

HeatMapMaker User Manual

Configuration: File Input

For the input .csv file to correctly be processed, it must follow the following format:

label	Group	numOtu	Category	Sub	Otu00001	Otu00002	Otu00003	Otu00004	Otu00005	Otu00006	Otu00007	Otu00008
0.03	DA1	3770	aeneus	Desmogn	515	28	1	0	1	4	0	77
0.03	DA10	3770	aeneus	Desmogn	984	147	1	6	1	2	0	12
0.03	DA11	3770	aeneus	Desmogn	242	66	2	0	6	2	5	19
0.03	DA12	3770	aeneus	Desmogn	626	30	51	38	5	9	0	11
0.03	DA13	3770	aeneus	Desmogn	486	132	12	9	8	17	0	15
0.03	DA14	3770	aeneus	Desmogn	489	90	4	8	6	5	0	41
0.03	DA2	3770	aeneus	Desmogn	950	80	4	0	7	0	1	28
0.03	DA3	3770	aeneus	Desmogn	951	123	0	1	4	0	0	20
0.03	DA4	3770	aeneus	Desmogn	207	168	6	2	1	22	2	21
0.03	DA5	3770	aeneus	Desmogn	872	38	0	2	2	1	1	31
0.03	DA6	3770	aeneus	Desmogn	729	26	5	2	4	3	3	4
0.03	DA7	3770	aeneus	Desmogn	120	82	0	0	5	2	4	15
0.03	DA8	3770	aeneus	Desmogn	297	257	25	3	3	2	4	14
0.03	DA9	3770	aeneus	Desmogn	767	22	0	5	0	0	0	14
0.03	DF1_8	3770	folkerts	Desmogn	0	0	0	0	0	0	0	0
0.03	DF20	3770	folkerts	Desmogn	19	54	140	92	93	53	57	96
0.03	DF21	3770	folkerts	Desmogn	3	57	30	8	18	14	336	53
0.03	DF22	3770	folkerts	Desmogn	2	38	128	252	110	79	110	17
0.03	DF23	3770	folkerts	Desmogn	1	163	218	268	123	81	17	1

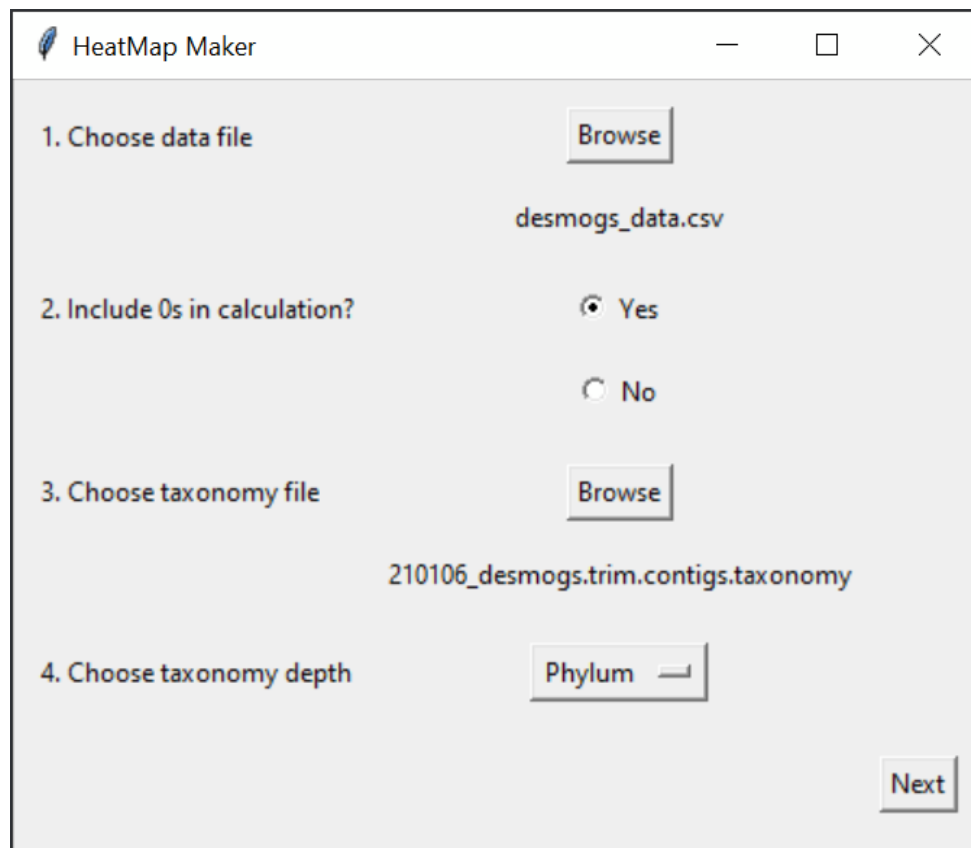
It must contain the columns numOtu, Category, and each Otu. Other columns like label, group, and sub can be added, but are not used within the program. These essential column labels are case-sensitive, and the .csv file input should be sorted by category in Excel before use.

For the input .taxonomy file to be correctly processed, it must follow the following format:

OTU	Size	Taxonomy
Otu00001	538196	Bacteria(100);Proteobacteria(100);Gammaproteobacteria(100);Cardiobacteriales(100);Wohlfahrtiimonadaceae(100);Ignatzschineria(
Otu00002	420379	Bacteria(100);Firmicutes(100);Bacilli(100);Bacillales(100);Bacillales_unclassified(100);Bacillales_unclassified(100);
Otu00003	364709	Bacteria(100);Firmicutes(100);Bacilli(100);Bacillales(100);Planococcaceae(99);Planococcaceae_unclassified(99);
Otu00004	147695	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Corynebacteriales(100);Corynebacteriaceae(100);Corynebacterium(100);
Otu00005	143365	Bacteria(100);Proteobacteria(100);Gammaproteobacteria(100);Pseudomonadales(100);Pseudomonadaceae(100);Oblitimonas(100);
Otu00006	133313	Bacteria(100);Firmicutes(100);Bacilli(100);Bacillales(100);Planococcaceae(100);Planococcaceae_unclassified(99);
Otu00007	127166	Bacteria(100);Proteobacteria(100);Gammaproteobacteria(100);Cardiobacteriales(100);Wohlfahrtiimonadaceae(100);Wohlfahrtiimonas
Otu00008	108562	Bacteria(100);Firmicutes(100);Clostridia(100);Peptostreptococcales-Tissierellales(100);Peptostreptococcales-Tissierellales_fa
Otu00009	96394	Bacteria(100);Planctomycetota(100);Planctomycetes(100);Isosphaerales(100);Isosphaeraceae(100);Isosphaera(98);
Otu00010	89690	Bacteria(100);Firmicutes(100);Bacilli(100);Bacilli_unclassified(100);Bacilli_unclassified(100);Bacilli_unclassified(100);
Otu00011	85346	Bacteria(100);Firmicutes(100);Bacilli(100);Bacillales(100);Planococcaceae(100);Planococcaceae_unclassified(100);
Otu00012	64359	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Corynebacteriales(100);Nocardiaceae(100);Gordonia(100);
Otu00013	60240	Bacteria(100);Firmicutes(100);Clostridia(100);Peptostreptococcales-Tissierellales(100);Peptostreptococcales-Tissierellales_fa
Otu00014	53602	Bacteria(100);Firmicutes(100);Clostridia(100);Peptostreptococcales-Tissierellales(100);Peptostreptococcales-Tissierellales_fa
Otu00015	52631	Bacteria(100);Firmicutes(100);Clostridia(100);Peptostreptococcales-Tissierellales(100);Peptostreptococcales-Tissierellales_fa
Otu00016	46423	Bacteria(100);Bacteroidota(100);Bacteroidia(100);Flavobacteriales(100);Flavobacteriaceae(100);Myroides(100);
Otu00017	40545	Bacteria(100);Proteobacteria(100);Gammaproteobacteria(100);Cardiobacteriales(100);Wohlfahrtiimonadaceae(100);Wohlfahrtiimonad
Otu00018	40542	Bacteria(100);Firmicutes(100);Bacilli(100);Lactobacillales(100);Lactobacillales_unclassified(100);Lactobacillales_unclassified
Otu00019	31859	Bacteria(100);Firmicutes(100);Bacilli(100);Lactobacillales(100);Vagococcaceae(100);Vagococcus(100);
Otu00020	24377	Bacteria(100);Firmicutes(100);Clostridia(100);Clostridiales(100);Clostridiaceae(100);Clostridium_sensu_stricto_7(100);
Otu00021	23967	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Micrococcales(100);Microbacteriaceae(100);Microbacterium(96);
Otu00022	23019	Bacteria(100);Firmicutes(100);Clostridia(100);Peptostreptococcales-Tissierellales(100);Peptostreptococcaceae(100);Peptostrept
Otu00023	21667	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Corynebacteriales(100);Dietziaceae(100);Dietzia(100);
Otu00024	21559	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Micrococcales(100);Brevibacteriaceae(100);Brevibacterium(100);
Otu00025	20348	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Micrococcales(100);Promicromonosporaceae(100);Cellulosimicrobium(59);
Otu00026	18546	Bacteria(100);Firmicutes(100);Bacilli(100);Lactobacillales(100);Lactobacillales_unclassified(99);Lactobacillales_unclassified
Otu00027	16764	Bacteria(100);Firmicutes(100);Clostridia(100);Peptostreptococcales-Tissierellales(100);Peptostreptococcales-Tissierellales_fa
Otu00028	16733	Bacteria(100);Actinobacteriota(100);Actinobacteria(100);Micrococcales(100);Microbacteriaceae(100);Microbacterium(96);

The file should begin with a column of the Otu number designations, and contain the taxonomies identified separated by semicolons in a column under 'Taxonomy'. These column labels are not case-sensitive, but still necessary. All that is required in this file is for the Otu and identified taxonomies to be separated by a space on the same line, which means that any assortment of information can be placed before or after, provided spaces separate the distinct data columns.

Configuration: Setup Options



The image shows a window titled "HeatMap Maker" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains four numbered steps for configuration:

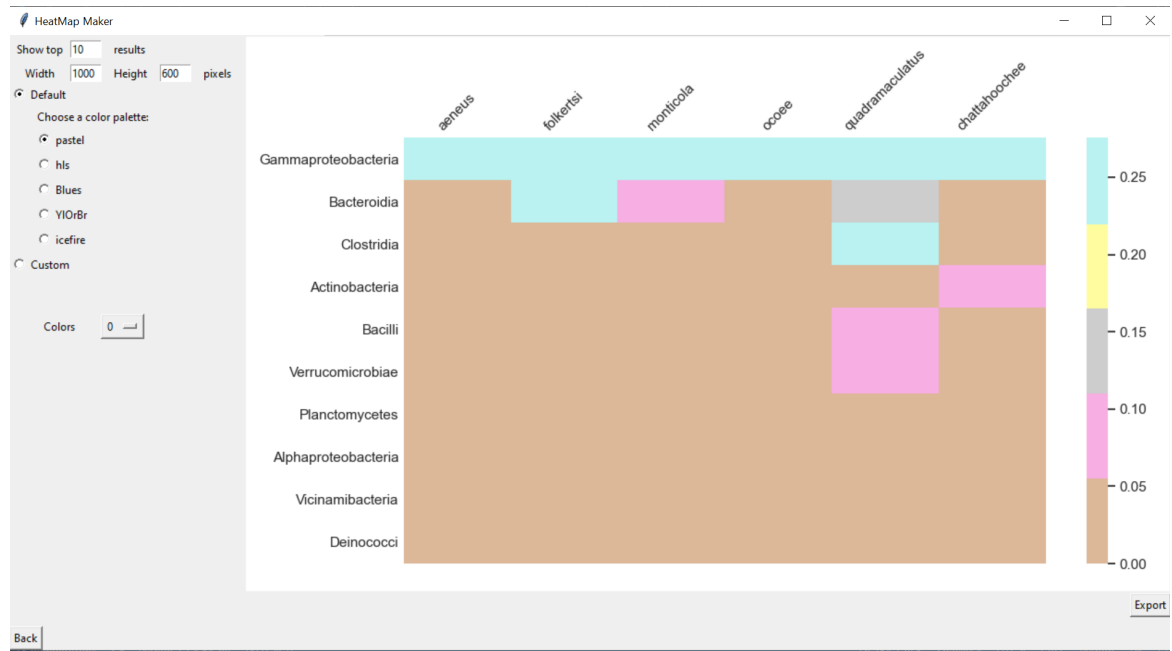
- 1. Choose data file**: A "Browse" button is shown, followed by the text "desmogs_data.csv".
- 2. Include 0s in calculation?**: Two radio buttons are present, with "Yes" selected (indicated by a filled circle) and "No" unselected (indicated by an empty circle).
- 3. Choose taxonomy file**: A "Browse" button is shown, followed by the text "210106_desmogs.trim.contigs.taxonomy".
- 4. Choose taxonomy depth**: A dropdown menu is shown with "Phylum" selected and a small arrow icon to its right.

A "Next" button is located in the bottom right corner of the window.

Once files have been formatted and inputted through the 'Browse' buttons on the setup window, the user is prompted with options to determine the taxonomy depth the heatmap maker will aggregate the data with, and whether or not to include zeros in the averages contained in the program.

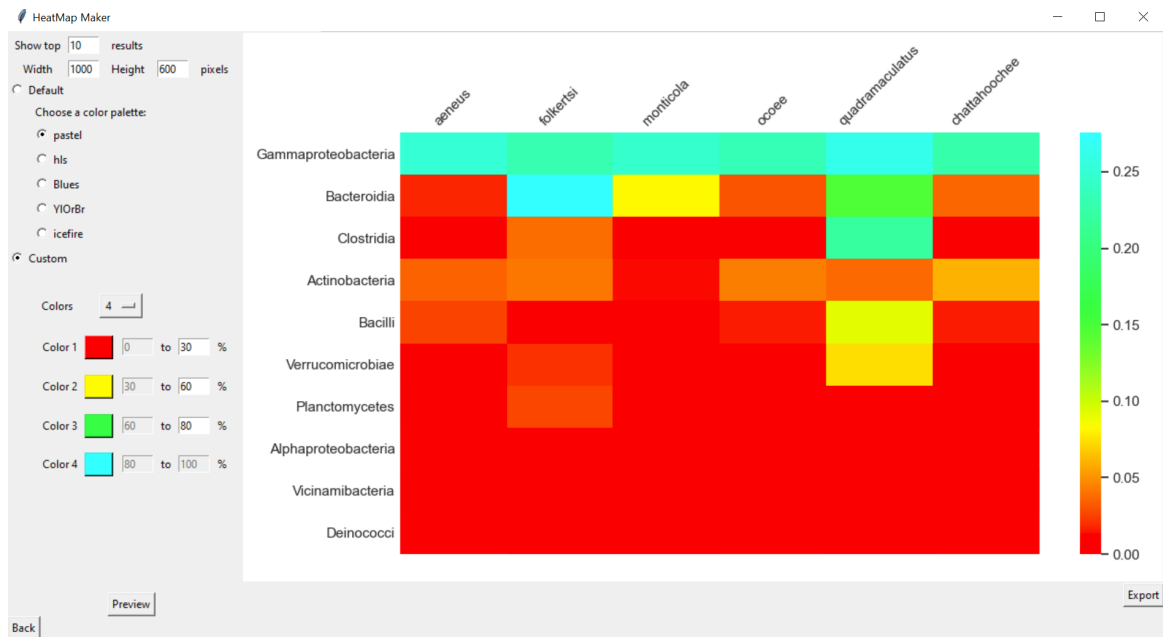
If a taxonomy depth is not available, the user will be prompted with an error. Once an available taxonomy has been chosen, the user may press the 'Next' button to create their heatmap.

Heatmap Creation: Default



On the heatmap window, the user can choose between multiple default color palettes for their initial heatmap. They may also customize the amount of results displayed, as well as the height and width of the heatmap in pixels.

Heatmap Creation: Custom



The user may also defer to the custom heatmap creator, in which from 4 to 10 colors and percent ranges can be chosen to create a fully customized heatmap. Once a satisfactory heatmap is created, the user may press the 'Export' button to save their heatmap as a .pdf or .png file.