**Project Color Palette Generator**

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Logo

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This is version 1.0 of this document. Watch for future revisions. All such revisions will supersede the content of this document.

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**List of Important Abbreviations Used Within**

TLA *Three Letter Acronym*

FLW *Four Letter Word*

PFO *Public Funding Option*

**Abstract**

Color Palette’s are important for branding, cohesiveness, etc. Giving them names makes them referable. Naming colors is a difficult challenge because different people interpret colors differently.

**Online Access**

Provide here a link to the online manifestation of your project, if any. This may be a URL, a Twitter handle, etc. If you have a public *Github* for your project, also provide access details here

**1. Introduction**

Introduce your vision of your project here and answer the following questions. In what creative or cultural domain does the project/system operate? Does your project aim to solve a problem, or help humans be creative in more systematic ways, or is it mainly playful and whimsical in conception? A well-written report will answer these three key questions: *What* am I doing in this project? *Why* is that worth doing? *How* do I plan to go about it? In this introductory section, offer a concise answer to the *What*, and follow-up with a compelling account of *Why*. Give only a high-level sense of the *How* in this section. In general, don’t try to do too much in any single section of the report, but provide details in a logical order.

This document/template provides a range of questions for you to consider as you develop your project. Use the questions as a guide to what constitutes a good project, as you will want to do something that is worth writing about. When you do get around to writing up your work, use these questions as a checklist for what to discuss, illustrate and explain. However, do take care that your report does not read like a FAQ or a README. Answer the questions during the report in a natural way. Do not list the questions explicitly as headings and then answer them one by one. Write a readable document that is interesting to read.

**2. The Core Idea**

This section discusses your idea as a cultural/scientific and creative endeavour, independently on how you actually implement the idea as a generative system. What is the inspiration for your project? Does it concern a typical human activity, or the kind of task that requires specialized knowledge or talent? Are you aiming to mimic a human in some way – say, on Twitter – or augment a human? Does your system aim to pass for human, or is it explicitly mechanical and artificial? Does it make a virtue of its artificiality, or does it try to cover up its mistakes? Does it aim for a human level of creativity, or is its output distinctly mechanical?

The “inspiring set” of a creative system is the set of exemplar artifacts that are representative of good human performance in the same domain. For instance, if you are generating tweets in the style of Donald Trump, then a sample of real tweets from that source will be your inspiring set, the set of artifacts that define the gold standard for what you want *your* system to produce for itself. This set may come from a different era or mode; if your system aims to recreate Aristotle or Wittgenstein on Twitter, then aphorisms and maxims from those philosophers will be your inspiring set. In this section, be sure to present (and discuss) items from your inspiring set. What is interesting about them from a creative angle? What is interesting about them from a computational generation perspective? Do you perceive an underlying pattern that you expect to leverage in your system? If so, indicate the structural and/or semantic basis of this pattern in this section.

**3. Technical Approach: Architectural Perspective**

While the English language has eleven basic words for colors (black, white, red, green, yellow, blue, pink, grey, brown, orange and purple), that is not the case for all languages. For example, both Greek and Russian have two separate words to distinguish between light blue and dark blue. In short, the language you speak affects how you view and understand color.

Even amongst English speakers, we have our own biases and cultural backgrounds that influences how we categorize a color. One of the biggest challenges of this project was compiling examples of the eleven basic shades. I used Daniel Flück’s Color Name and Hue JavaScript file as starting point for categorizing the shades. While testing it out, I quickly realized it was not categorizing shades as I would have expected. There were very few browns, as they were often noted to be reds, and there were few greys, as they were noted to be greens or blues. To improve this categorization, I would generate a palette and check to see if the shades produced matched what I would have expected. If they did not, my first step would be to check the name of the color they were most closely matched with to see what shade that color had been noted as. If that matched what I expected, then I would make a new example with the generated color. If the existing example did not match my expectation, I would change the shade that it had been assigned.

Additionally, Flück’s list did not include the shade pink, which is classified as one of the basic eleven colors that English speakers recognize and thus have associations to. I added Pink to the list of shades and then went through the existing Red samples, checking whether that Red was actually Red or if it could be classified as Pink. When generating palettes in testing, I noticed some Pinks were being classified as Violets, so I then went through and changed those Violets to Pinks.

Throughout this process, I was only thinking about how difficult this classification was. I would run into instances when I did not know whether I would personally note a color as an orange or a brown, a yellow or a white, a grey or a green. Often, the case could depend on the other colors in the palette generated and how the classification of the one off-color could lead to more cohesiveness.

In terms of naming the palette, I started by compiling a list of attributes culturally tied to each of the eleven core colors. These came from a range of websites that listed these ideas tied to the colors and was filtered through my own biases as an American living in Ireland. I also included adjectives for pastel colors to include in the case that there are multiple pastel colors in the generated palette.

Given this basic JSON of color attributes, I hesitated on how to begin implementing the naming. Since the generator I had built was in React/JavaScript, I used a Tracery npm package to flatten the colors JSON and make the values accessible from the App. I knew that I wouldn’t have a simple #origin# since I needed the palette names to be conditionally rendered based on the colors in the palette. Thus, I started out by using a simple while loop to produce a list of the most common shades in the palette and then use the first two to produce a name. At the same time, I created a conditional for monochrome palettes that I would later go on to implement.

Once I figured out I could concatenate the names of the shades with the rest of the Tracery String, and that I didn’t need to build many switch/case statements to handle the conditionals, the implementation became much easier. In place of an #origin#, I produced a list of Strings containing the Tracery requests. I then randomly selected the String to be set, in the same way that Tracery functions with its #origin#.

**4. Data, Information, Knowledge**

A creative system – especially a generative one – relies on high-quality data that captures the essence of the domain in which the work is situated. Where does your data come from? Did you craft it by hand, or harvest it from the web, or find it in an online repository? What is the scale and the format of the data? What assumptions are you making about its use and its generality? If you are reusing data that you acquired elsewhere, are you using it in the way it was intended, or are you repurposing it in some novel fashion? If you are using a mashup of data sources, describe them all here and outline the ways in which they are combined.

What is the generative reach of your system? Based on the number and the size of your data sources, and the ways in which you combine them, provide an estimate of the number of unique artifacts you expect your system to generate. In what ways are these artifacts unique, or merely different in composition? This is largely a matter of user perception, so consider that here too. For instance, a trivial system that generates 9-digit telephone numbers has a generative reach of one billion numbers, but they all look much the same to a human audience. Can you distinguish between raw generative power and how it seen by the audience? Your answer to this question will lead us nicely onto the topic of divergence.

**5. Diversity and Divergence**

The sheer number of possible outputs from your system is not very informative in most cases, especially if it fails to capture our human perceptions of sameness. A more revealing analysis can be conducted using J.P. Guilford’s framework for divergence, which offers four complementary dimensions along which a system can be situated. In this section, consider the outputs of your system on these four dimensions, giving illustrative examples in each case. Do not be afraid to be self-critical here; an honest accounting of your system’s generative capabilities is far more creditworthy than hand-waving or self-promotion. Be sure to explain how your system strives for originality/novelty and meaningfulness/usefulness.

**6. “Mere” Generation and “True” Creativity**

*Mere* generation – the production of outputs just because they meet certain pre-specified rules or fill certain pre-specified templates or obey hard scripts – is less than creative in almost every case, yet very few systems can be said to be free of this aspect of generation. Does your system ever surprise you? Does it ever seem to transcend its own built-in rules or templates? Does it generate everything that meets its rules, or do the rules just propose structurally-valid candidates that are subsequently evaluated, critiqued and potentially filtered in a later stage? In this section you should explore the extent to which your system is merely generative, and to the extent it is not (or strives to be otherwise). Allude to how we humans undertake the same task, or to philosophical considerations if they are relevant.

**7. Evaluation, Self-Critique and Filtering**

A creative system is more than a generator of outputs. Creativity also requires a degree of appreciation, of what is being produced and of how it will be viewed by an audience. A system without an evaluation stage cannot claim to be creative in any sense. Nonetheless, this stage need not be a distinct phase or module in the production pipeline, but might be incorporated directly into the generator itself. Naturally, this possibility only serves to complicate the already nuanced debate about mere generation. In this section you will describe the mechanisms that you have built into your system to evaluate its candidates, as well as any filtering or threshold criteria that are employed to limit what is actually shown to the user. What proportion of candidates are filtered in this way, on average, and just how effective (in your opinion) is this mechanism at raising the standard of output?

Is your evaluation metric based on established criteria for human creativity, such as novelty, originality, surprise, usefulness, and so on? If so, define what you mean by those terms, and justify your formalization of them in your system. To what extent is your system P-Creative and H-Creative (to use Boden’s terms)? At this point, you should also be explicit about what you mean by “creativity” in the context of your system and its outputs.

**8. Hits and Misses**

In this section you should present some example outputs of your system and discuss their merits and shortcomings. Do not cherry pick your outputs, but be willing to discuss successes and occasional failures (especially epic fails) as well. Argue for why you think the examples show evidence of creativity (or not), or of how your system might build on its current capabilities to show this evidence in the future. In any case, be prepared to cite relevant works from the creativity literature here (as elsewhere in your report) in support of your arguments.

**9. Conclusions**

In this section you will sum up your report and draw some conclusions about your work. Was your project a success as a creative system? Did the system ever misbehave in interesting or revealing ways? Have you had any feedback from its users or online audiences? You may use this opportunity to express points of view, or make factual claims, that are more pertinent here than in other sections of the report. If your project raises some ethical concerns, for example about how data or users are treated, then address them here in a thoughtful manner.

Here are some points to bear in mind when writing your own document. You may use screenshots, but do not overfill your report with them, or with figures of any kind. Make sure that all figures earn their keep, and are not just present as space fillers or as eye candy. If you use diagrams or figures from other people’s work, including the web, be sure to cite the creator in the corresponding caption. All things being equal, it is better to construct your own figures than to copy and paste those of others. In any case, always make sure your images are readable, do not suffer from pixilation or aliasing effects, and that each one is clearly numbered, captioned and meaningfully referenced in the main body of the text.

Ensure that there is a cohesive argument expressed in the text of the report and that it is not simply a bag of diagrams, screenshots and wishful thinking. Every report should tell a story, so know what story you want to tell. When you include images, make sure they are readable and truly add to the discussion. Make sure your language is professional throughout, and steer a course between pompous and colloquial. Maintain authorial distance and do not overuse “me,” “I” and “our.” Your are writing for a professional audience who will judge you on the quality of your prose, so be sure to use a grammar and a spelling checker.

Use *LaTeX* if you wish – this is recommended if you plan to use mathematical formulae in your report, but in any case, keep the general spacing and font/style you find here (Single or 1.5 spacing, 12 pt. font for text, etc.). Be sure to submit a PDF (never a .DOC or .DOCX file) as your report. If you prepare your report in MS Word, as this document has been, save it as a PDF before you submit it. Overall it should be about **14 – 20 pages**, including figures, front matter and references, A significant portion of the report will be textual, with approx.. four to six thousand words. Do not rely on images or other filler to write your report for you.

**Acknowledgements**

Name check any person who helped you with this work. Acknowledge that the work is entirely your own, and that every sentence in this report was written by you and you alone. Plagiarism is a very serious infraction that must be dealt with severely. Please avoid any ambiguity on this point by citing things carefully!

**References**

List any bibliographical citations here for people and work that you quote/cite in the main body of your report. Use the general format below for all bibliographic entries. Ensure each entry is complete (including author, year, title, publication). Be sparing in your citation of URLs and Wikipedia pages. Do not cite bare URLs unless absolutely necessary – cite instead the print publication if possible.

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