

Lexical Creativity: Fun With Words



Where did
you guys
learn to
paint?

Inventing New Color Names

@everycolorbot is a minimalist and very popular exponent of the *Mere Generation* approach. Simply, the bot generates a random color hex-code (six hex digits denoting an R-G-B color code) and a picture of the corresponding color.



0x04afd4

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RETWEETS
24

FAVORITES
44



Just as Borges' library of Babel provided *every* possible book, this bot will eventually tweet *every* RGB color.

To go beyond mere generation, we need to attach semantics to our data, to guide a bot's decisions. Consider @everycolorbot – Mike Cook suggests a CC bot that would creatively name its own colors, in a witty parody of Dulux paint names.



This twitterbot could respond to @everycolorbot with novel names, in a game of dueling bots.

Dulux uses pretentious names with positive effect, but a bot might call this one “*mushrooms on toast*” or “*rusty battleship*”. Such a bot would exhibit humor *and* visual appreciation.



Every Color @everycolorbot · May 22
0xbbc6a1 pic.twitter.com/mGcuXvPaFS

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RETWEETS
7

FAVORITES
17



12:32 PM - 22 May 2014 · Details

We can blend new colors from old, by mathematically mixing the RGB codes of each ingredient. So two questions then:

1. What mixing ratio should be use when blending RGB codes?

Chocolate



Sky



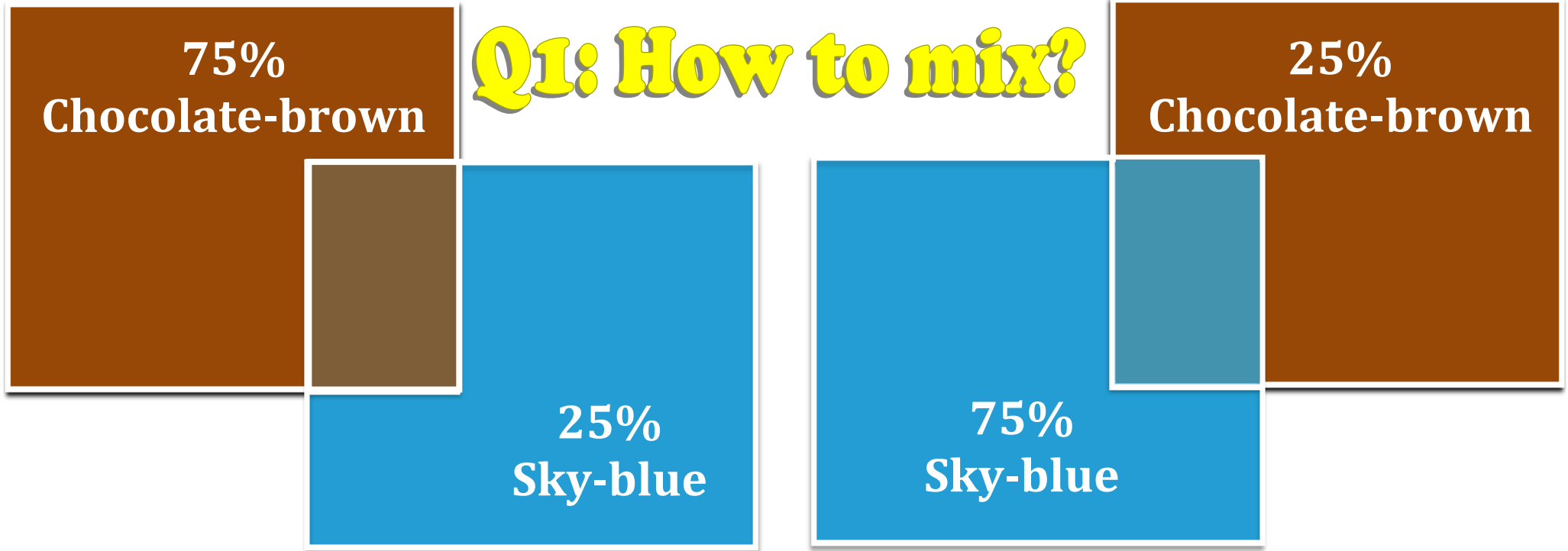
Chocolate Sky

2: How do we choose the colors to blend in the first place?

This is actually the key question in any combinatorial view of creativity: how do we choose the elements to combine?



Q1: How to mix?

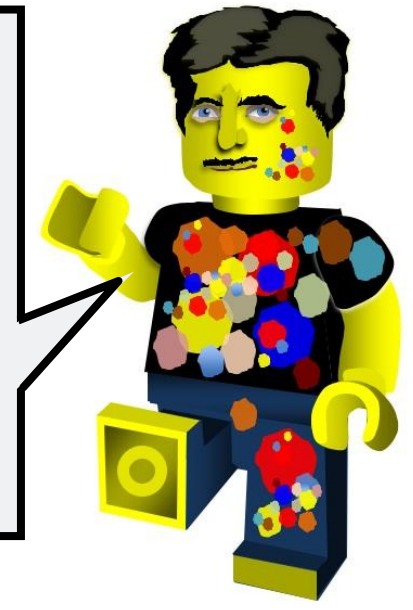


Chocolate Sky



Here “chocolate” is the *modifier* and “sky” is the *head*. So the base color is sky-blue (75%), with an added hint of brown (25%).

Sky Chocolate



Here “sky” is the *modifier* and “chocolate” is the *head*. The base is chocolate brown (75%) with a hint (25%) of blue.

Q2(a): What to mix?

We use a large mapping of color *stereotypes* to specific RGB color codes.



DEEP PINK 40	FUCHSIA 48	MAGENTA 85									
MEDIUM PURPLE 90	MEDIUM ORCHID 89	ORCHID 107	VIOLET 141	PLUM 116	THISTLE 138	PINK 115	LIGHT PINK 74	ROSY BROWN 120	PALE VIOLET RED 111	MEDIUM VIOLET RED 95	HOT PINK 58
DARK BLUE 21	NAVY 101	MIDNIGHT BLUE 96	INDIGO 60	DARK SLATE BLUE 35	MEDIUM SLATE BLUE 92	SLATE BLUE 130	PURPLE 118	DARK MAGENTA 28	BLUE VIOLET 10	DARK VIOLET 39	DARK ORCHID 31
POWDER BLUE 117	LIGHT BLUE 67	LIGHT STEEL BLUE 80	LIGHT SKY BLUE 77	SKY BLUE 129	DEEP SKY BLUE 41	DODGER BLUE 44	CORNFLOWER 17	STEEL BLUE 135	ROYAL BLUE 121	SLATE BLUE 9	SLATE BLUE 106
LIGHT SEA GREEN 76	TEAL 137	DARK CYAN 22	CADET BLUE 13	MEDIUM AQUAMARINE 87	AQUAMARINE 3	DARK TURQUOISE 38	MEDIUM TURQUOISE 94	TURQUOISE 140	AQUA 2	PALE GREEN 9	PALE GREEN 155
FOREST GREEN 47	DARK GREEN 25	OLIVE 103	OLIVE DRAB 104	DARK OLIVE GREEN 29	SEA GREEN 125	DARK SEA GREEN 34	PALE GREEN 109	LIGHT GREEN 71	SPRING GREEN 134	SEAGREEN 8	SEAGREEN 154
ORANGE 105	DARK GOLDENROD 23	GOLDENROD 52	GOLD 51	YELLOW 145	GREEN YELLOW 55	CHARTREUSE 14	LAWN GREEN 65	LIME 82	LIME GREEN 83	YELLOW GREEN 146	YELLOW GREEN 156
FIREBRICK 45	INDIAN RED 59	LIGHT CORAL 68	SALMON 123	DARK SALMON 33	LIGHT SALMON 75	CORAL 16	TOMATO 139	CRIMSON 19	RED 119	ORANGE RED 106	DARK ORANGE 30
KHAKI 62	DARK KHAKI 27	BURLYWOOD 12	TAN 136	SANDY BROWN 124	PERU 114	CHOCOLATE 15	SIENNA 127	SADDLE BROWN 122	BROWN 11	MAROON 86	
PAPAYA WHIP 112	LIGHT YELLOW 81	BEIGE 5	BLANCHED ALMOND 8	BISQUE 6	PEACH PUFF 113	LEMON CHIFFON 66	LIGHT GOLDENROD 70	WHEAT 142	MOCCASIN 99	NAVAJO WHITE 100	
SNOW 133	SEASHELL 126	LINEN 84	MISTY ROSE 98	LAVENDER BLUSH 64	LAVENDER 63	FLORAL WHITE 46	IVORY 61	GHOST WHITE 50	OLD LACE 102	ANTIQUE WHITE 1	
DARK GRAY 24	SILVER 128	LIGHT GRAY 72	LIGHT GREY 73	GAINSBORO 49	LIGHT CYAN 69	ALICE BLUE 0	AZURE 4	MINT CREAM 97	HONEYDEW 57	WHITE SMOKE 144	
BLACK 7	DARK SLATE GRAY 36	DARK SLATE GREY 37	SLATE GRAY 131	SLATE GREY 132	LIGHT SLATE GRAY 78	LIGHT SLATE GREY 79	DIM GRAY 42	DIM GREY 43	GREY 56	GRAY 53	

What to mix?

We can use Web n-grams to suggest attested shades and tints of our color stereotypes, such as “Winter green” and “silver red”.

Attested combinations make more sense than random combinations.



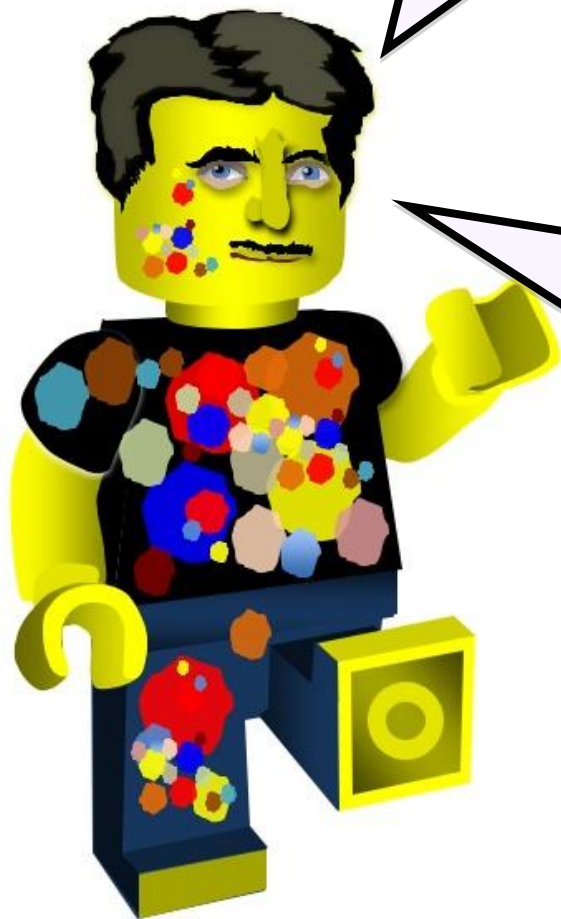
violet	-	gray	654
apricot	-	yellow	654
copper	-	green	651
mahogany	-	brown	650
hazel	-	brown	644
navy	-	red	642
rust	-	orange	641
velvet	-	black	638
gunmetal	-	gray	634
winter	-	green	627
magenta	-	red	614
tan	-	gray	603
canopy	-	green	600
shit	-	brown	595
amber	-	green	595
foam	-	white	591
wood	-	black	580
tangerine	-	orange	576
honey	-	orange	565
silver	-	red	563
apple	-	orange	561
star	-	white	559
plum	-	red	559
yolk	-	yellow	554

Gram 2	Gram 3	Freq
microwave	oven	13775
pear	tree	11579
mushroom	cloud	9092
forest	fire	8190
snow	storm	6511
pine	tree	5191
gold	star	4669
paper	tiger	4567
rose	garden	4066
winter	storm	3943
grizzly	bear	3562
wood	fire	3299
pine	forest	3241
summer	night	3172
charcoal	grill	2328
chocolate	milkshake	2175
cherry	tree	1998
willow	tree	1973
chimney	fire	1878
champagne	toast	1875
dust	storm	1847
winter	night	1793
night	sky	1456

*Q: Does
Web Frequency
serve as a measure
of conventionality?*

We can also use
Web bi-grams to
suggest attested
combinations of our
stereotypes.





The lower the Web frequency, then the *less conventional* the combination ...

... so the more striking and unusual the resulting *color name*.

beef	bone	43
baby	frog	43
velvet	night	42
salt	desert	42
putty	cat	42
midnight	sunset	42
jungle	sunset	42
jungle	garden	42
jet	fire	42
concrete	park	42
baby	shoe	42
baby	ghost	42
baby	fawn	42
amber	amber	42
wintery	storm	41
star	tree	41
sheet	paper	41
sand	desert	41
russet	potato	41
porcelain	toilet	41
peppermint	tea	41
myrtle	tree	41
lavender	sky	41
gold	toilet	41
desert	summer	41

Check out
color map.xlsx
 for the RGB codes
 of our color
 stereotypes.



	A	B	C
1	Stereotype	Colour	RGB
2	acid	green	#80BF1A
3	absinthe	green	#7FDD4C
4	acorn	brown	#7F6241
5	adobe	brown	#F8B989
6	agate	blue	#333A4A
7	alabaster	white	#F2E7CD
8	albino	white	#F1EEE2
9	albumen	white	#F1EDE1
10	ale	brown	#CC8E69
11	algae	green	#458B00
12	alien	green	#C3C728
13	almond	brown	#EFDECD
14	almond	orange	#FFEBCD
15	aloe	green	#64AC58
16	aluminium	grey	#8F8F8F
17	aluminum	gray	#8F8F8F
18	aluminum	white	#CECECE
19	amber	brown	#E99D56
20	amber	orange	#FF7E00
21	amber	yellow	#FFBF00
22	amethyst	blue	#A096CF
23	amethyst	purple	#9966CC
24	anchovy	brown	#E9967A
25	anthracite	grey	#3A3C3B
26	antique	brown	#CD9575
27	apple	green	#8DB600
28	apple	red	#9F021E
29	apricot	orange	#FBCB1
30	apricot	yellow	#FBCB1
31	aqua	blue	#00FFFF
32	aquamarine	blue	#7FFFD4

1	Bracket	Word-1	Word-2	Bracket	Frequency
2	the	night	sky	.	86005
3	the	night	sky	,	47438
4	with	olive	oil	and	36436
5	and	ice	cream	.	36153
6	and	olive	oil	.	32762
7	with	olive	oil	,	28481
8	with	olive	oil	.	23595
9	a	rose	garden	,	20727
10	the	olive	oil	,	15666
11	the	olive	oil	.	15315
12	and	ice	cream	,	14838
13	the	ice	cream	.	14124
14	a	microwave	oven	.	13775
15	and	olive	oil	,	
16	a	microwave	oven	,	
17	a	pear	tree	.	
18	with	parchment	paper	.	
19	with	ice	cream	.	
20	the	ice	cream	,	
21	the	summer	sun	.	
22	the	sun	rose	,	
23	with	cream	cheese	and	
24	with	cream	cheese	,	918
25	a	mushroom	cloud	.	9092
26	and	cream	cheese	.	8642
27	a	forest	fire	.	8190
28	with	ice	cream	and	7940
29	some	ice	cream	.	7729
30	the	cream	cheese	,	7244
31	with	ice	cream	,	7206
32	the	forest	canopy	.	7031

**bracketed color
bigrams.xlsx**

contains *Web-
attested* stereotype
pairings.

To minimize
noise, these are
bracketed with syntax
elements to ensure
well-formedness.



	A	B	C
1	Word-1	Word-2	Frequency
2	lemon	tree	3236
3	Holly	Hunter	3234
4	demon	hunter	3209
5	candy	corn	3181
6	Gold	Port	3142
7	honey	mustard	3120
8	potato	starch	3118
9	blood	lust	3109
10	tree	sap	3015
11	rice	bran	2986
12	peppermint	oil	2943
13	Cedar	Park	2933
14	banana	leaf	
15	smoke	tobacco	
16	Sunset	Park	
17	leaf	rust	
18	maple	sugar	
19	ass	piss	
20	autumn	sun	
21	lettuce	leaf	
22	wood	dust	
23	rocket	fire	
24	Glacier	Park	2736
25	spruce	forest	2732
26	maple	wood	2715
27	summer	sunshine	2689
28	chestnut	tree	2689
29	garlic	clove	2685
30	salad	oil	2662
31	chocolate	candy	2659

**unbracketed color
bigrams.xlsx**

contains more *Web-
attested* stereotype
pairings.

Not every bigram
of color stereotypes
is intended as a
modifier-head phrase,
so beware noise.



Check out
color unigrams.xlsx

for *solid compounds*
of color stereotypes.

These attested
unigrams can be split
into *two parts*, each a
different color
stereotype!



	A	B
1	Solid Word-1-2	Frequency
2	acidbaby	890
3	alewine	1059
4	alewood	213
5	alienbrain	2965
6	amberstone	210
7	amberwood	3803
8	antiquewhite	267
9	appleberry	771
10	applebutter	268
11	applemint	200
12	appletree	8338
13	applewhite	5238
14	applewood	8673
15	aquablue	335
16	aquafire	358
17	aquamelon	458
18	aquamist	240
19	aquapark	965
20	aquastar	3000
21	arborwood	375
22	ashberry	1664
23	ashcorn	224
24	ashlawn	569
25	ashport	208
26	ashtree	572
27	ashwood	15036
28	assport	1754
29	autumnblaze	1348
30	autumnwood	5377

	A	B	C	D
1	Word-1	Word-2	Frequency	Singular
2	forest	fires	252281	fire
3	coffee	beans	233148	bean
4	pine	trees	221076	tree
5	chili	peppers	220438	pepper
6	microwave	ovens	183734	oven
7	olive	trees	167810	tree
8	garlic	cloves	145478	clove
9	leather	shoes	144377	shoe
10	hazel	eyes	134110	eye
11	tea	leaves	126930	leaf
12	pine	nuts	113294	nut
13	pine	forests	106412	forest
14	leather	boots	100133	boot
15	grizzly	bears	98977	bear
16	oil	sands	94279	sand
17	baby	shoes	93444	shoe
18	tiger	woods	93240	wood
19	ice	sheets	89007	sheet
20	ice	crystals	85160	crystal
21	winter	nights	84268	night
22	sandy	soils	81112	soil
23	coffee	houses	80257	house
24	ice	creams	79167	cream
25	apple	trees	78118	tree
26	honey	bees	73934	bee
27	cherry	tomatoes	73294	tomato
28	ass	nipples	71278	nipple
29	autumn	leaves	69002	leaf
30	bile	acids	68784	acid

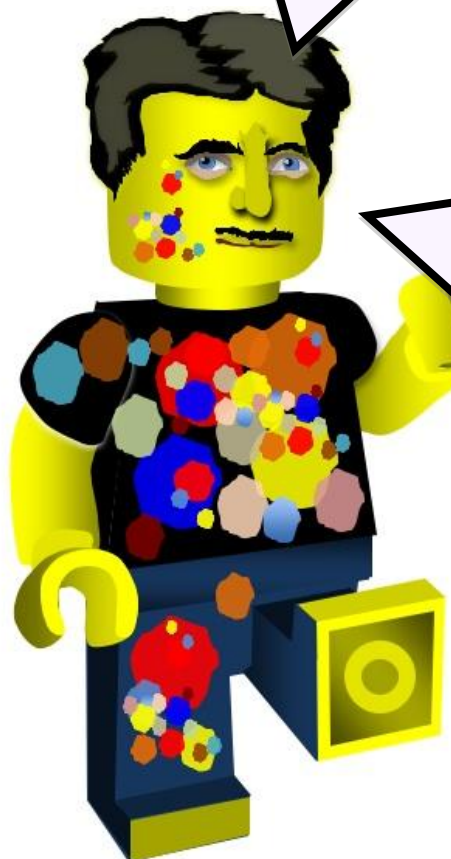
**plural color
bigrams.xlsx**

contains *mod-head*
stereotype pairings
with a *plural*
head word.

The
singular
form of the head
stereotype is given
in this column
here.



Finally, check out
everycolorbot
tweets.xlsx
 for a corpus of this
 bot's tweets.



You can use the
 map of RGB codes to
 URLs to reuse the
 bot's color swatches,
 so no need to create
 your own!

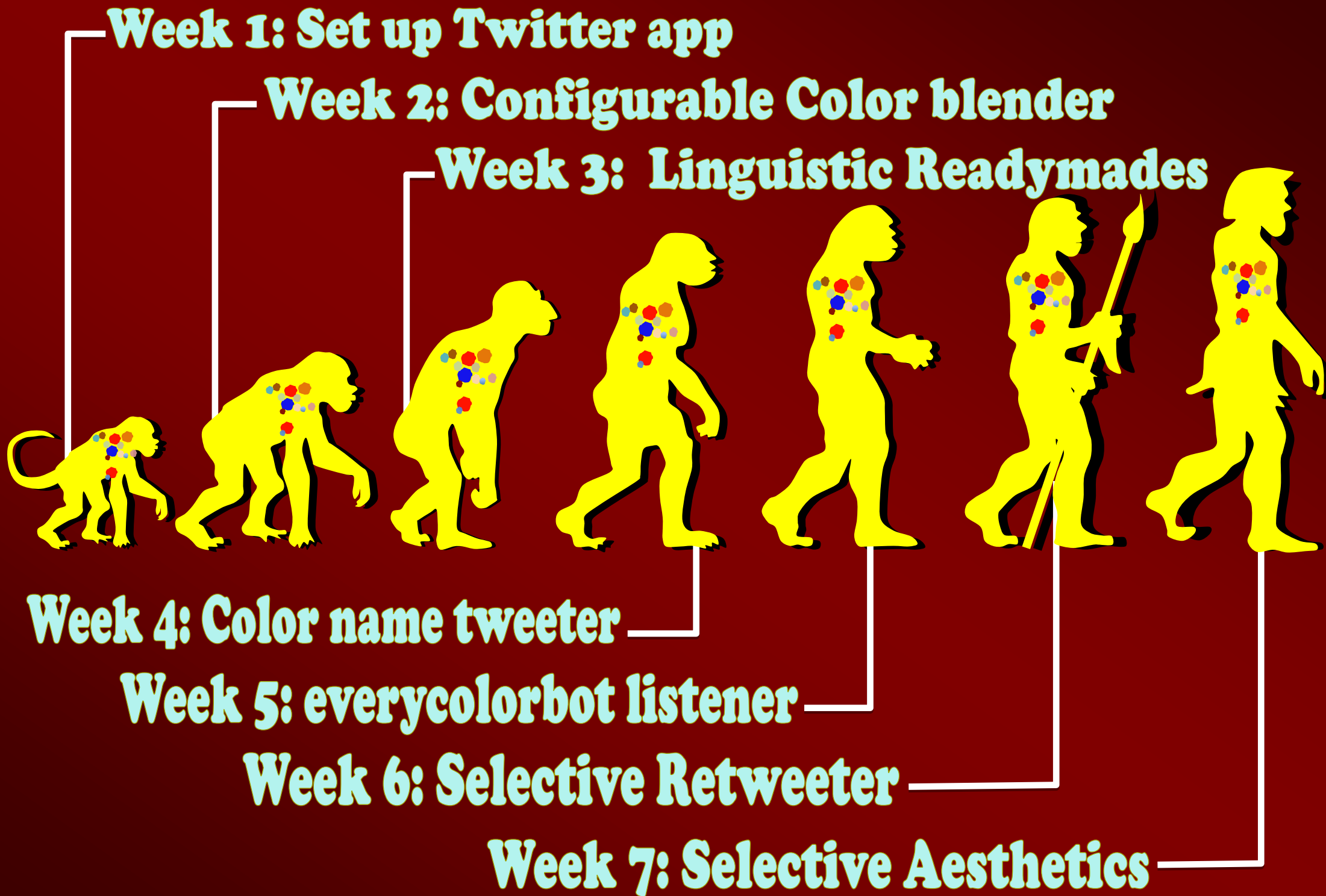
	A	B
1	RGB Code	Twitter URL
2	0xcb835d	http://t.co/Wd5bWgVaEh
3	0xe5c1ae	http://t.co/9MW3wfeeJZ
4	0xf2e0d7	http://t.co/Zm7TENlefK
5	0xf9706b	http://t.co/pD8sPIQu2H
6	0x7cb835	http://t.co/fMqyokLZ9c
7	0xbe5c1a	http://t.co/Lq5CJxUmB6
8	0xdf2e0d	http://t.co/51z4rV94IW
9	0xef9706	http://t.co/eR9B8Jrjzs
10	0x77cb83	http://t.co/90rvge8Nqu
11	0x3be5c1	http://t.co/l64Kxo1svv
12	0x9df2e0	http://t.co/2hQIP6KRjk
13	0x4ef970	http://t.co/GDXdm7Vvjt
	0xa77cb8	http://t.co/MBqxDe6oa7
	0xd3be5c	http://t.co/gADlQxAha3
	0x69df2e	http://t.co/Tjy0YEV7M6
	0x34ef97	http://t.co/lhM0E1HFGd
	0x1a77cb	http://t.co/vXhLur55GJ
	0x8d3be5	http://t.co/kB1EPvAEJj
	0xc69df2	http://t.co/NmYOQd4u9D
	0x634ef9	http://t.co/9OXdTPFOXK
	0x31a77c	http://t.co/99kdUpov9E
	0x98d3be	http://t.co/Os53Hh3qs7
	0x4c69df	http://t.co/VKULW7wQMW
25	0xa634ef	http://t.co/dkGUAXjV7n
26	0x531a77	http://t.co/XDcgi2vXU3
27	0x298d3b	http://t.co/ssJ9nBspYI
28	0x14c69d	http://t.co/H748ZqlP6c
29	0x0a634e	http://t.co/BZbDbjlssO
30	0x0531a7	http://t.co/hCSJDJueHD

Capture the tweets of other Bots



... and respond in kind

respond to raw RGB codes with apt color names



You have enough knowledge and data for the task

Now, put your own creative stamp on it



Ingenuity



Style



Aesthetic sensibility



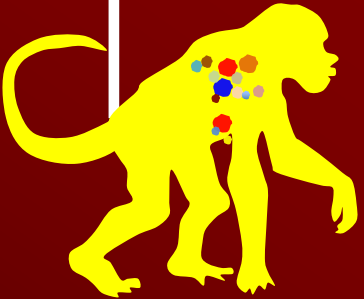
Sweat Equity

Add your own knowledge



Go beyond the spec: do something personal!

Week 1: Set up your Twitter App



Register your app on Twitter



Obtain your API and Access tokens

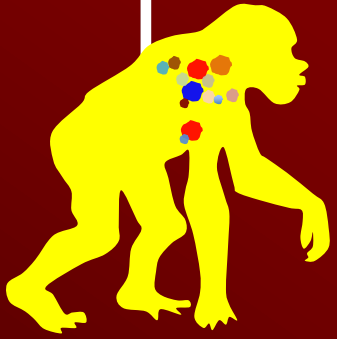


Set your privileges (R/W)



Send your first status update

Week 2: Configurable Color Blender



Load color map into custom ADT



Functions to blend RGB codes

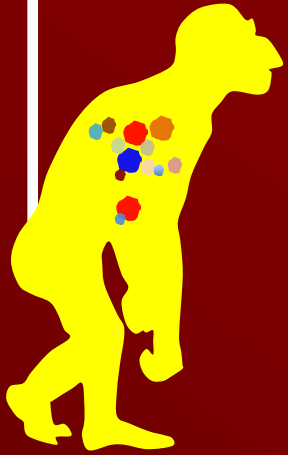


Configurable: what mix of each?



Distance function for RGB codes

Week 3: Linguistic Readymades for Colors



Load readymades into custom ADT



Assign RGB code to each readymade



Define basic linguistic rules



Experiment with different mix ratios

Week 4: Color readymade tweeter



Build everycolorbot RGB:URL map



Find best readymade for any RGB code



Generate Readymade:URL pairings



Generate tweets from these pairs

Week 5: An everycolorbot Listener



Use Twitter4j to build a generic bot listener



Create an API with callbacks to respond to events



Instantiate listener for everycolorbot



**Extract fresh RGB:URL pairs
as they arrive from everycolorbot**

Week 6: Selective Re-tweeter



Define criteria for retweeting



Define quality metric for retweeting



Define schedule for retweeting



Generate everycolorbot responses

Week 7: Twitterbot Aesthetics



Define your own Twitter aesthetic
Try different text framings



Define quality metric for retweeting



Use Twitter4j to maintain statistics
on favorites and retweets