

User Survey Results of “Winding Number Features for Vector Sketch Colorization”

SUBMISSION ID: 1013

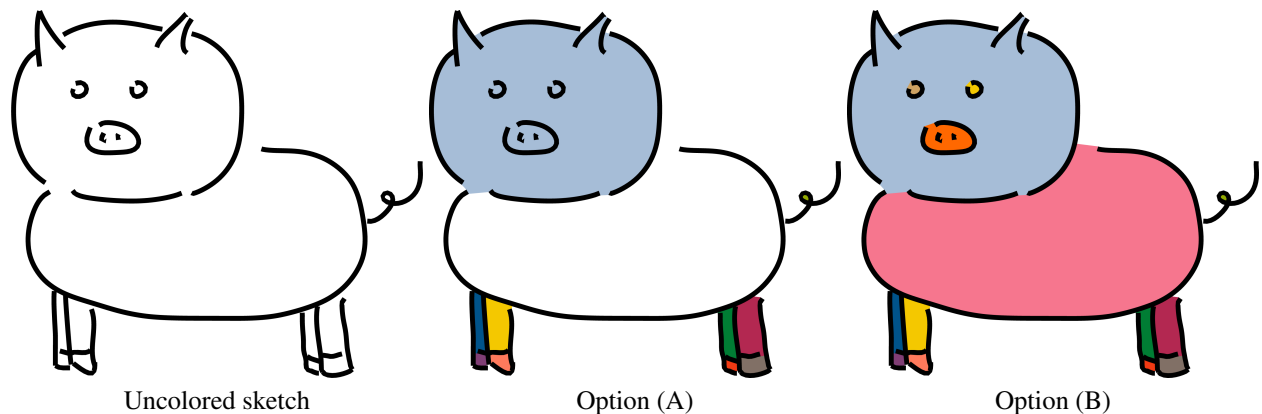
In order to assess the quality of our method’s output, we conducted an informal user survey of preferences in the style of [YLL*22]. 20 participants were asked to evaluate the output of our automatic method on 15 sketches in direct comparison to that of [YLL*22] and [PMC22]. To this end, for all 15 sketches, participants were shown (a) an uncolored version of the sketch, (b) the automatic output of our method, with k set as presented in our overall results, and (c) the automatic output of *either* [YLL*22] or [PMC22], selected at random for each question. Additionally, participants were asked one screening question to ensure that respondents understood the instructions.

Instructions

This survey contains a total of 16 questions. In each question, you will be shown three pictures: an uncolored lineart sketch, followed by two possible colorings of the sketch.

Please select the coloring that best selects artist-intended regions of the sketch. You may also indicate that you prefer the colorings equally. **Note that white regions of the sketch have been deemed part of the “background.”** Otherwise, region colors are random.

Below, we provide an example question and response.



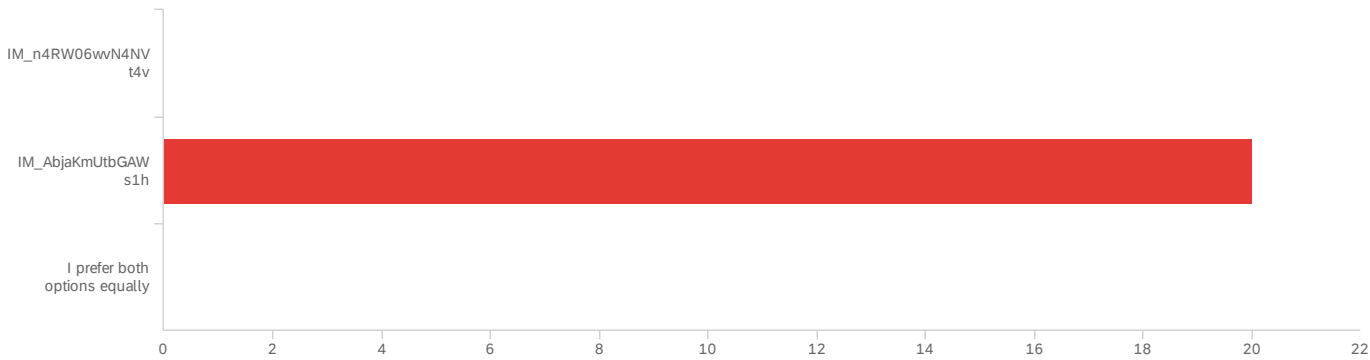
Here, the correct choice is **(B)**. Option (A) labels the pig’s body as background, and the facial features are not distinguished from the face.

References

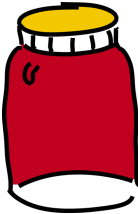
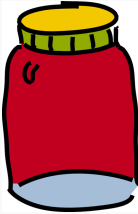
- [PMC22] PARAKKAT A. D., MEMARI P., CANI M.-P.: Delaunay painting: Perceptual image colouring from raster contours with gaps. *Computer Graphics Forum* 41, 6 (2022), 166–181. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/cgf.14517>, arXiv:<https://onlinelibrary.wiley.com/doi/pdf/10.1111/cgf.14517>, doi:<https://doi.org/10.1111/cgf.14517>.
- [YLL*22] YIN J., LIU C., LIN R., VINING N., RHODIN H., SHEFFER A.: Detecting viewer-perceived intended vector sketch connectivity. *ACM Transactions on Graphics* 41 (2022).

Default Report

Screening - Screening



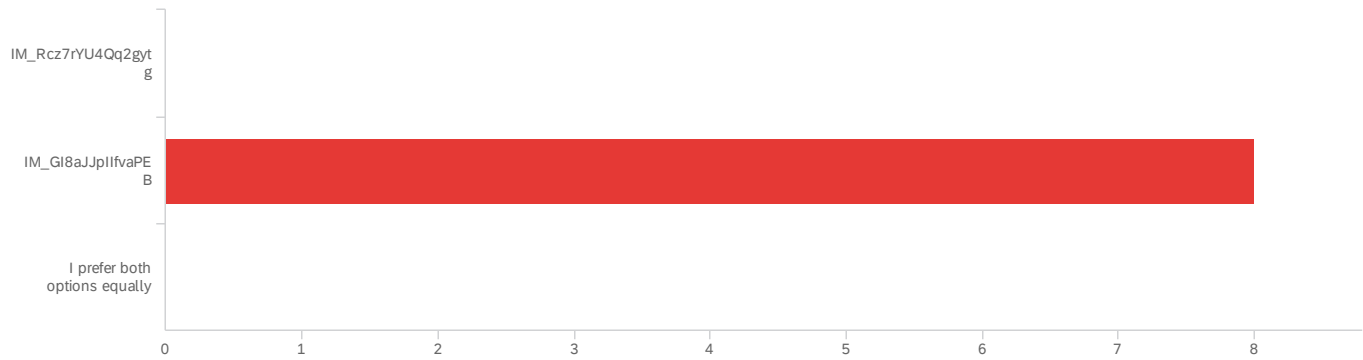
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Screening	2.00	2.00	2.00	0.00	0.00	20

#	Field	Choice Count
1		0.00% 0
2		100.00% 20
3	I prefer both options equally	0.00% 0
		20

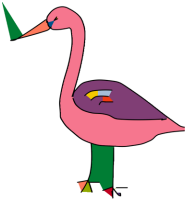
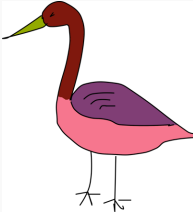
Showing rows 1 - 4 of 4

"Crane" Sketch

Parakkat - Parakkat



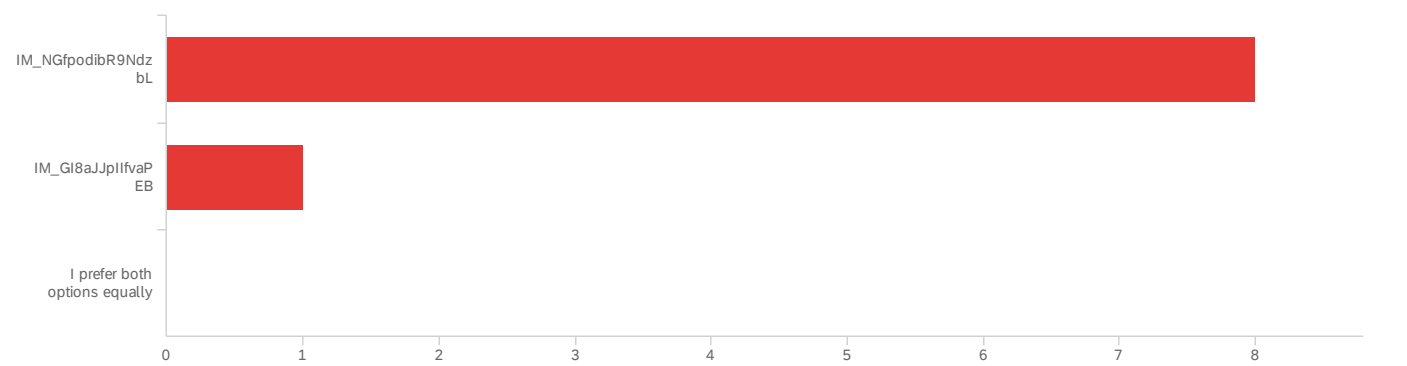
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	10.00	10.00	10.00	0.00	0.00	8

#	Field	Choice Count
9		0.00% 0
10		100.00% 8
11	I prefer both options equally	0.00% 0
		8

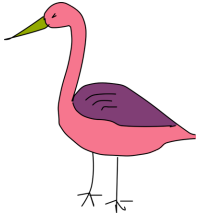
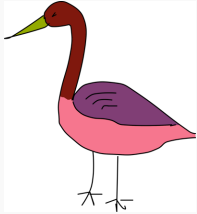
Showing rows 1 - 4 of 4

"Crane" Sketch

Yin - Yin

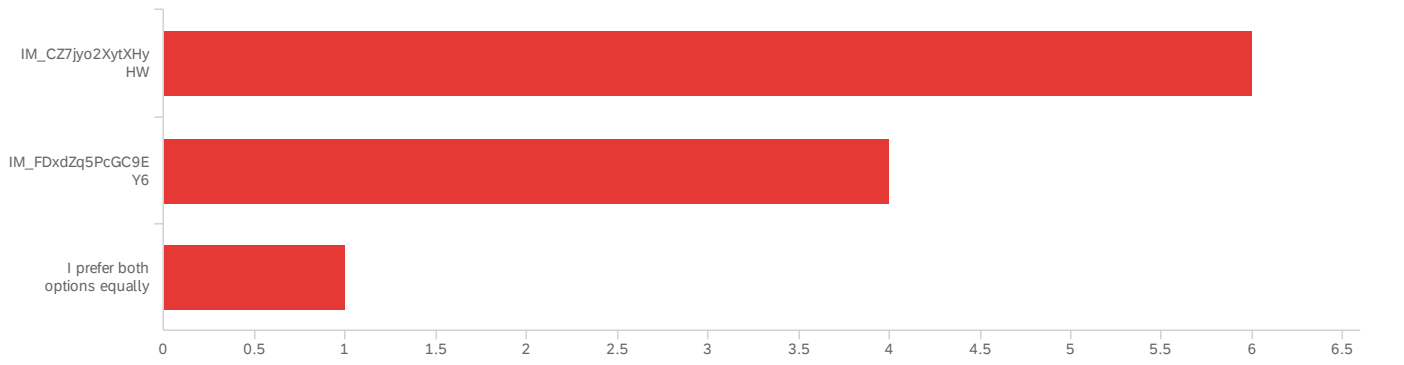


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	10.00	9.11	0.31	0.10	9


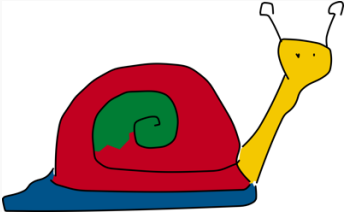
#	Field	Choice Count
9		88.89% 8
10		11.11% 1
11	I prefer both options equally	0.00% 0
		9

"Snail" Sketch

Parakkat - Parakkat

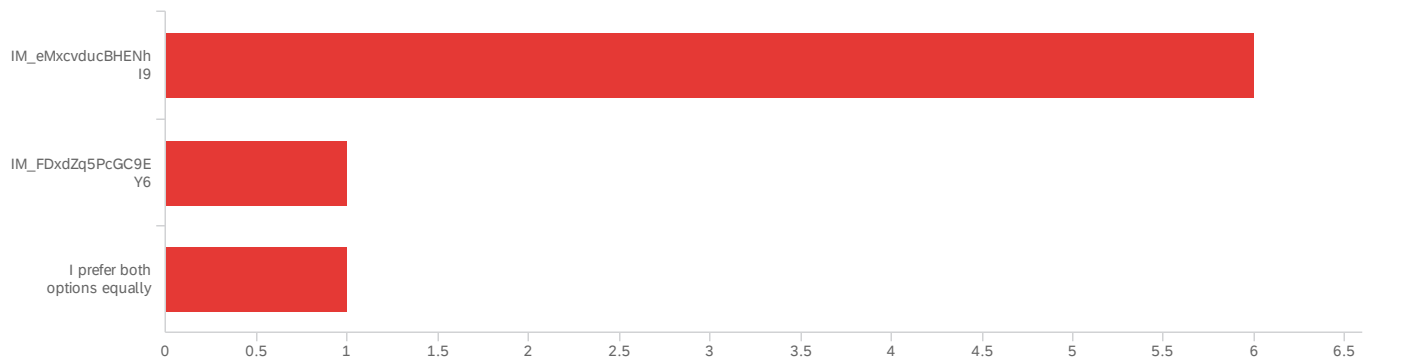


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	9.55	0.66	0.43	11


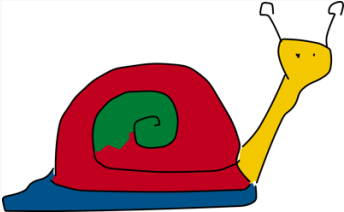
#	Field	Choice Count
9		54.55% 6
10		36.36% 4
11	I prefer both options equally	9.09% 1
		11

"Snail" Sketch

Yin - Yin



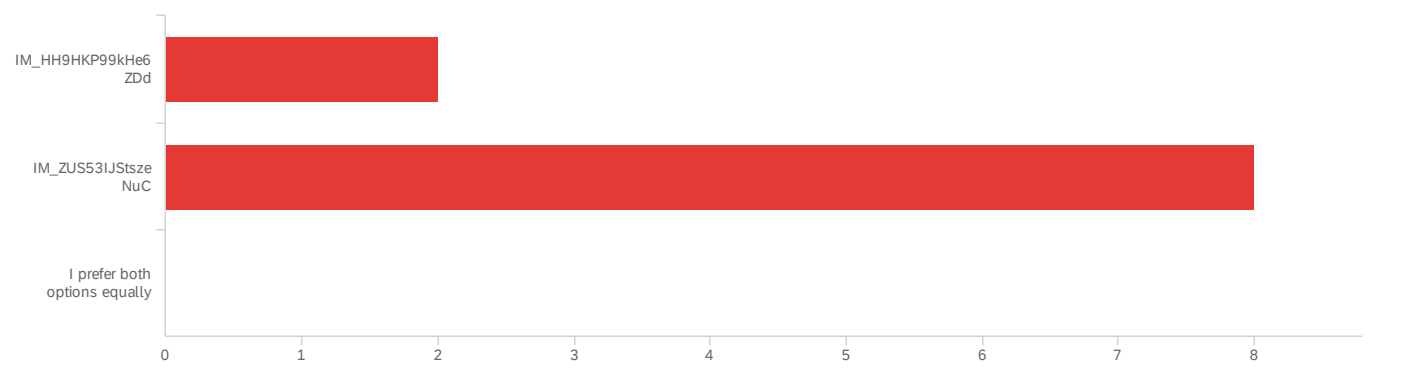
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	11.00	9.38	0.70	0.48	8

#	Field	Choice Count
9		75.00% 6
10		12.50% 1
11	I prefer both options equally	12.50% 1
		8


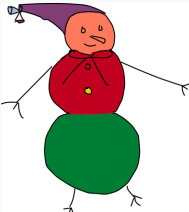
Showing rows 1 - 4 of 4

"Snowman" Sketch

Parakkat - Parakkat



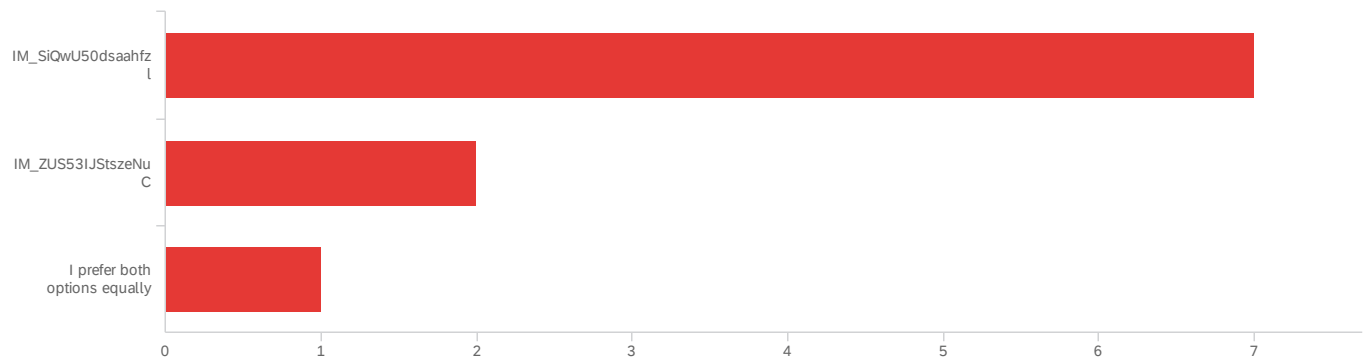
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	10.00	9.80	0.40	0.16	10

#	Field	Choice Count
9		20.00% 2
10		80.00% 8
11	I prefer both options equally	0.00% 0
		10


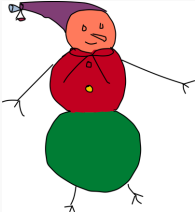
Showing rows 1 - 4 of 4

"Snowman" Sketch

Yin - Yin



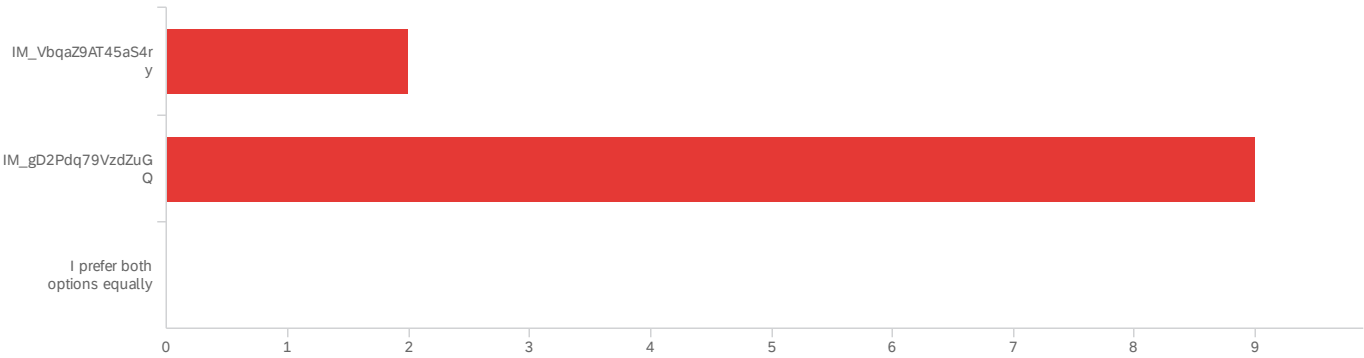
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	11.00	9.40	0.66	0.44	10

#	Field	Choice Count
9		70.00% 7
10		20.00% 2
11	I prefer both options equally	10.00% 1
		10

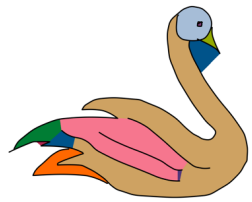
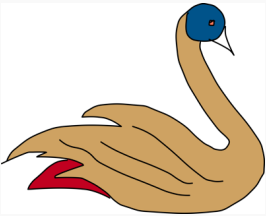
Showing rows 1 - 4 of 4

"Swan" Sketch

Parakkat - Parakkat

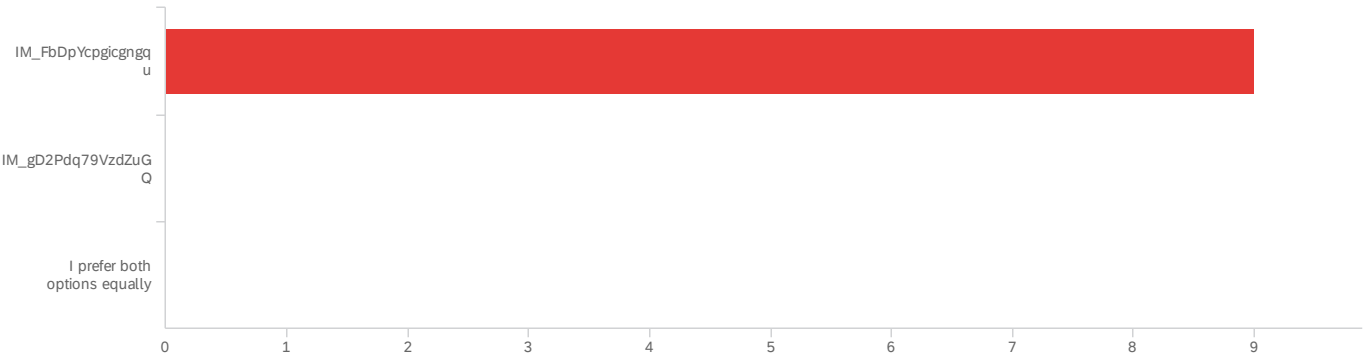


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	10.00	9.82	0.39	0.15	11

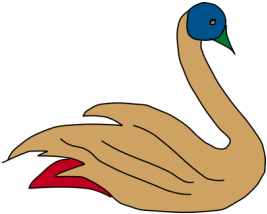
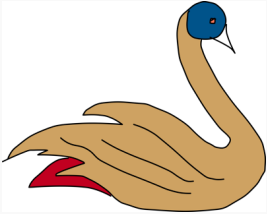
#	Field	Choice Count
9		18.18% 2
10		81.82% 9
11	I prefer both options equally	0.00% 0
		11

"Swan" Sketch

Yin - Yin



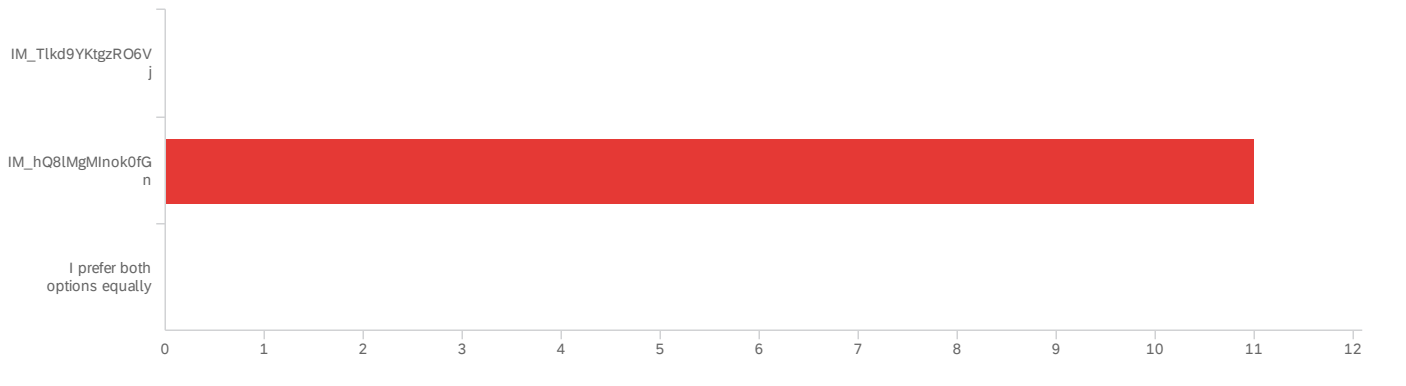
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	9.00	9.00	0.00	0.00	9

#	Field	Choice Count
9		100.00% 9
10		0.00% 0
11	I prefer both options equally	0.00% 0
		9

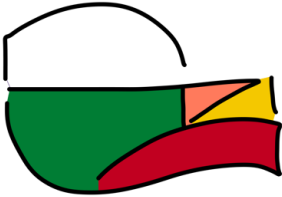
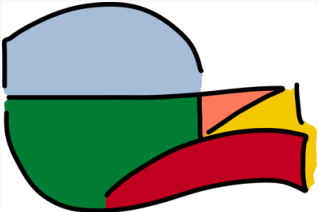
Showing rows 1 - 4 of 4

"Abstract" Sketch

Parakkat - Parakkat



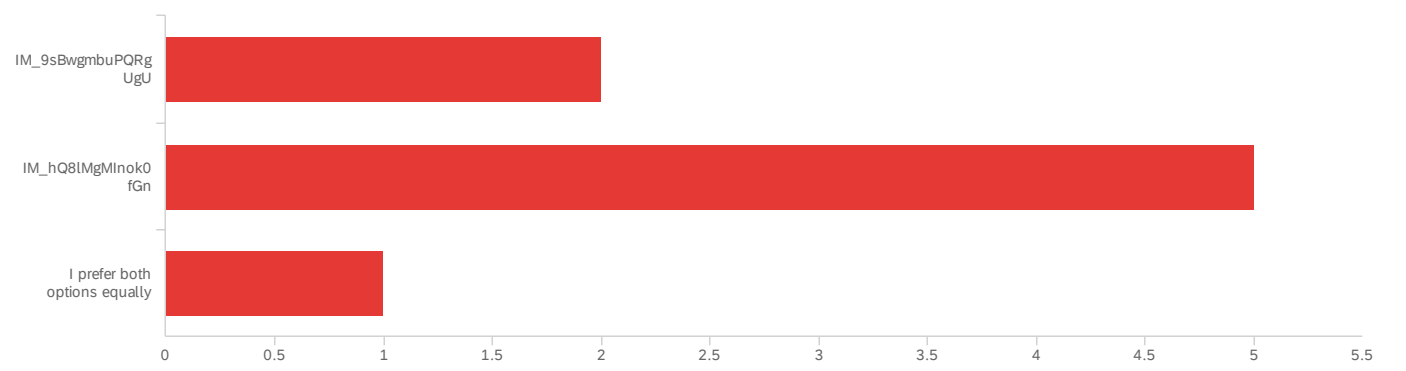
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	10.00	10.00	10.00	0.00	0.00	11

#	Field	Choice Count
9		0.00% 0
10		100.00% 11
11	I prefer both options equally	0.00% 0
		11

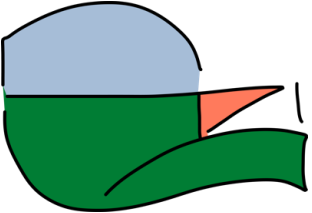
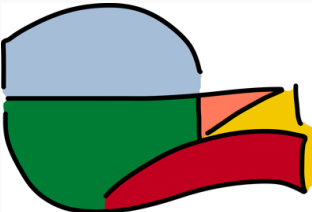
Showing rows 1 - 4 of 4

"Abstract" Sketch

Yin - Yin



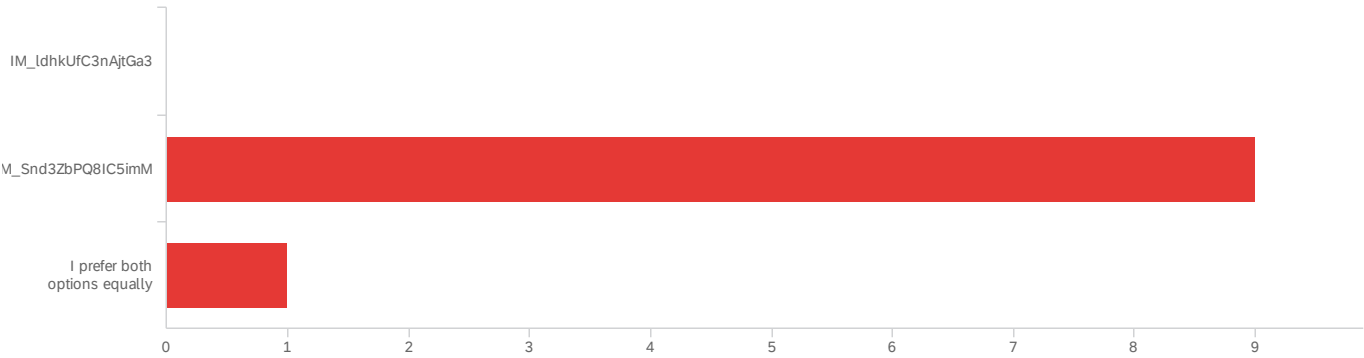
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	11.00	9.88	0.60	0.36	8

#	Field	Choice Count
9		25.00% 2
10		62.50% 5
11	I prefer both options equally	12.50% 1
		8



Showing rows 1 - 4 of 4

"Fruit" Sketch

Parakkat - Parakkat

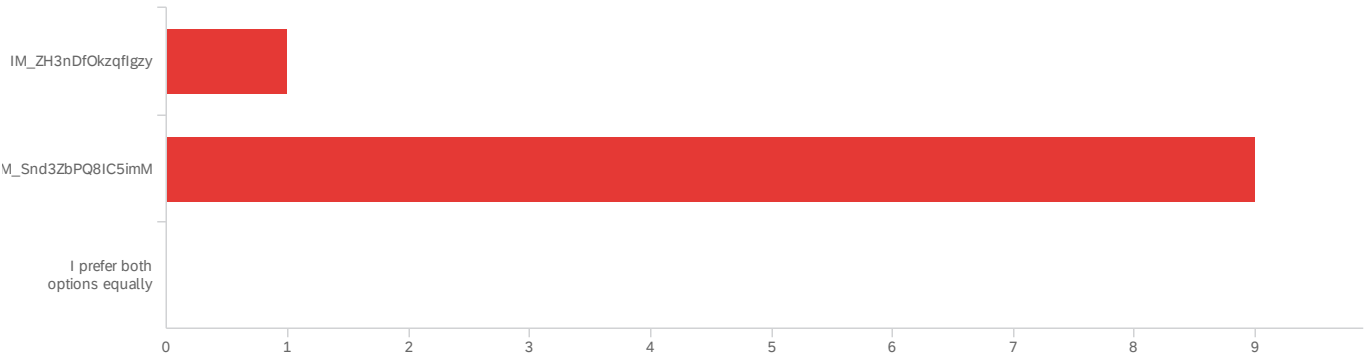


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	10.00	11.00	10.10	0.30	0.09	10



#	Field	Choice Count
9		0.00% 0
10		90.00% 9
11	I prefer both options equally	10.00% 1
		10

"Fruit" Sketch

Yin - Yin



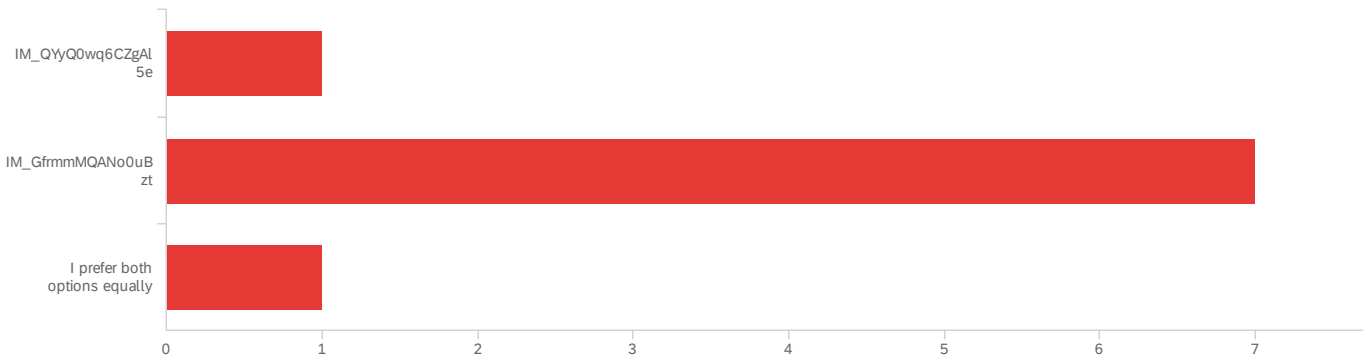
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	10.00	9.90	0.30	0.09	10

#	Field	Choice Count
9		10.00% 1
10		90.00% 9
11	I prefer both options equally	0.00% 0
		10



Showing rows 1 - 4 of 4

"Penguin" Sketch

Parakkat - Parakkat

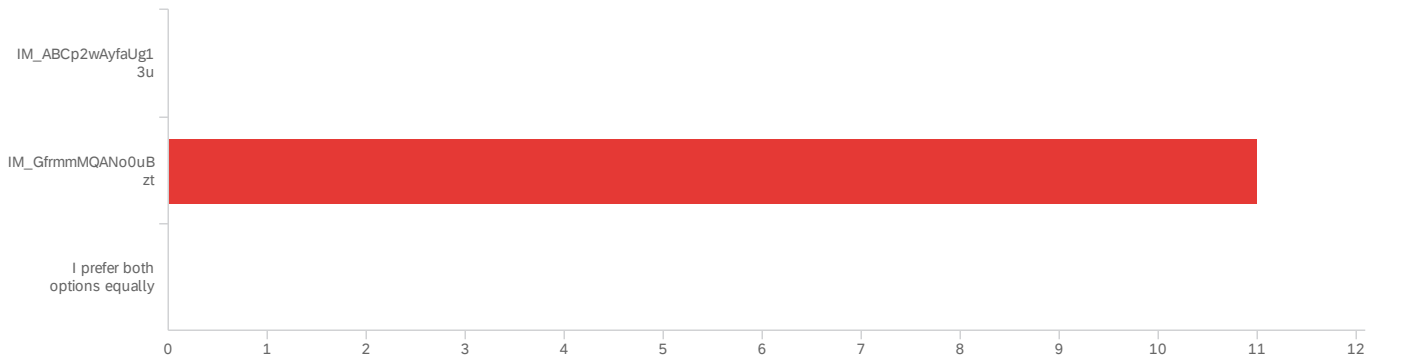


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	10.00	0.47	0.22	9



#	Field	Choice Count
9		11.11% 1
10		77.78% 7
11	I prefer both options equally	11.11% 1
		9

"Penguin" Sketch

Yin - Yin



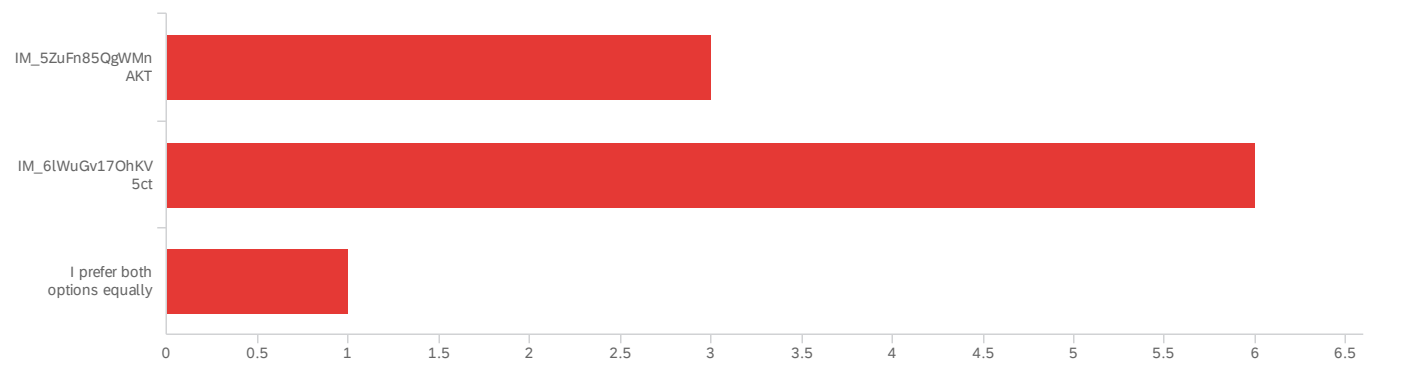
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	10.00	10.00	10.00	0.00	0.00	11

#	Field	Choice Count
9		0.00% 0
10		100.00% 11
11	I prefer both options equally	0.00% 0
		11

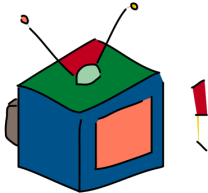
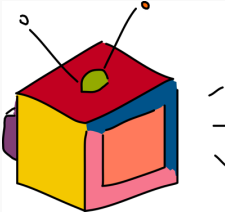
Showing rows 1 - 4 of 4

"Television" Sketch

Parakkat - Parakkat

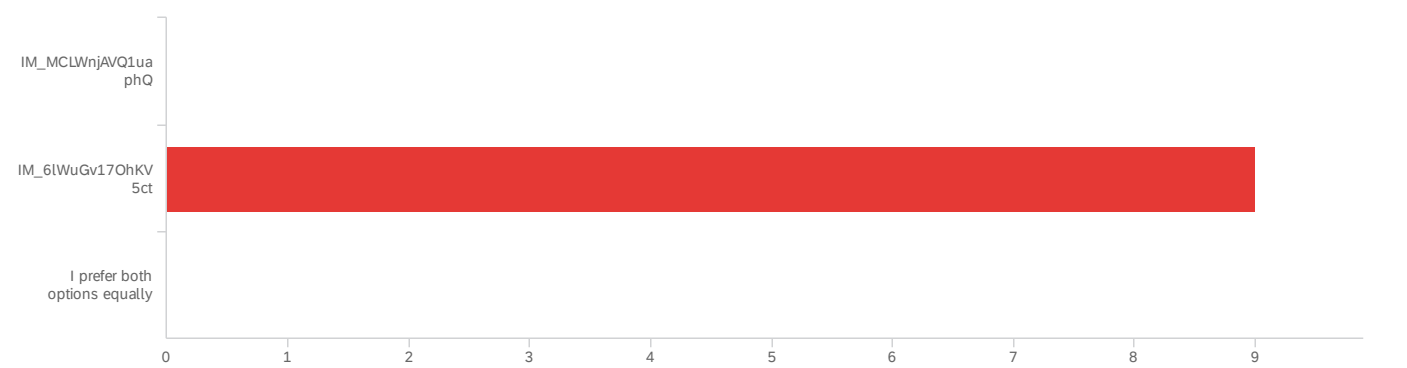


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	9.80	0.60	0.36	10

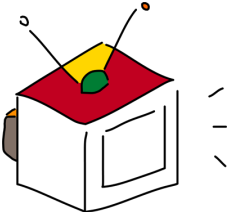
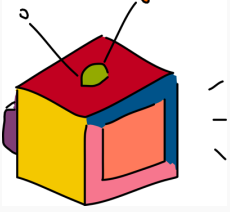
#	Field	Choice Count
9		30.00% 3
10		60.00% 6
11	I prefer both options equally	10.00% 1
		10

"Television" Sketch

Yin - Yin



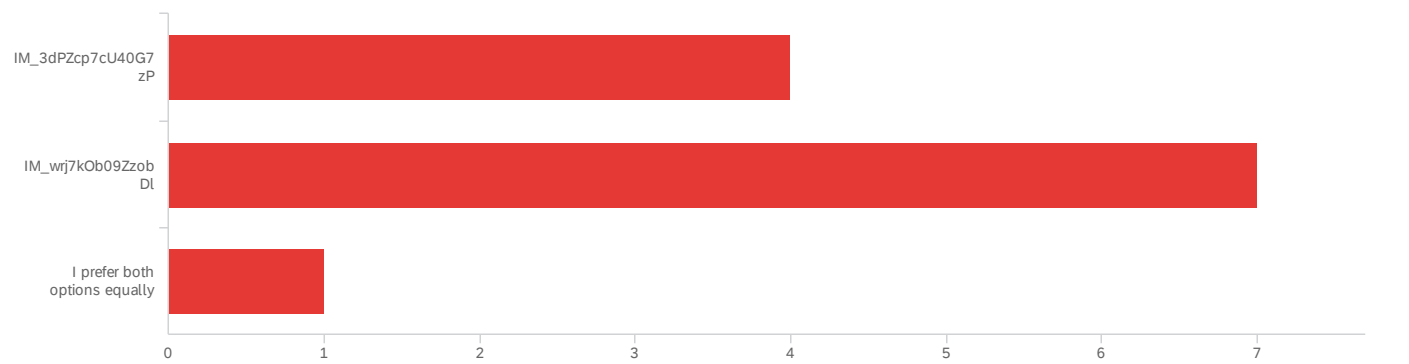
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	10.00	10.00	10.00	0.00	0.00	9

#	Field	Choice Count
9		0.00% 0
10		100.00% 9
11	I prefer both options equally	0.00% 0
		9



Showing rows 1 - 4 of 4

"Wave" Sketch

Parakkat - Parakkat



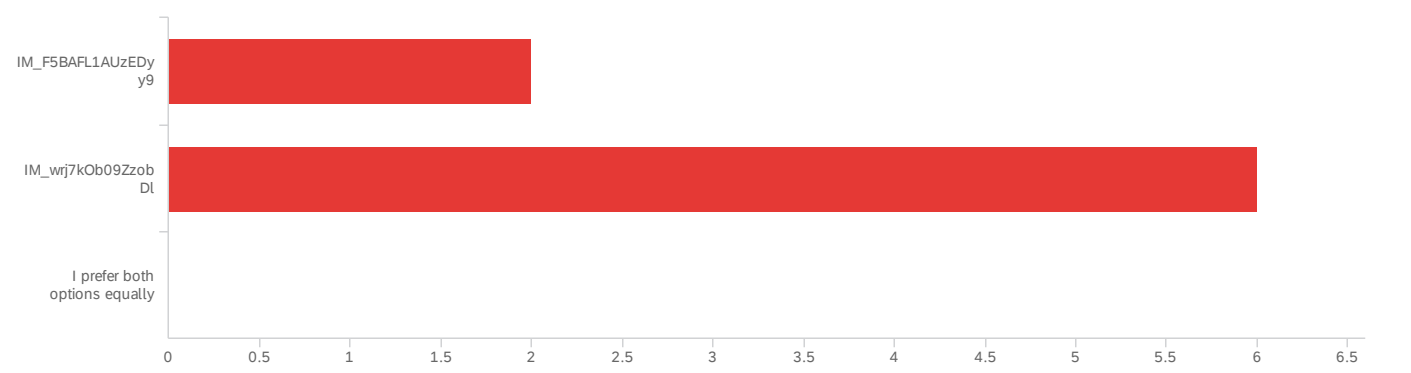
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	9.75	0.60	0.35	12

#	Field	Choice Count
9		33.33% 4
10		58.33% 7
11	I prefer both options equally	8.33% 1
		12

Showing rows 1 - 4 of 4

"Wave" Sketch



Yin - Yin



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
---	-------	---------	---------	------	---------------	----------	-------

1	Yin	9.00	10.00	9.75	0.43	0.19	8
---	-----	------	-------	------	------	------	---

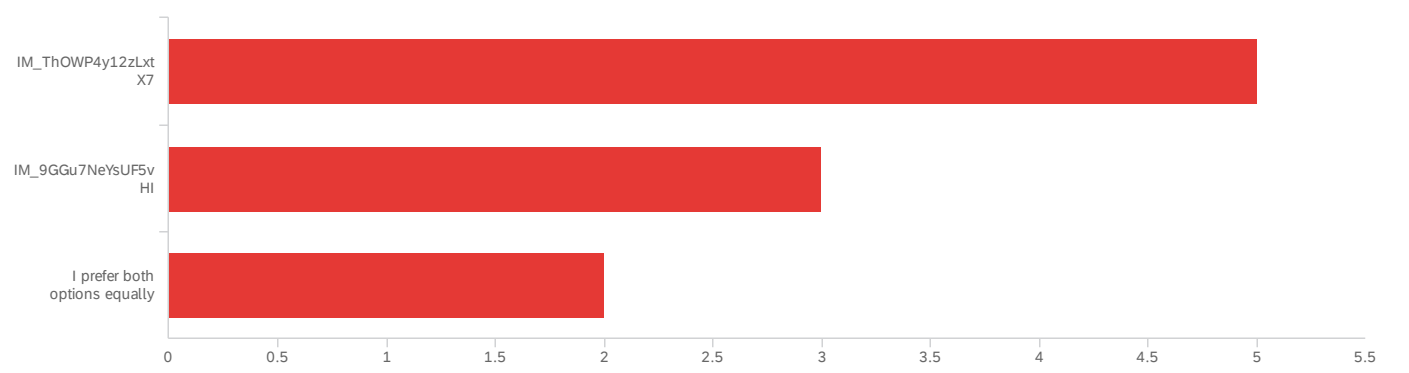
#	Field	Choice Count
---	-------	--------------

9		25.00%	2
10		75.00%	6
11	I prefer both options equally	0.00%	0
			8



Showing rows 1 - 4 of 4

"Cat" Sketch

Parakkat - Parakkat

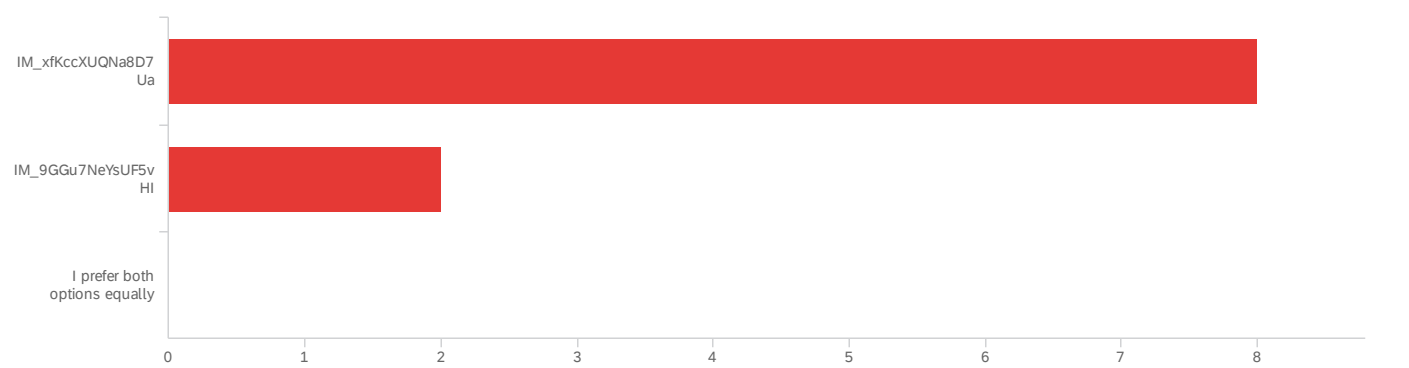


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	9.70	0.78	0.61	10

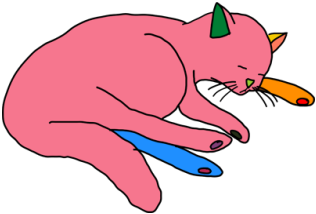
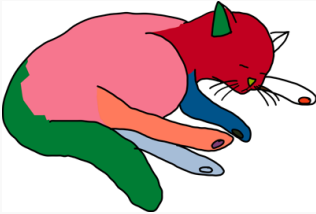
#	Field	Choice Count
9		50.00% 5
10		30.00% 3
11	I prefer both options equally	20.00% 2
		10

"Cat" Sketch

Yin - Yin



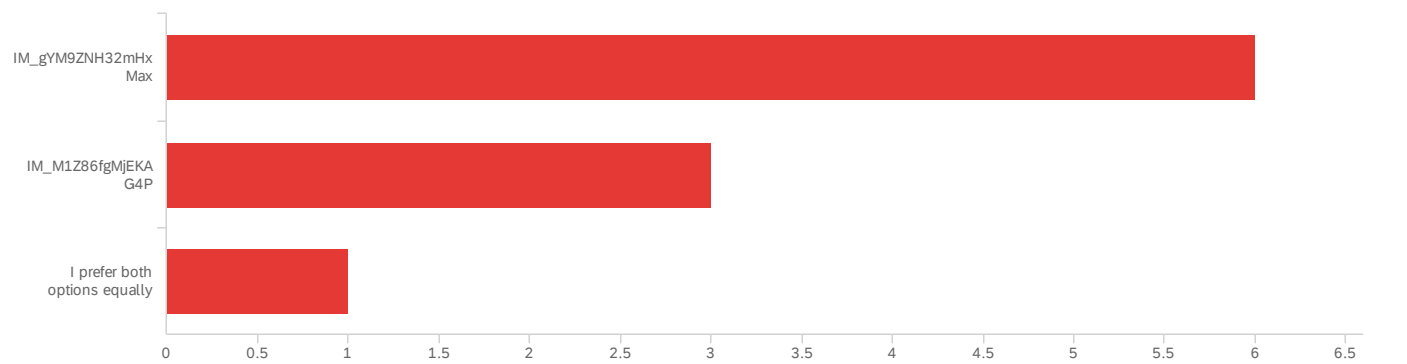
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	10.00	9.20	0.40	0.16	10

#	Field	Choice Count
9		80.00% 8
10		20.00% 2
11	I prefer both options equally	0.00% 0
		10



Showing rows 1 - 4 of 4

"Noir" Sketch

Parakkat - Parakkat



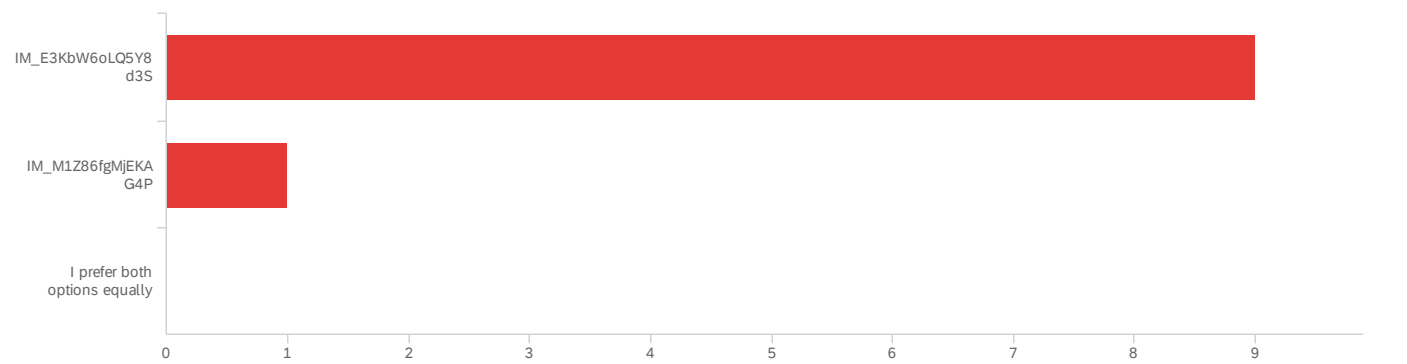
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	9.50	0.67	0.45	10

#	Field	Choice Count
9		60.00% 6
10		30.00% 3
11	I prefer both options equally	10.00% 1
		10



Showing rows 1 - 4 of 4

"Noir" Sketch

Yin - Yin

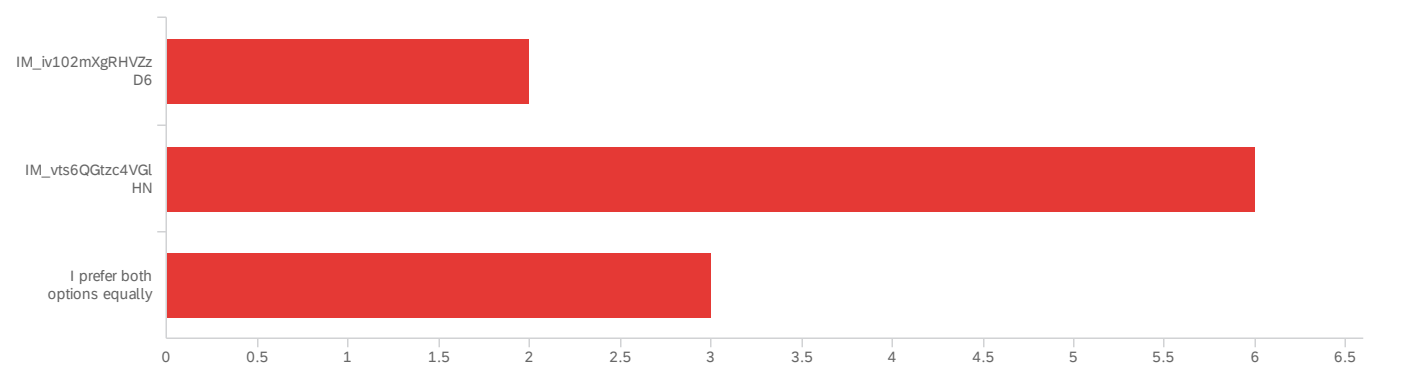


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	10.00	9.10	0.30	0.09	10

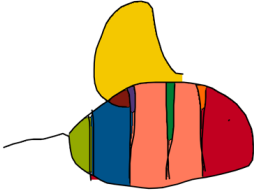
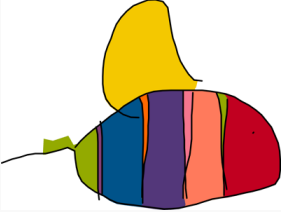
#	Field	Choice Count
9		90.00% 9
10		10.00% 1
11	I prefer both options equally	0.00% 0
		10

"Bee" Sketch

Parakkat - Parakkat

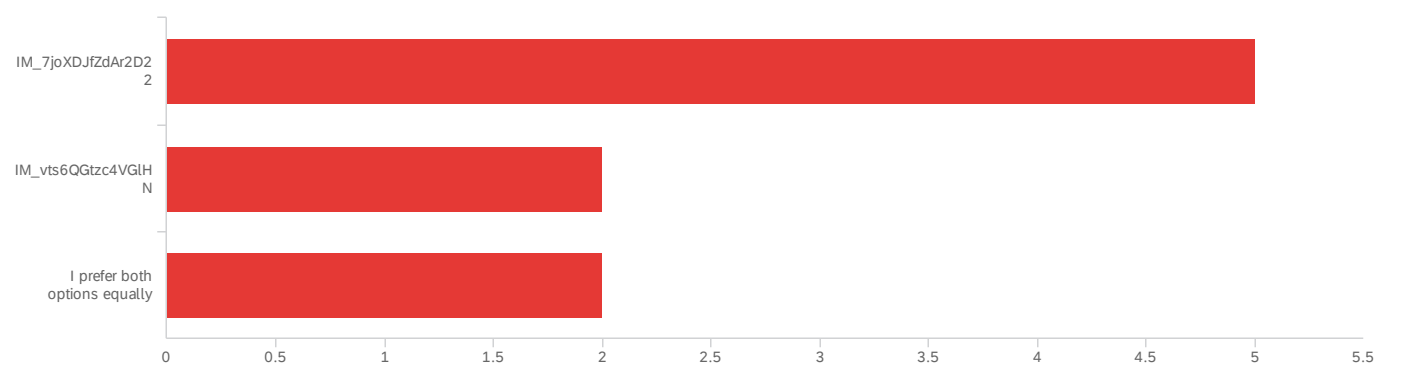


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	10.09	0.67	0.45	11

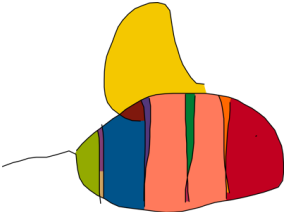
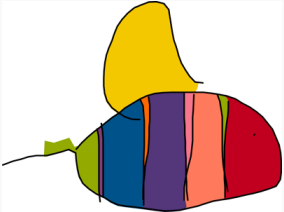
#	Field	Choice Count
9		18.18% 2
10		54.55% 6
11	I prefer both options equally	27.27% 3
		11

"Bee" Sketch

Yin - Yin

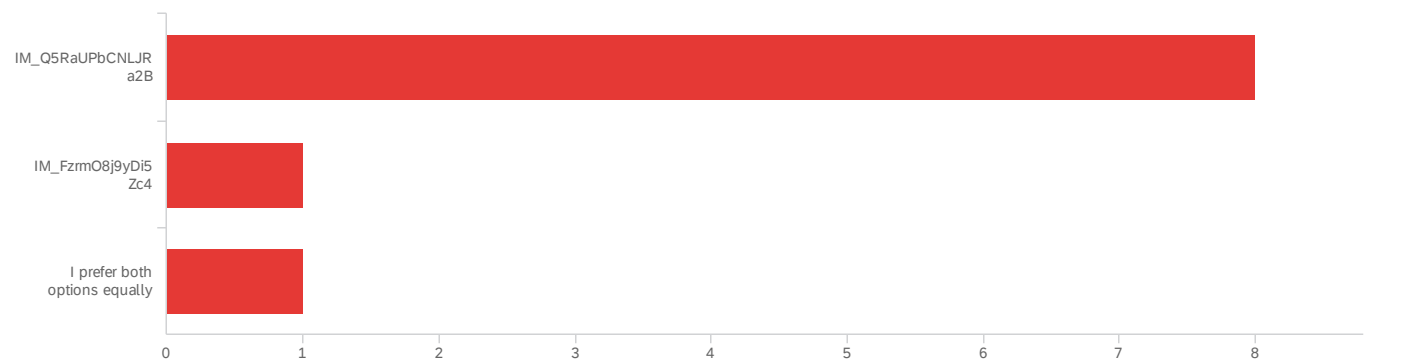


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	11.00	9.67	0.82	0.67	9

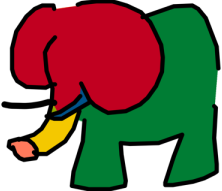
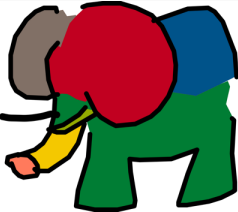
#	Field	Choice Count
9		55.56% 5
10		22.22% 2
11	I prefer both options equally	22.22% 2
		9

"Elephant" Sketch

Parakkat - Parakkat



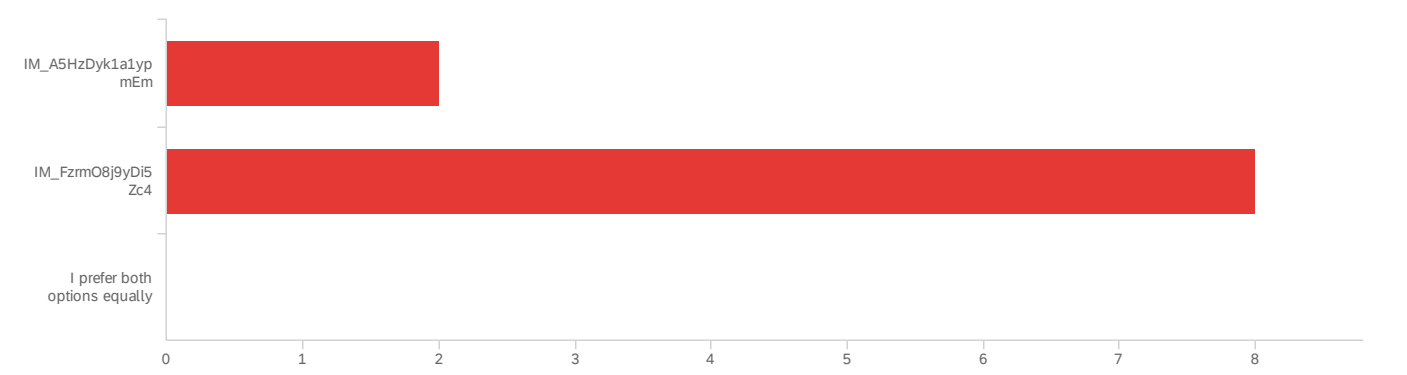
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	11.00	9.30	0.64	0.41	10

#	Field	Choice Count
9		80.00% 8
10		10.00% 1
11	I prefer both options equally	10.00% 1
		10

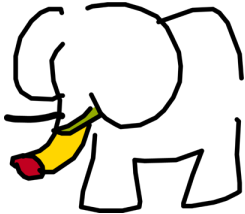
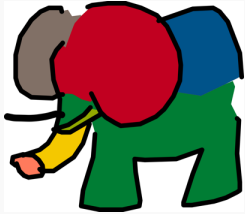
Showing rows 1 - 4 of 4

"Elephant" Sketch

Yin - Yin

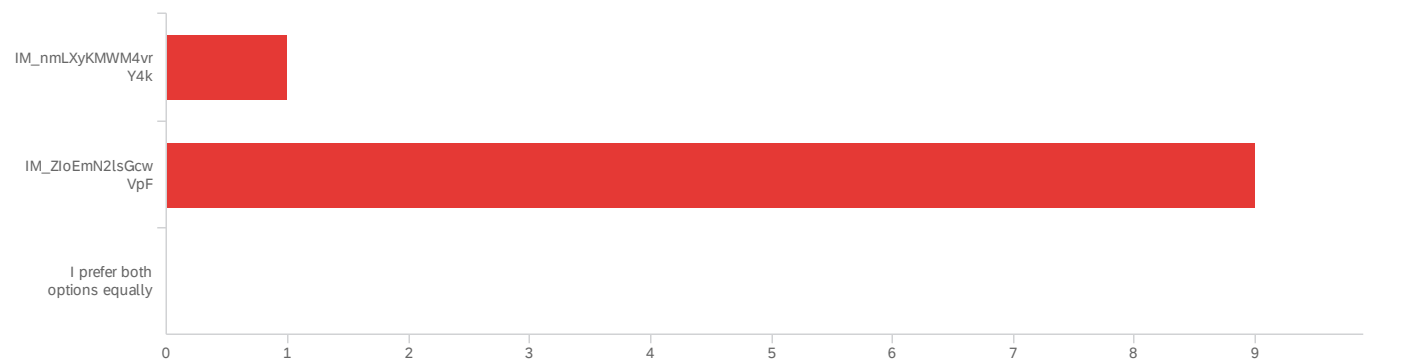


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	9.00	10.00	9.80	0.40	0.16	10

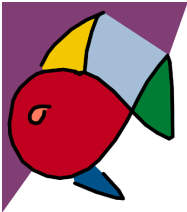
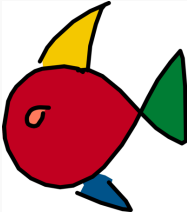
#	Field	Choice Count
9		20.00% 2
10		80.00% 8
11	I prefer both options equally	0.00% 0
		10

"Fish" Sketch

Parakkat - Parakkat



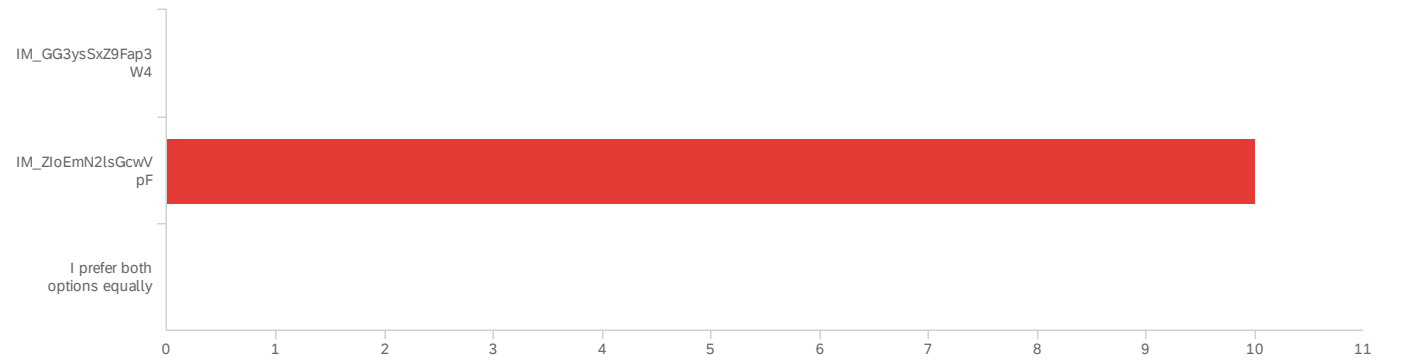
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Parakkat	9.00	10.00	9.90	0.30	0.09	10

#	Field	Choice Count
9		10.00% 1
10		90.00% 9
11	I prefer both options equally	0.00% 0
		10

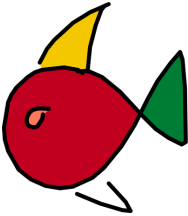
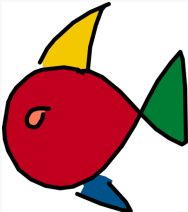
Showing rows 1 - 4 of 4

"Fish" Sketch

Yin - Yin



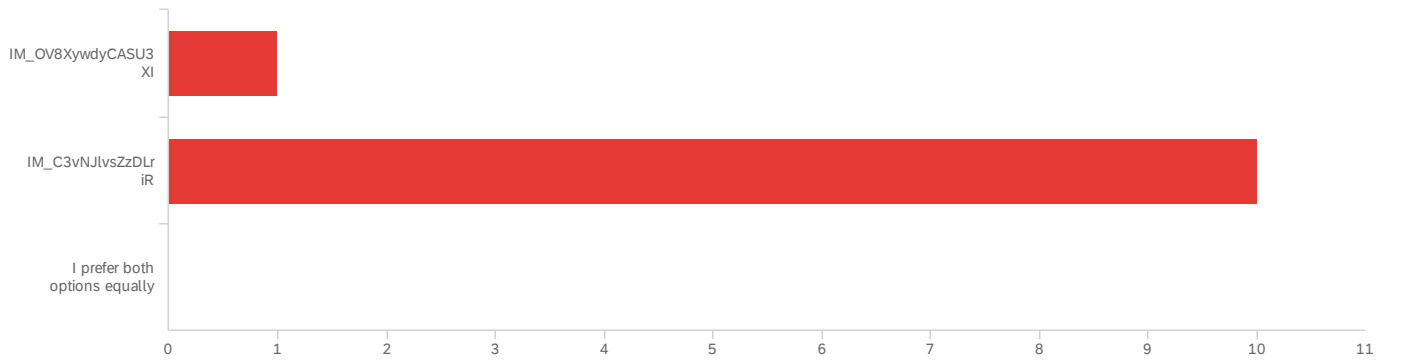
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Yin	10.00	10.00	10.00	0.00	0.00	10

#	Field	Choice Count
9		0.00% 0
10		100.00% 10
11	I prefer both options equally	0.00% 0
		10

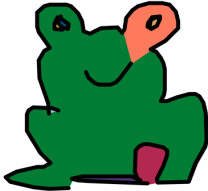
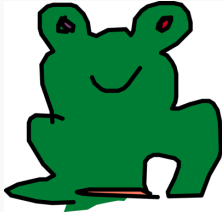
Showing rows 1 - 4 of 4

"Frog" Sketch (vs. Parakkat et al.)

Q40 - Q40



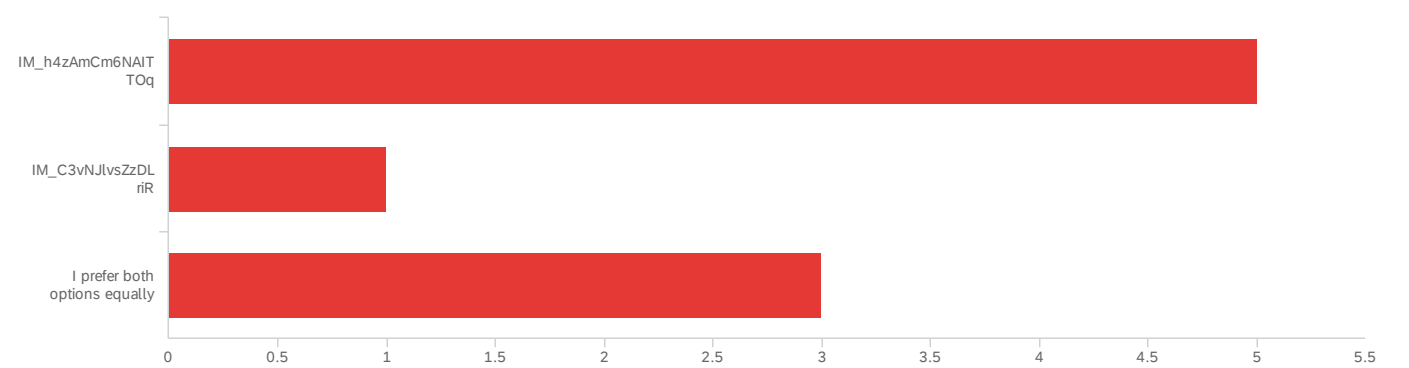
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Q40	9.00	10.00	9.91	0.29	0.08	11

#	Field	Choice Count
9		9.09% 1
10		90.91% 10
11	I prefer both options equally	0.00% 0
		11

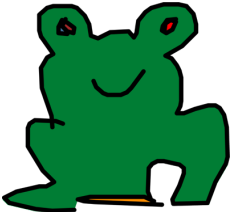

Showing rows 1 - 4 of 4

"Frog" Sketch (vs. Yin et al.)

Q41 - Q41



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Q41	9.00	11.00	9.78	0.92	0.84	9

#	Field	Choice Count
9		55.56% 5
10		11.11% 1
11	I prefer both options equally	33.33% 3
		9