

# Report - DesignerTools

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**Abstract.** *This is where the abstract should be written. It should be a brief summary of the work, highlighting the main points of the research. The abstract should be written in English, even if the work is in Portuguese or Spanish. The abstract should not exceed 200 words.*

## 1. Introduction

This specific purpose language is a language made for graphical designers, it is intended to make the work of the designer easier, it will be supported on python using multiple libraries so it can do multiple things, 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.

## 2. Justification

This language was made thinking on graphical designers that need to work with a lot of images, so they can simply use this language to automatize tasks; for example they need to enhance a lot of images to a specific brightness, or apply a filter on them, they only need to select all those images with the language and tell it to auto apply it for them, a thing that manually can be really tedious and time consuming to make, but with the help of the language can be made really fast and easy.

**Table 1. Table of 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.
IMAGE	Keyword	Defines the location of an image.
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.
blue	Keyword	Constant filter, turns colors into blue.
blur	Keyword	Constant filter, blurs an image.

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Lexem	Token	Description
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_enhance	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).

### 3. Lexemes and Tokens

**Table 2. Table of lexemes and tokens**

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

### 4. Generative grammar

This grammar will help to validate if the syntax is well written.

$\langle S \rangle \Rightarrow \text{"START"} \langle \text{block} \rangle \text{"END"}$

$\langle \text{block} \rangle \Rightarrow \text{"START\_OP"} \langle \text{statement} \rangle \text{"END\_OP"} \mid \langle \text{block} \rangle \mid \lambda$

$\langle \text{statement} \rangle \Rightarrow \langle \text{image} \rangle \langle \text{operation\_type} \rangle \langle \text{operation} \rangle \mid \langle \text{folder} \rangle \langle \text{operation\_type} \rangle \langle \text{operation} \rangle$

$\langle \text{operation\_type} \rangle \Rightarrow \text{"FILTER"} \mid \text{"TRANSFORM"} \mid \text{"ENHANCE"}$

$\langle \text{operation} \rangle \Rightarrow \langle \text{filter} \rangle \mid \langle \text{s\_filter} \rangle \mid \langle \text{transform} \rangle \mid \langle \text{s\_transform} \rangle \mid \langle \text{s\_enhance} \rangle$

$\langle \text{filter} \rangle \Rightarrow \text{"sepia"} \mid \text{"negative"} \mid \text{"black\_white"} \mid \text{"dark"} \mid \text{"red"} \mid \text{"green"} \mid \text{"blue"} \mid \text{"blur"} \mid \text{"contour"} \mid \text{"detail"} \mid \text{"edge"} \mid \text{"find\_edges"} \mid \text{"smooth"} \mid \text{"sharpen"} \mid \text{"grayscale"} \mid \text{"emboss"}$

$\langle \text{s\_filter} \rangle \Rightarrow \text{"blur\_gaussian"} \langle \text{number} \rangle$

$\langle \text{transform} \rangle \Rightarrow \text{"flip\_horizontally"} \mid \text{"flip\_vertically"} \mid \text{"rotate"} \mid \text{"crop"}$

$\langle \text{s\_transform} \rangle \Rightarrow \text{"rotate"} \langle \text{number} \rangle \mid \text{"crop"} \langle \text{number} \rangle$

$\langle \text{s\_enhance} \rangle \Rightarrow \text{"brightness"} \langle \text{number} \rangle \mid \text{"contrast"} \langle \text{number} \rangle \mid \text{"color\_enhance"} \langle \text{number} \rangle \mid \text{"definition"} \langle \text{number} \rangle$

<number> ⇒ any real number including negatives

<image> ⇒ IMAGE\_URL

<folder> ⇒ FOLDER\_URL

### Examples of direct short citation

Segundo Spinello (2024), aaa (Spinello, 2024).

### Examples of direct long citation

Segundo Spinello (2024) “aaa”. bbb \enquote{texto}.

Says that “ccc” (Spinello, 2024).

The study of Rabello (2010, p. 107) ...

The study of Pargaonkar (2021) ...

The studies of Badgujar, Poulouse, and Gan (2024) and Pargaonkar (2021) são aplicadas técnicas de ...

The article of Estêvão and Estêvão (2023) ...

DIRECT AND LONG CITATION MUST BE AVOIDED IN SCIENTIFIC TEXTS.

## 5. Related Work

Similar Works ... (quantity – 5 works);

- **Title of article 01 (Ogliari, 2019)**

First paragraph indicates an introduction to the subject...

In the second: what the study sought to analyze, what the objective was...

In the third: what was developed, what application/experiment was carried out...

Last: what conclusions the work reached...

- **Title of article 02 (Author, year)**

First paragraph indicates an introduction to the subject...

In the second: what the study sought to analyze, what the objective was...

In the third: what was developed, what application/experiment was carried out...

Last: what conclusions the work reached...

## 6. Materials and Methods

Technologies, instruments, and procedures that will be used in the study. Algorithm 1 refers to the Bubblesort sorting method expressed in Python language.

### Algoritmo 1. Bubblesort sorting method

```
1      def bubble_sort(alist):
2          for i in range(len(alist)-1,0,-1):
3              for j in range(i):
4                  if alist[i]>alist[i+1]:
5                      temp = alist[i]
6                      alist[i] = alist[i+1]
7                      alist[i+1] = temp
```



**Figure 1. My figure**

**Table 3. My table**

header 1	header 2
text to the left	There are many variations of Lorem Ipsum passages available, but most have undergone some form of alteration, by injecting humor, or random words that do not even seem credible enough. If you are going to use a passage of Lorem Ipsum, you must be sure that it does not contain anything embarrassing hidden in the middle of the text.

## 7. Results and Discussion

This section should be written in the second part of the work, known as TCC2.

## 8. Final Considerations

This section should be written in the second part of the work, known as TCC2.

## References

BADGUJAR, Chetan M; POULOSE, Alwin; GAN, Hao. Agricultural object detection with You Only Look Once (YOLO) Algorithm: A bibliometric and systematic literature review. **Computers and Electronics in Agriculture**, v. 223, p. 109090, 2024. DOI: 10.1016/j.compag.2024.109090. Available from: <https://www.sciencedirect.com/science/article/pii/S0168169924004812>. Visited on: 1 Aug. 2024.

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RABELLO, Lucíola Santos. **Promoção da saúde: a construção social de um conceito em perspectiva comparada**. Rio de Janeiro: Editora FIOCRUZ, 2010. 228 pp. DOI: 10.7476/9788575413524. Available from: <http://dx.doi.org/10.7476/9788575413524>.

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