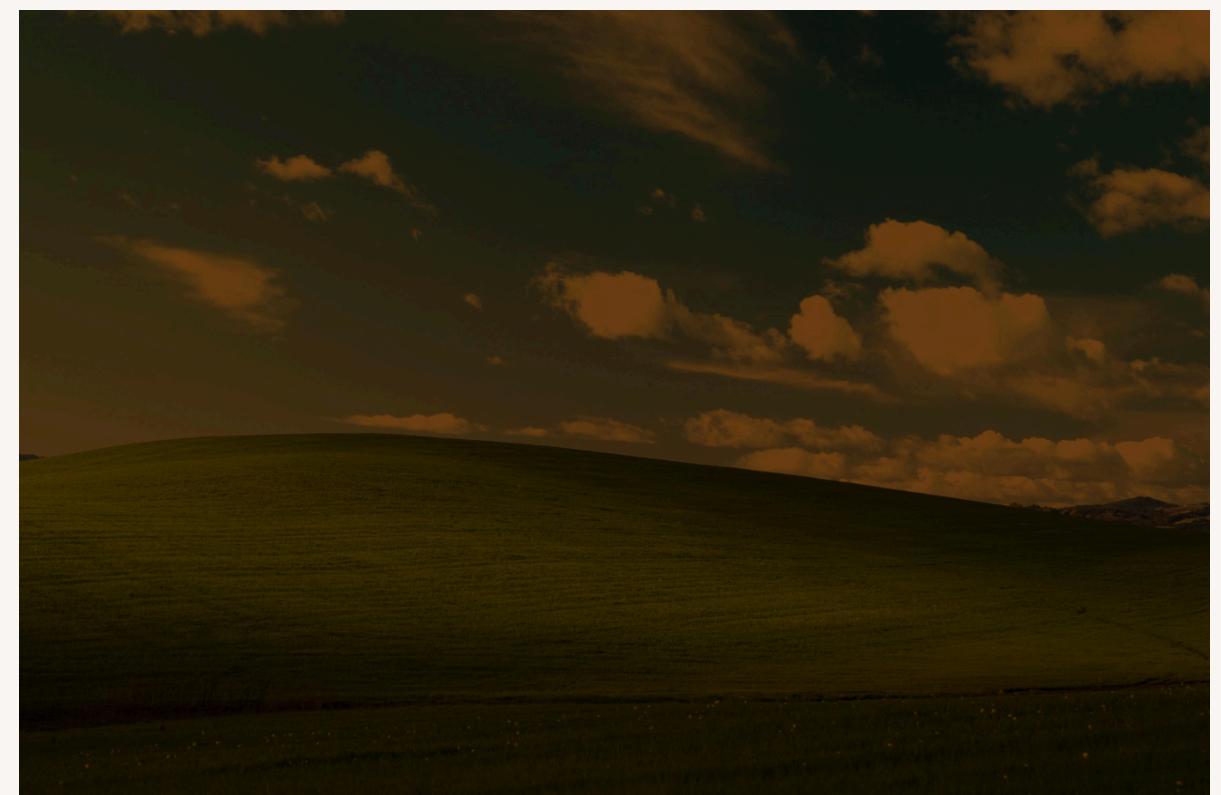


START
START_OP
TO_IMAGE (image.jpg)
APPLY_FILTER sepia
END_OP
START_OP
TO_FOLDER (example)
APPLY_ENHANCE contrast 8
END_OP
START_OP
TO_IMAGE (example/design.png)
APPLY_TRANSFORM rotate 180
END_OP
END

OUTPUT

It will automatically open
the output

In the folder common/img_export/



CONCLUSIONS

- To recognize the input was a challenge
- Design of the language first
- Thanks to pillow it was easier
- The project was successful
- Now Designer Tools is open to expand



THANK YOU

