

# Contents

<b>0 Introduction</b>	<b>3</b>
<b>1 skin.json File Structure</b>	<b>4</b>
1.1 Template . . . . .	4
1.2 Description . . . . .	4
1.3 Fields . . . . .	5
1.4 A note on Card Inheritance . . . . .	6
1.5 A note on Skin Inheritance . . . . .	6
<b>2 Cards</b>	<b>7</b>
2.1 Structure . . . . .	7
2.1.1 Properties . . . . .	7
2.2 Tasklist . . . . .	8
2.2.1 Colour Properties . . . . .	8
2.2.2 Spacing Properties . . . . .	9
2.2.3 String Properties . . . . .	10
2.2.4 Assets . . . . .	10
2.2.5 Mask Assets . . . . .	12
2.3 Stats . . . . .	12
2.3.1 Colour Properties . . . . .	12
2.3.2 Spacing Properties . . . . .	13
2.3.3 String Properties . . . . .	13
2.3.4 Assets . . . . .	13
2.3.5 Mask Assets . . . . .	14
2.4 Profile . . . . .	14
2.4.1 Colour Properties . . . . .	14
2.4.2 Spacing Properties . . . . .	15
2.4.3 String Properties . . . . .	15
2.4.4 Assets . . . . .	15
2.4.5 Mask Assets . . . . .	17
2.5 Weekly Stats . . . . .	17
2.5.1 Colour Properties . . . . .	17
2.5.2 Spacing Properties . . . . .	21
2.5.3 String Properties . . . . .	21
2.5.4 Assets . . . . .	21
2.5.5 Mask Assets . . . . .	22
2.6 Monthly Stats . . . . .	22
2.6.1 Colour Properties . . . . .	22
2.6.2 Spacing Properties . . . . .	27
2.6.3 String Properties . . . . .	27
2.6.4 Assets . . . . .	27
2.6.5 Mask Assets . . . . .	27
2.7 Weekly Goals . . . . .	27
2.7.1 Colour Properties . . . . .	27
2.7.2 Spacing Properties . . . . .	32
2.7.3 String Properties . . . . .	32
2.7.4 Assets . . . . .	32

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2.7.5 Mask Assets . . . . .	33
<b>2.8 Monthly Goals . . . . .</b>	<b>33</b>
2.8.1 Colour Properties . . . . .	33
2.8.2 Spacing Properties . . . . .	33
2.8.3 String Properties . . . . .	33
2.8.4 Assets . . . . .	33
2.8.5 Mask Assets . . . . .	34
<b>2.9 Leaderboard . . . . .</b>	<b>34</b>
2.9.1 Colour Properties . . . . .	36
2.9.2 Spacing Properties . . . . .	36
2.9.3 String Properties . . . . .	36
2.9.4 Assets . . . . .	36
2.9.5 Mask Assets . . . . .	38
<b>A Annotated Example: Obsidian</b>	<b>39</b>
A.1 Directory Structure . . . . .	39
A.2 <code>skin.json</code> file . . . . .	40

# **Chapter 0**

## **Introduction**

This is a work-in-progress specification of the StudyLion GUI skinning interface.

This specification is mainly intended to be used as a reference guide while creating or modifying global skins for StudyLion.

The suggested way to read this specification is start from the appendix, wherein there is a worked example of a complete skin (the actual StudyLion Obsidian skin data). The properties and assets of this example link back to tabulated descriptions in the text itself for more information.

The example skin may also be found on the skins plugin Github repository, and used as a template if desired.

In its present state, the specification is still highly incomplete as a full guide to skin properties and customisation. However, it should describe all relevant properties needed for basic skin creation, where assets are replaced with equivalent ones, and only colour properties need modification.

# Chapter 1

## skin.json File Structure

### 1.1 Template

---

```
1  {
2      "display_name": "Sample Skin",
3      "description": "A sample skin template",
4      "public": true,
5      "price": 1024,
6      "asset_root": "assets",
7      "parents": ["base"],
8      "guild_whitelist": [917704915311276032],
9      "user_whitelist": [514205586502713365],
10     "properties": {
11         "common": {
12             },
13         "tasklist": {
14             },
15         "stats": {
16             },
17         "profile": {
18             },
19         "weekly_stats": {
20             },
21         "monthly_stats": {
22             },
23         "weekly_goals": {
24             },
25         "monthly_goals": {
26             },
27         "leaderboard": {
28             }
29     }
30 }
```

---

### 1.2 Description

The `skin.json` file goes in the skin *root* directory (e.g. `skins/obsidian/skin.json`), and describes the skin metadata (e.g. the visible name, price, asset location, etc), as well as any *card properties* that this skin specifies (i.e. colours, spaces, strings, etc).

## 1.3 Fields

All fields except properties are optional, however most fields should be provided for visible skins (i.e. skins that will be visible to at least one regular user).

Field	Description
display_name	<b>Required</b> for visible skins. <b>Type:</b> A string less than 25 characters. <b>Default:</b> "Unnamed" The name of skin displayed to users in selection menus and any configuration. May be changed without notice (unlike the <code>skin_id</code> in the <code>skins.json</code> file).
description	<b>Required</b> for visible skins. <b>Type:</b> A string less than 100 characters. The description users will see for this skin in selection menus.
public	<b>Optional.</b> <b>Type:</b> Either true or false. <b>Default:</b> false Whether this is a <i>public</i> skin, visible to any guild or user who can access a skin shop or selection menu. This explicitly overrides <code>guild_whitelist</code> and <code>user_whitelist</code> .
price	<b>Optional.</b> <b>Type:</b> Any integer. <b>Default:</b> 0 The number of LionGems this skin costs in the premium user skin shops.
asset_root	<b>Optional.</b> But <b>Required</b> for any skins with custom assets. <b>Type:</b> A <i>folder path</i> relative to the skin directory. <b>Default:</b> No value. The relative path to search for assets for this skin. For example, if the skin directory is <code>skins/obsidian</code> and <code>asset_root</code> is "assets", then assets will be searched under <code>skins/obsidian/assets</code> . If this value is <i>not</i> provided, the skin directory will not be searched for assets.
PATH	<b>Optional.</b> Generally not required. <b>Type:</b> A list of folder paths relative to the skin directory. <b>Default:</b> No value. Extra paths to search for assets, similar to <code>asset_root</code> . These will be searched in <i>descending</i> order, so assets found in the end of the PATH will be used before assets found in the start of the PATH. <code>asset_root</code> will always be searched <i>first</i> , if provided.
parents	<b>Required</b> for usable skins. <b>Optional</b> for abstract skins. <b>Type:</b> A list of <code>skin_id</code> 's, as specified in the top-level <code>skins.json</code> . <b>Default:</b> No value. A list of skins that this skin should <i>inherit</i> its card properties and assets from. If an asset or property is not found in this skin, the <i>parent</i> skins will be searched, with the last provided skin being searched first. This allows for a collection of skins to share a common set of default properties or assets (given in a shared parent). All usable skins should inherit from <code>base</code> , as this skin provides the common masks and other default assets. Abstract skins (only intended to be used as shared parents to provide a common collection of defaults), generally should not inherit from <code>base</code> .
properties	<b>Required.</b> All skins must have this field, although it may be empty. This is a map of <code>card_id</code> -> <code>card_properties</code> . See Chapter 2 for a detailed description of available card properties. All cards and properties are <i>optional</i> , and if given will override any values provided in the parents, or the default. This includes colour codes, asset paths, and spaces. These properties are not required to actually exist on the card, so beware of typos! The special card id "common", if given, specifies common values for <i>all</i> cards.

## **1.4 A note on Card Inheritance**

## **1.5 A note on Skin Inheritance**

# Chapter 2

## Cards

### 2.1 Structure

A card skin is comprised of *properties*, described in the `skin.json` file, and *assets*, which are images placed in the "`asset-root`" used either directly as components of the card (e.g. the background), or as masks describing information *about* components of the card.

All properties and assets are optional, and if not provided, will default to the values in the base skin (see also the "`parents`" field of the `skin.json` file.). Thus, a skin only needs to provide the properties and assets which it needs to *change* from the default values.

This chapter will describe the modifiable properties and assets of each card in detail, and attempt to display where they appear on the rendered card and what requirements they have in a skin.

As usual, please see the Appendix for a complete annotated skin example, where each asset and property is hyperlinked back to the detailed descriptions in this chapter.

#### 2.1.1 Properties

The following types of properties may be customised for each card.

- *Colour Properties*. These are colours for various components of the card, and should be specified as either RGB or RGBA hex values, e.g. "#A3A5F3" or "#A3A5F380", with the latter describing an alpha channel value of 128 out of 256, and hence 50% opacity.

In the below specification, each colour property is given with its key (for the `skin.json` file), a brief description, and an "In Context" card which is typically the default version of the card rendered with sample arguments, where the colour has been replaced with a highlight colour (usually some shade of red).

- *Asset Paths*. Each included asset lives at a particular location.

When including an asset in a skin, it should usually be placed at its *default path*, that is, the path of the asset in the default skin.

However, this path may be customised in the `skin.json` file by giving the new path (relative to the "`asset_root`") as a value to the *asset path key*. This is useful in several cases, e.g. to avoid duplicating assets which are the same in the new skin, but have different default paths.

In the below specification, each *Asset* is shown with a brief description, its specific requirements, the default image, default path, and default size. New assets should generally match the default size wherever possible, but most assets (not including masks!) allow some variability.

If a new path is *not* specified in the `skin.json` file, any new assets should be placed in relative *default path* stated in the properties.

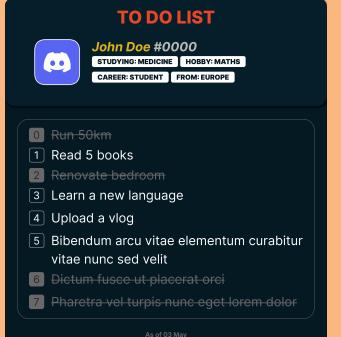
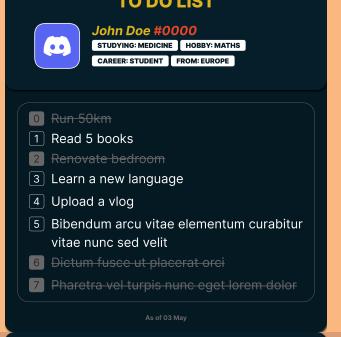
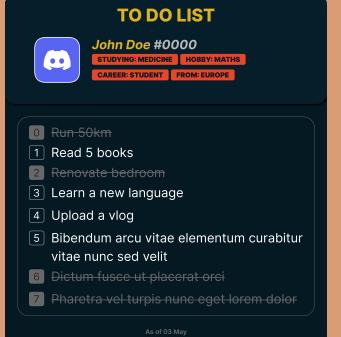
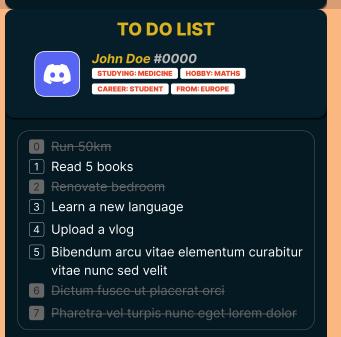
- *Spacing Properties*. In some cases it is desirable for a skin to have a slightly different layout than usual, perhaps to accommodate a differently sized asset (e.g. a new avatar border, or custom ends on the profile badges), or simply to provide a new appearance.

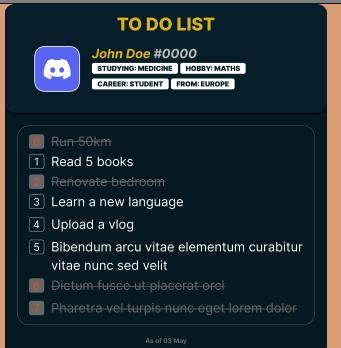
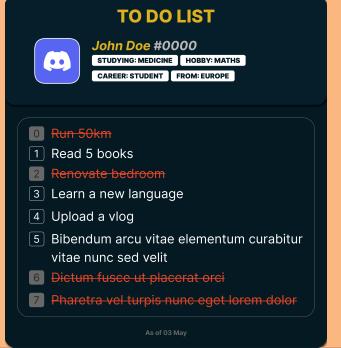
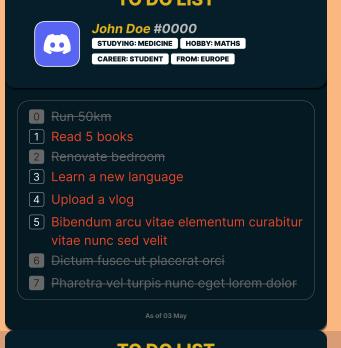
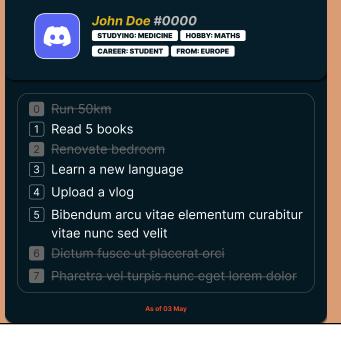
In this case, there are many spacing properties that may be overridden to fine-tune the gaps and separators in the rendered card.

*To be completed – these properties are available, but I haven't written the specification for them yet.*

## 2.2 Tasklist

### 2.2.1 Colour Properties

Property key	Description	In Context
title_colour	Colour of the first page card title.	 <p>TO DO LIST John Doe #0000 STUDYING: MEDICINE   HOBBY: MATHS CAREER: STUDENT   FROM: EUROPE</p> <ul style="list-style-type: none"> <li>① Run-50km</li> <li>② Read 5 books</li> <li>③ Renovate-bedroom</li> <li>④ Learn a new language</li> <li>⑤ Bibendum arcu vitae elementum curabitur vitae nunc sed velit</li> <li>⑥ Dictum fusce ut placerat orci</li> <li>⑦ Pharetra vel turpis nunc eget lorem dolor</li> </ul> <p>As of 05 May</p>
mini_profile_name_colour	Colour of the user name on the first page profile.	 <p>TO DO LIST John Doe #0000 STUDYING: MEDICINE   HOBBY: MATHS CAREER: STUDENT   FROM: EUROPE</p> <ul style="list-style-type: none"> <li>① Run-50km</li> <li>② Read 5 books</li> <li>③ Renovate-bedroom</li> <li>④ Learn a new language</li> <li>⑤ Bibendum arcu vitae elementum curabitur vitae nunc sed velit</li> <li>⑥ Dictum fusce ut placerat orci</li> <li>⑦ Pharetra vel turpis nunc eget lorem dolor</li> </ul> <p>As of 05 May</p>
mini_profile_discrim_colour	Colour of the discriminator on the first page profile.	 <p>TO DO LIST John Doe #0000 STUDYING: MEDICINE   HOBBY: MATHS CAREER: STUDENT   FROM: EUROPE</p> <ul style="list-style-type: none"> <li>① Run-50km</li> <li>② Read 5 books</li> <li>③ Renovate-bedroom</li> <li>④ Learn a new language</li> <li>⑤ Bibendum arcu vitae elementum curabitur vitae nunc sed velit</li> <li>⑥ Dictum fusce ut placerat orci</li> <li>⑦ Pharetra vel turpis nunc eget lorem dolor</li> </ul> <p>As of 05 May</p>
mini_profile_badge_colour	Colour of the badge background on the first page profile.	 <p>TO DO LIST John Doe #0000 STUDYING: MEDICINE   HOBBY: MATHS CAREER: STUDENT   FROM: EUROPE</p> <ul style="list-style-type: none"> <li>① Run-50km</li> <li>② Read 5 books</li> <li>③ Renovate-bedroom</li> <li>④ Learn a new language</li> <li>⑤ Bibendum arcu vitae elementum curabitur vitae nunc sed velit</li> <li>⑥ Dictum fusce ut placerat orci</li> <li>⑦ Pharetra vel turpis nunc eget lorem dolor</li> </ul> <p>As of 05 May</p>
mini_profile_badge_text_colour	Colour of the badge background on the first page profile.	 <p>TO DO LIST John Doe #0000 STUDYING: MEDICINE   HOBBY: MATHS CAREER: STUDENT   FROM: EUROPE</p> <ul style="list-style-type: none"> <li>① Run-50km</li> <li>② Read 5 books</li> <li>③ Renovate-bedroom</li> <li>④ Learn a new language</li> <li>⑤ Bibendum arcu vitae elementum curabitur vitae nunc sed velit</li> <li>⑥ Dictum fusce ut placerat orci</li> <li>⑦ Pharetra vel turpis nunc eget lorem dolor</li> </ul> <p>As of 05 May</p>

Property key	Description	In Context
task_done_number_colour	Colour of the number text for completed tasks.	
task_done_text_colour	Colour of the task text for completed tasks.	
task_undone_number_colour	Colour of the number text for incomplete tasks.	
task_undone_text_colour	Colour of the task text for incomplete tasks.	
footer_colour	Colour of the footer on each page.	

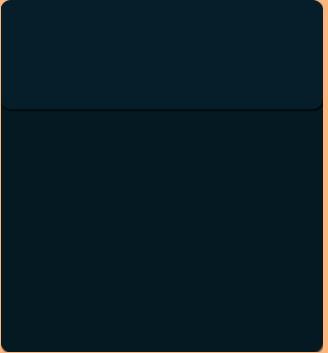
## 2.2.2 Spacing Properties

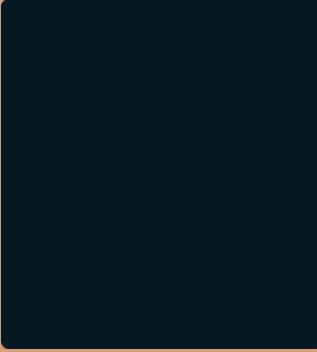
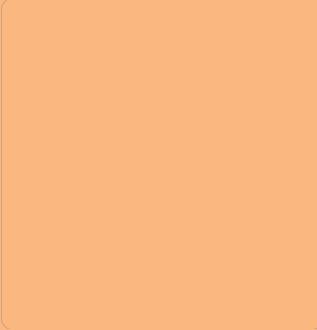
- title\_pre\_gap

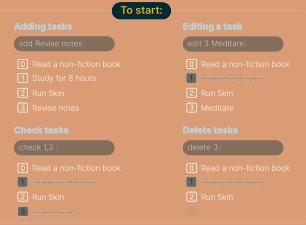
- title\_gap
- mini\_profile\_indent
- mini\_profile\_avatar\_sep
- mini\_profile\_name\_gap
- mini\_profile\_badge\_gap
- mini\_profile\_badge\_min\_sep
- task\_done\_line\_width
- task\_num\_sep
- task\_inter\_gap
- task\_intra\_gap
- footer\_pre\_gap
- footer\_gap

### 2.2.3 String Properties

### 2.2.4 Assets

Asset Path Key	Properties
first_page_bg	<p>Background of the first tasklist page.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b></p>  <p><b>Default Size</b> 2778x3035  <b>Default Path</b> tasklist/first_page_background.png</p>
first_page_frame	<p>Frame displayed around tasks on the first page.</p> <p><b>Requirements</b> Must have a size compatible with the provided first_page_bg.</p> <p><b>Default Asset</b></p>  <p><b>Default Size</b> 2564x1719  <b>Default Path</b> tasklist/first_page_frame.png</p>
mini_profile_avatar_frame	Frame displayed around the avatar on the first page profile.

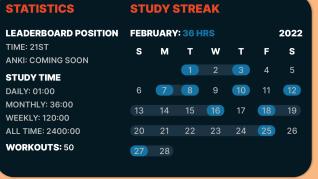
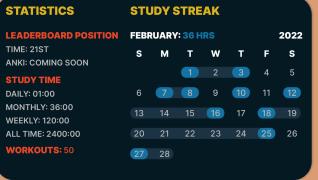
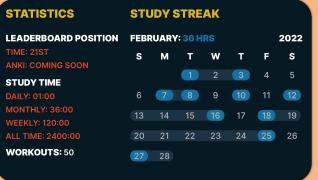
Asset Path Key	Properties	
	<b>Requirements</b>	Must be as close as possible to the default size. Small variations are allowed, but may require spacing property modification.
	<b>Default Asset</b>	
	<b>Default Size</b>	264x264
	<b>Default Path</b>	mini-profile/avatar_frame.png
other_page_bg	Background of the second and further tasklist pages. <b>Requirements</b> Should be close to or the same size as first_page_bg.	
	<b>Default Asset</b>	
	<b>Default Size</b>	2778x3035
	<b>Default Path</b>	tasklist/other_page_background.png
other_page_frame	Frame displayed around tasks on the second and further pages. <b>Requirements</b> Must have a size compatible with the provided other_page_bg.	
	<b>Default Asset</b>	
	<b>Default Size</b>	2564x2641
	<b>Default Path</b>	tasklist/other_page_frame.png
task_done_number_bg	Task number background for completed tasks. <b>Requirements</b> No special requirements.	
	<b>Default Asset</b>	
	<b>Default Size</b>	131x124

Asset Path Key	Properties
	<p><b>Default Path</b> tasklist/task_done_bg.png</p>
task undone number bg	<p>Task number background for incomplete tasks.</p> <p><b>Requirements</b> Assumed to have the same size as the task_done_number_bg.</p> <p><b>Default Asset</b> </p>
help_frame	<p>The image to place on the first page tasklist when there are no tasks to display. Intended to assist the user in using the associated user interface.</p> <p><b>Requirements</b> Should have the same size as the first_page_frame, which it replaces, but small variations are acceptable.</p> <p><b>Default Asset</b> </p> <p><b>Default Size</b> 131x124</p> <p><b>Default Path</b> tasklist/task undone_bg.png</p>

## 2.2.5 Mask Assets

## 2.3 Stats

### 2.3.1 Colour Properties

Property key	Description	In Context
header_colour	Colour of the two card headers.	
stats_subheader_colour	Colour of the subheaders in the first column.	
stats_text_colour	Colour of the other text in the first column.	

Property key	Description	In Context
col2_date_colour	Colour of the top month and year text in the second column.	
col2_hours_colour	Colour of the total hours this month text in the second column.	
cal_weekday_colour	Colour of the weekdays shown over the calendar.	
cal_number_colour	Colour of the day numbers on the calendar, not including days at the end of streaks.	
cal_number_end_colour	Colour of the day numbers on the calendar at the end of streaks.	
cal_streak_middle_colour	Streak highlight colour shown over middle streak days on the calendar.	
cal_streak_end_colour	Colour of the highlight placed over the end days of streaks.	

### 2.3.2 Spacing Properties

### 2.3.3 String Properties

### 2.3.4 Assets

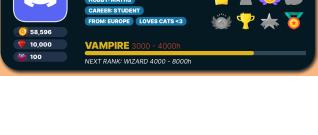
Asset Path Key	Properties
background	<p>Stats card background.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b></p>

Asset Path Key	Properties	
	<b>Default Size</b>	1528x896
	<b>Default Path</b>	stats/background.png

### 2.3.5 Mask Assets

## 2.4 Profile

### 2.4.1 Colour Properties

Property key	Description	In Context
header_colour_1	Colour of the user name in the card header.	
header_colour_2	Colour of the discriminator in the card header.	
counter_bg_colour	Colour of the coin/gem/gift background highlight.	
counter_colour	Colour of the coin/gem/gift counter text.	
subheader_colour	Colour of the two card subheaders.	
badge_text_colour	Colour of the text on the profile badges.	
badge_blob_colour	Colour of the profile badge backgrounds.	
rank_name_colour	Colour of the current rank name.	
rank_hours_colour	Colour of the required hours shown for the current rank.	

Property key	Description	In Context
bar_full_colour	Colour of the filled progress bar. (May be overridden with a background asset for e.g. gradients.)	
bar_empty_colour	Colour of the progress bar background, or the empty progress bar. (May be overridden with a background asset for e.g. gradients.)	
next_rank_colour	Colour of the next rank text displayed under the progress bar.	

## 2.4.2 Spacing Properties

## 2.4.3 String Properties

## 2.4.4 Assets

Asset Path Key	Properties
background	<p>Profile card background.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b> </p> <p><b>Default Size</b> 1537x709  <b>Default Path</b> profile/background.png</p>
avatar_outline	<p>Avatar border. This asset may also be affected or specified by user properties. Note the specific size requirements.</p> <p>The avatar is first masked (using <code>avatar_mask</code>), then placed <i>behind</i> on this asset image, with matching centres. Transparency and size choices should take into account the mask.</p> <p>If the mask is significantly larger than the default, the relevant spacing properties should also be modified to preserve the aesthetics of the first profile card column.</p> <p><b>Requirements</b> Inner dimensions must accommodate a 256 × 256 masked avatar.  Asset dimensions should be as close as possible to the default dimensions.</p> <p><b>Default Asset</b> </p> <p><b>Default Size</b> 264x264  <b>Default Path</b> profile/avatar_outline.png</p>
coin_icon	<p>Icon for the coin counter.</p> <p>This image is centred in the <code>counter_background</code> blob, and should be padded, trimmed, or aligned so the asset centre matches the visual centre.</p>

Asset Path Key	Properties	
	<b>Requirements</b>	Must be smaller than the counter background, and have aligned image centre.
	<b>Default Asset</b>	
	<b>Default Size</b>	89x90
	<b>Default Path</b>	icons/coin.png
gem_icon	Icon for the gem counter. This image is centred in the counter_background blob, and should be padded, trimmed, or aligned so the asset centre matches the visual centre.	
	<b>Requirements</b>	Must be smaller than the counter background, and have aligned image centre.
	<b>Default Asset</b>	
	<b>Default Size</b>	39x38
	<b>Default Path</b>	icons/gem.png
gift_icon	Icon for the gift counter. This image is centred in the counter_background blob, and should be padded, trimmed, or aligned so the asset centre matches the visual centre.	
	<b>Requirements</b>	Must be smaller than the counter background, and have aligned image centre.
	<b>Default Asset</b>	
	<b>Default Size</b>	75x75
	<b>Default Path</b>	icons/gift.png
achievements_active	Relative path (from the asset root) to the folder where the active achievement icons are stored. Each icon is pasted in the centre of a $115 \times 96$ (at 150 DPI) pixel box, which is then placed on a $2 \times 8$ grid. The dimensions of the icons should take this into consideration, with the visual centres of the icons matching the image centre where possible.	
	<b>Requirements</b>	If this is provided, <i>all</i> the active achievement icons <i>must</i> appear in this folder, and they <i>must</i> be labelled from 1.png to 8.png in the (right to left, top to bottom) order they should appear on the card. For optimal appearance, each icon should have matching visual and actual centre, and should not have dimensions exceeding $115 \times 96$ .
	<b>Default Assets</b>	

Asset Path Key	Properties
	<b>Default Size</b> 75 × 77    63 × 96    115 × 74    86 × 83 98 × 77    85 × 83    93 × 78    91 × 83 <b>Default Path</b> profile/achievements_active/
achievements_inactive	<p>Relative path (from the asset root) to the folder where the inactive achievement icons are stored.</p> <p>Each icon is pasted in the centre of a 115 × 96 (at 150 DPI) pixel box, which is then placed on a 2 × 8 grid. The dimensions of the icons should take this into consideration, with the visual centres of the icons matching the image centre where possible.</p> <p><b>Requirements</b> If this is provided, <i>all</i> the inactive achievement icons <i>must</i> appear in this folder, and they <i>must</i> be labelled from 1.png to 8.png in the (right to left, top to bottom) order they should appear on the card.</p> <p>For optimal appearance, each icon should have matching visual and actual centre, and should not have dimensions exceeding 115 × 96.</p> <p><b>Default Assets</b></p> 
	<b>Default Size</b> 75 × 77    63 × 96    115 × 74    86 × 83 98 × 77    85 × 83    93 × 78    91 × 83 <b>Default Path</b> profile/achievements_inactive/

To add: optional bar\_full and bar\_empty assets. Need to create samples for these from mask and colour.

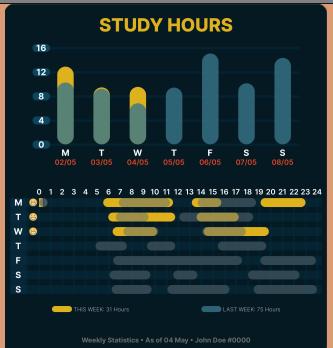
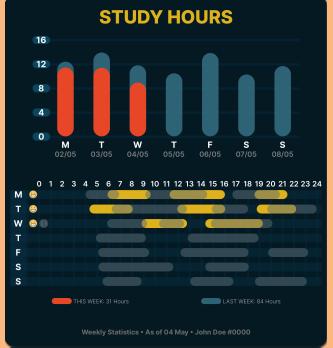
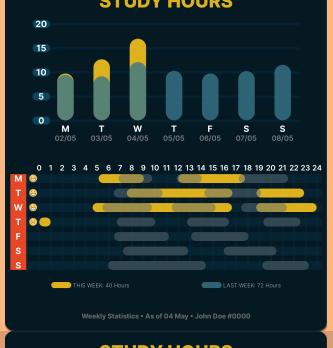
## 2.4.5 Mask Assets

## 2.5 Weekly Stats

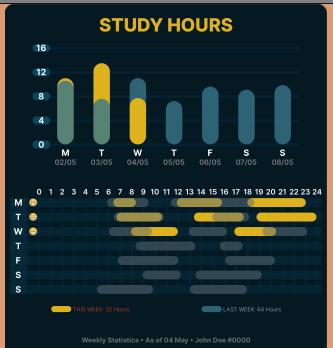
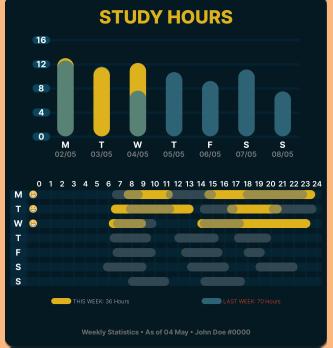
**Note:** The weekly stats card is special in that it was initially exported at 72 pixels per inch instead of 150 pixels per inch that the rest of the cards use. All sizes and assets for this card must therefore also be in this print resolution, making the weekly card unable to share any assets with other cards. Note that this does not apply to spacing properties, since they are always given in 72 PPI, and are manually scaled for cards at higher resolutions. Since the weekly stats card can essentially only share the background asset, this should normally not be an issue, but be aware that this difference may be removed in a future update.

### 2.5.1 Colour Properties

Property key	Description	In Context
title_colour	Colour of the weekly stats card title.	
top_hours_colour	Colour of the hour axis label text on the top graph.	
top_hours_bg_colour	Colour of the hour axis label background on the top graph.	
top_line_colour	Colour of the horizontal lines on the top graph.	
top_weekday_colour	Colour of the weekdays in the top graph weekday axis labels.	

Property key	Description	In Context
top_date_colour	Colour of the dates in the top graph weekday axis labels.	
top_this_colour	Fill colour representing the current week's hours on the top graph, and the bottom legend.	
top_last_colour	Fill colour representing the last week's hours on the top graph, and the bottom legend. Usually transparent.	
btm_weekly_background_colour	Colour of the weekday axis background on the bottom graph.	
btm_bar_horiz_colour	Colour of the horizontal background bars representing days on the bottom graph.	

Property key	Description	In Context
btm_bar_vert_colour	Colour of the vertical background bars representing hours on the bottom graph.	
btm_weekday_colour	Colour of the weekday axis text on the bottom graph.	
btm_day_colour	Colour of the hour axis text on the bottom graph.	
btm_this_colour	Colour representing the current week's hours on the bottom graph.	
btm_last_colour	Colour representing the last week's hours on the bottom graph. Usually transparent.	

Property key	Description	In Context
this_week_colour	Colour of the legend text for this week.	
last_week_colour	Colour of the legend text for last week.	
footer_colour	Colour of the footer text.	

## 2.5.2 Spacing Properties

## 2.5.3 String Properties

## 2.5.4 Assets

Asset Path Key	Properties
background	<p>Weekly stats card background.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b></p>  <p><b>Default Size</b> 1334x1458 (72 PPI)</p>

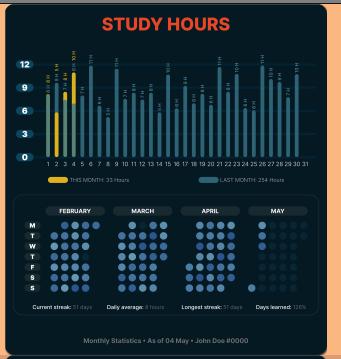
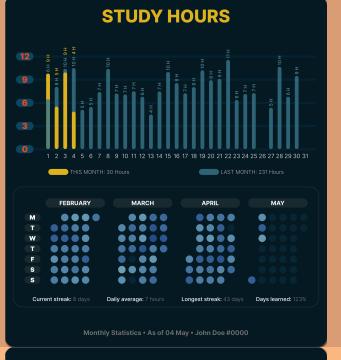
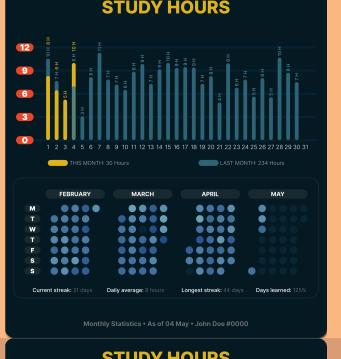
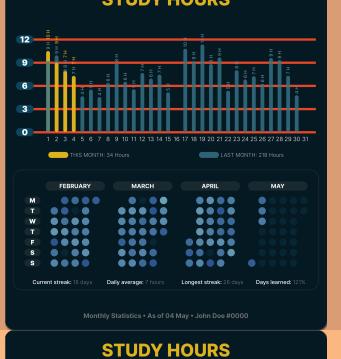
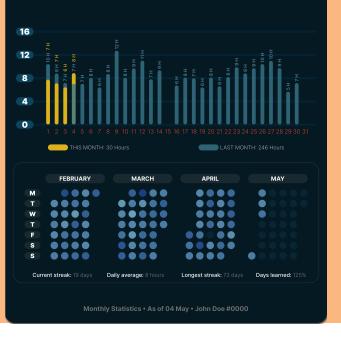
Asset Path Key	Properties							
	<b>Default Path</b>		weekly/background.png					
btm_emoji_path	<p>Relative path (from the asset root) to the folder where the five bottom graph daily rating emojis are stored.</p> <p>These emojis are placed on the card without modification next to the horizontal day bar on the bottom graph to indicate relative performance (by total hour count relative to average) in that day.</p>							
	<p><b>Requirements</b> If the path property is modified, all five of the rating emojis <i>must</i> be appear in the folder, or in the same relative location in some parent skin. If the path property is <i>not</i> modified, the emojis may be individually overridden by supplying a file of the correct name in the correct location, similarly to regular assets.</p> <p>Supplied emojis <i>must</i> have the same names as the default emojis.</p> <p>Supplied emojis <i>should</i> have approximately the same size as the default emojis, since they are not resized before being placed on the card.</p>							
	 shocked.png  sad.png  neutral.png  happy.png  very_happy.png							
	<p><b>Default Assets</b></p> <p><b>Default Sizes</b> 34 × 34 34 × 35 34 × 35 34 × 35 34 × 34</p> <p><b>Default Path</b> weekly/emojis</p>							

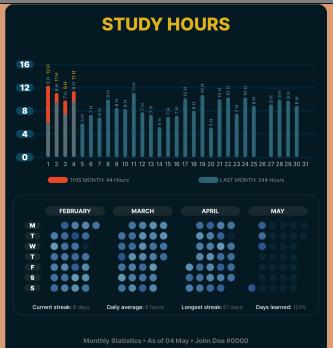
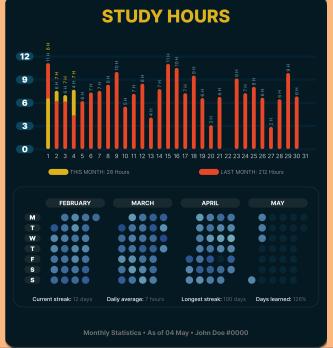
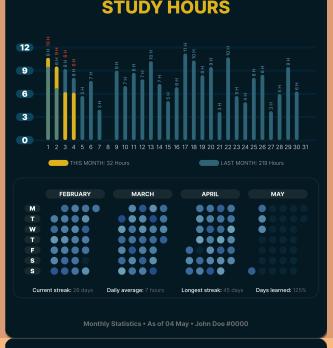
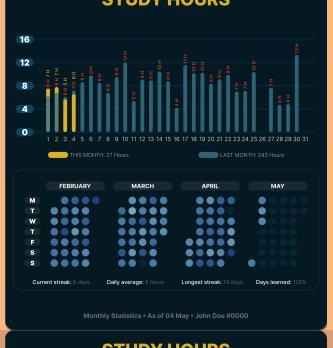
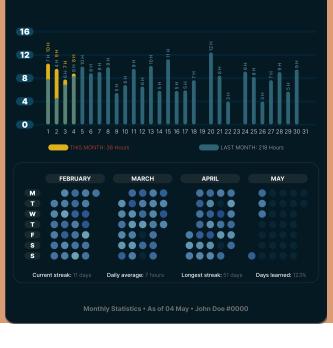
To add: optional top\_hours\_bg, top\_this\_bar\_full, top\_last\_bar\_full, btm\_this\_end, btm\_last\_end, this\_week\_image, last\_week\_image blob assets. Need to create samples for these from mask and colour.

## 2.5.5 Mask Assets

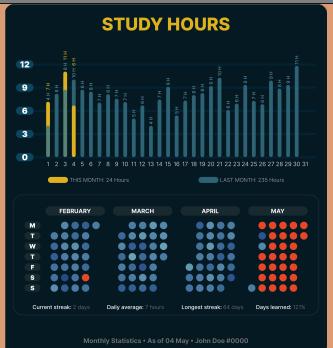
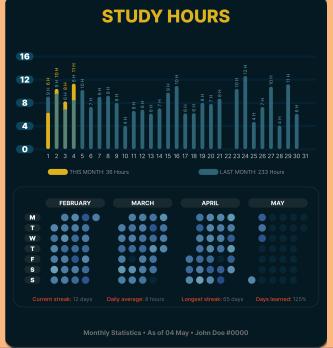
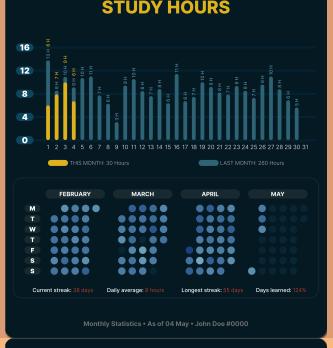
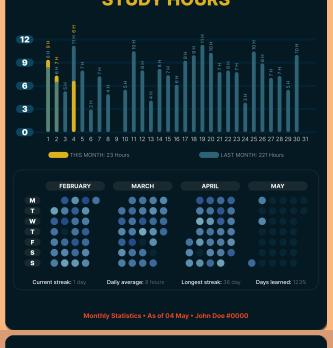
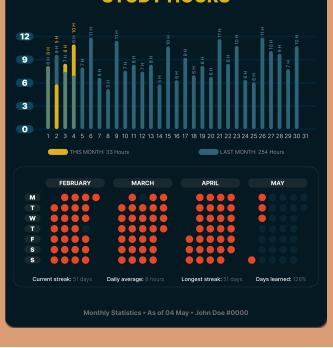
## 2.6 Monthly Stats

### 2.6.1 Colour Properties

Property key	Description	In Context
title_colour	Colour of the card title text.	
top_hours_colour	Colour of the hour axis label text on the top graph.	
top_hours_bg_colour	Colour of the hour axis label background on the top graph.	
top_line_colour	Colour of the horizontal lines on the top graph.	
top_date_colour	Colour of the day axis label text on the top graph.	

Property key	Description	In Context
top_this_colour	Fill colour representing this month's hours on the top graph, and the legend.	
top_last_colour	Fill colour representing last month's hours on the top graph, and the legend. Often transparent.	
top_this_hours_colour	Text colour for the number of hours studied each day of this month, printed above each bar on the top graph.	
top_last_hours_colour	Text colour for the number of hours studied each day of last month, printed above each bar on the top graph.	
this_month_colour	This month's text colour in the graph legend.	

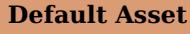
Property key	Description	In Context
last_month_colour	Last month's text colour in the graph legend.	
weekday_background_colour	Colour of the weekday axis label background on the bottom heatmap.	
weekday_colour	Colour of the weekday axis label text on the bottom heatmap.	
month_background_colour	Colour of the month axis label background on the bottom heatmap.	
month_colour	Colour of the month axis label text on the bottom heatmap.	

Property key	Description	In Context
heatmap_empty_colour	Colour used in the heatmap when no study occurred on that day.	
stats_key_colour	Text colour of the summary statistic names printed below the heatmap.	
stats_value_colour	Text colour of the summary statistic values printed below the heatmap.	
footer_colour	Text colour of the card footer.	
heatmap_colours	<p>List of colours used in the heatmap to represent relative study amounts for each day. This list may be of any positive length.</p> <p>To choose a colour for a given day, the user's average all-time hours/day is calculated, then the number of hours for that day is placed on a scale from 0 (non-inclusive) to twice their average (any excess time over twice their average is ignored). A colour is then chosen from the same position on the list of colours as the day's hours on the hour scale.</p>	

## 2.6.2 Spacing Properties

## 2.6.3 String Properties

## 2.6.4 Assets

Asset Path Key	Properties
background	<p>Monthly stats card background.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b></p>  <p><b>Default Size</b> 2779x3036  <b>Default Path</b> monthly/background.png</p>
bottom_frame	<p>Thin bottom frame surrounding the heatmap.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b></p>  <p><b>Default Size</b> 2645x1041  <b>Default Path</b> monthly/bottom_frame.png</p>

To add: Lots of optional blob assets and masks supporting custom blob and bar backgrounds.

## 2.6.5 Mask Assets

## 2.7 Weekly Goals

### 2.7.1 Colour Properties

Property key	Description	In Context
title_colour	Text colour of the card title.	

Property key	Description	In Context
mini_profile_name_colour	Colour of the user name in the mini-profile.	
mini_profile_discrim_colour	Colour of the user discriminator in the mini-profile.	
mini_profile_badge_colour	Colour of the mini-profile badge backgrounds.	
mini_profile_badge_text_col	Colour of the mini-profile badge text.	
progress_bg_colour	Background/unfilled colour of the circular progress bars.	

Property key	Description	In Context
progress_colour	Foreground/filled colour of the circular progress bars.	
task_count_colour	Colour of the number of tasks complete.	
task_done_colour	Colour of the "tasks_done" text.	
task_goal_colour	Colour of the task "Goal" text.	
task_goal_number_colour	Text colour for the numerical task goal.	

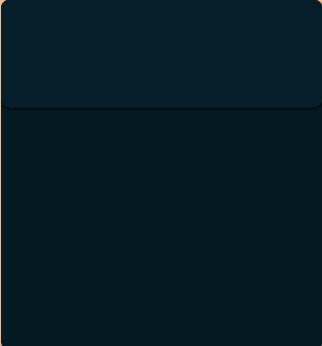
Property key	Description	In Context
studied_text_colour	Colour of the default text on the "Studied" progress bar.	
studied_hour_colour	Colour of the progress text on the "Studied" progress bar.	
attendance_rate_colour	Colour of the attendance rate on the "attendance" bar.	
attendance_colour	Colour of the text on the "attendance" bar.	
task_header_colour	Colour of the subheader over the textual goals section.	

Property key	Description	In Context
task_done_number_colour	Text colour of the number for completed textual goals.	
task_done_text_colour	Text colour of the text for completed textual goals.	
task_undone_number_colour	Text colour of the number for incomplete textual goals.	
task_undone_text_colour	Text colour of the text for incomplete textual goals.	
footer_colour	Text colour of the card footer.	

## 2.7.2 Spacing Properties

## 2.7.3 String Properties

## 2.7.4 Assets

Asset Path Key	Properties
background	<p>Goal page background.</p> <p><b>Requirements</b> Must have approximately the same dimensions as the default.</p> <p><b>Default Asset</b></p> 
task_frame	<p>Frame displayed around the textual goals on the bottom of the card.</p> <p><b>Requirements</b> Must have a size compatible with the provided background. Should be similar to the default.</p> <p><b>Default Asset</b></p> 
mini_profile_avatar_frame	<p>Frame displayed around the avatar on the miniature user profile.</p> <p><b>Requirements</b> Must be as close as possible to the default size. Small variations are allowed, but may require spacing property modification.</p> <p><b>Default Asset</b></p> 
task_done_number_bg	<p>Task number background for completed textual goals.</p> <p><b>Requirements</b> No special requirements.</p> <p><b>Default Asset</b></p> 

Asset Path Key	Properties
	<p><b>Default Size</b> 91x87  <b>Default Path</b> goals/task_done.png</p>
task undone number_bg	<p>Task number background for incomplete textual goals.</p> <p><b>Requirements</b> Assumed to have the same size as the task_done_number_bg.</p> <p><b>Default Asset</b></p> 
help_frame	<p>The image to place under the miniature profile when there are no tasks to display. Intended to assist the user in using the associated user interface.</p> <p><b>Requirements</b> Must be compatible with the provided background, and should be similar to the default size.</p> <p><b>Default Asset</b></p>  <p><b>Default Size</b> 2443x1808  <b>Default Path</b> weekly/help_frame.png</p>

## 2.7.5 Mask Assets

## 2.8 Monthly Goals

The Monthly Goals card is identical to the Weekly Goals card described above, apart from the default values of the title text, task header text, and help frame asset, given below. We do not repeat the properties to avoid needless redundancy, please refer to the weekly goal properties instead.

In general, skins implementing a goal skin should write the properties into a common (abstract) field (called e.g. "\_goals" as in the example given in the appendix), and then use the "parents" card property to inherit the common properties from the abstract field. As usual, see the appendix for a worked example. Note that the weekly and monthly goal cards may still be customised separately, they merely have exactly the same layout and property names, and thus will usually share most property values in consistent skins.

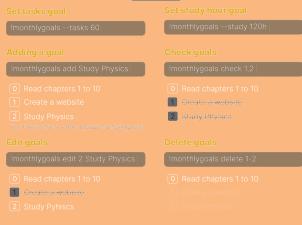
### 2.8.1 Colour Properties

### 2.8.2 Spacing Properties

### 2.8.3 String Properties

### 2.8.4 Assets

Asset Path Key	Properties
help_frame	<p>The image to place under the miniature profile when there are no tasks to display. Intended to assist the user in using the associated user interface.</p> <p><b>Requirements</b> Must be compatible with the provided background, and should be similar to the default size.</p>

Asset Path Key	Properties
	<p><b>To start:</b></p> 
<b>Default Asset</b>	
<b>Default Size</b>	2443x1808
<b>Default Path</b>	monthly/help_frame.png

## 2.8.5 Mask Assets

## 2.9 Leaderboard

Property key	Description	In Context
header_text_colour		
subheader_name_colour		
subheader_value_colour		

Property key	Description	In Context
top_position_colour		
top_name_colour		
top_hours_colour		
entry_position_colour		
entry_position_highlight_col		

Property key	Description	In Context
entry_name_colour		
entry_hours_colour		
entry_bg_colour		
entry_bg_highlight_colour		

### 2.9.1 Colour Properties

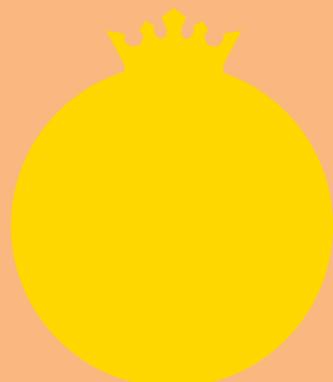
### 2.9.2 Spacing Properties

### 2.9.3 String Properties

### 2.9.4 Assets

Asset Path Key	Properties
first_bg_path	Background of the first leaderboard page, including embedded header.

Asset Path Key	Properties	
	<b>Requirements</b>	The dimensions should be approximately the same as the default background. The header may be shorter or taller, but the corresponding spacing property will need to be modified.
	<b>Default Asset</b>	
	<b>Default Size</b>	2811x3048
	<b>Default Path</b>	leaderboard/first_page_background.png
other_bg_path	Background of the second and further leaderboard pages, with embedded header.	
	<b>Requirements</b>	The dimensions should be approximately the same as the default background. The header may be shorter, taller, or separated more or less from the main card, but the corresponding spacing property will need to be modified.
	<b>Default Asset</b>	
	<b>Default Size</b>	2819x3042
	<b>Default Path</b>	leaderboard/other_page_background.png
first_avatar_bg	The avatar background of the first-ranking user.	
	<b>Requirements</b>	The dimensions of the background must be able to accommodate the $512 \times 512$ masked avatar. If the dimensions differ too significantly from the default, spacing properties will need to be modified.
	<b>Default Asset</b>	
	<b>Default Size</b>	565x664



Asset Path Key	Properties	
	<b>Default Path</b>	leaderboard/first_avatar_background.png
second_avatar_bg	The avatar background of the second-ranking user. <b>Requirements</b>	The dimensions of the background must be able to accommodate the $512 \times 512$ masked avatar. If the dimensions differ too significantly from the default, spacing properties will need to be modified.
	<b>Default Asset</b>	
	<b>Default Size</b>	451x527
	<b>Default Path</b>	leaderboard/second_avatar_background.png
third_avatar_bg	The avatar background of the third-ranking user. <b>Requirements</b>	The dimensions of the background must be able to accommodate the $512 \times 512$ masked avatar. If the dimensions differ too significantly from the default, spacing properties will need to be modified.
	<b>Default Asset</b>	
	<b>Default Size</b>	451x526
	<b>Default Path</b>	leaderboard/third_avatar_background.png

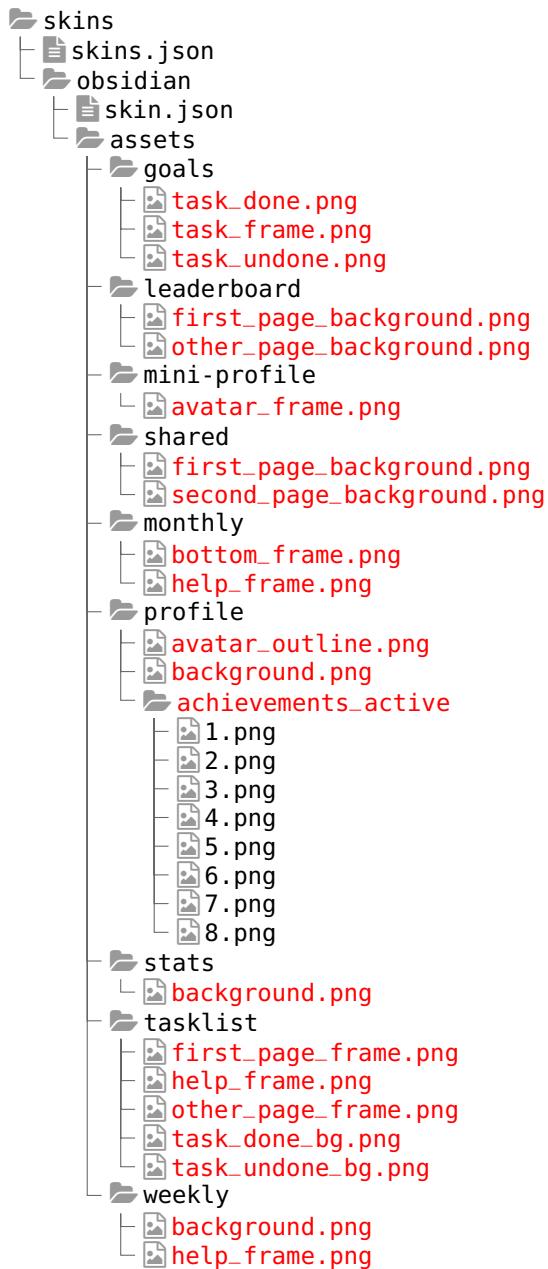
## 2.9.5 Mask Assets

# Appendix A

## Annotated Example: Obsidian

### A.1 Directory Structure

Click on an asset to jump to its description, default, size, and requirements.



## A.2 skin.json file

*Click on a card or property to jump to the corresponding section.*

```

1  {
2      "display_name": "Obsidian",
3      "description": "The Obsidian Skin",
4      "public": true,
5      "price": 2048,
6      "asset_root": "assets",
7      "parents": ["base", "_premium_skin_base"],
8      "properties": {
9          "common": {
10              "mini_profile_badge_colour": "#FFFFFF",
11              "mini_profile_badge_text_colour": "#414A9F",
12              "mini_profile_name_colour": "#8282BF",
13              "mini_profile_discrim_colour": "#B9BABB"
14          },
15          "tasklist": {
16              "first_page_bg": "shared/first_page_background.png",
17              "other_page_bg": "shared/second_page_background.png",
18              "title_colour": "#9A9FCC",
19              "task_done_number_colour": "#7E6FB2",
20              "task_undone_number_colour": "#7E6FB2",
21              "task_done_text_colour": "#515151",
22              "task_undone_text_colour": "#F3F3F3",
23              "footer_colour": "#555671"
24          },
25          "stats": {
26              "header_colour": "#FFFFFF",
27              "stats_subheader_colour": "#9E9E9E",
28              "stats_text_colour": "#757271",
29              "col2_date_colour": "#9E9E9E",
30              "col2_hours_colour": "#FFFFFF",
31              "cal_weekday_colour": "#FFFFFF",
32              "cal_number_colour": "#6E7877",
33              "cal_number_end_colour": "#FFFFFF",
34              "cal_streak_middle_colour": "#54548040",
35              "cal_streak_end_colour": "#545480"
36          },
37          "profile": {
38              "header_colour_1": "#9A9FCD",
39              "header_colour_2": "#B3B6C6",
40              "subheader_colour": "#FFFFFF",
41              "badge_text_colour": "#414A9F",
42              "badge_blob_colour": "#FFFFFF",
43              "rank_name_colour": "#FFFFFF",
44              "rank_hours_colour": "#53504D",
45              "next_rank_colour": "#53504D",
46              "bar_full_colour": "#9A9FCD",
47              "bar_empty_colour": "#9A9FCD4D",
48              "counter_colour": "#95A9D0"
49          },
50          "weekly_stats": {
51              "title_colour": "#9A9FCC",
52              "top_hours_colour": "#E2E2E2",
53              "top_hours_bg_colour": "#555682",
54              "top_line_colour": "#A1ACCD26",

```

---

```

55     "top_weekday_colour": "#9E9E9E",
56     "top_date_colour": "#9E9E9E",
57     "top_this_colour": "#8B9ACD",
58     "top_last_colour": "#3D486F80",
59     "btm_weekday_colour": "#E2E2E2",
60     "btm_weekly_background_colour": "#555682",
61     "btm_bar_horiz_colour": "#2C33466E",
62     "btm_bar_vert_colour": "#2C33465F",
63     "btm_this_colour": "#8B9ACD",
64     "btm_last_colour": "#3D486F80",
65     "btm_day_colour": "#9E9E9E",
66     "this_week_colour": "#8F8F8F",
67     "last_week_colour": "#8F8F8F",
68     "footer_colour": "#555671"
69 },
70 "monthly_stats": {
71     "background": "shared/second_page_background.png",
72     "title_colour": "#9A9FCC",
73     "top_hours_colour": "#E2E2E2",
74     "top_hours_bg_colour": "#555682",
75     "top_line_colour": "#A1ACCD26",
76     "top_date_colour": "#9E9F9F",
77     "top_this_colour": "#8081BE",
78     "top_last_colour": "#8487A073",
79     "top_this_hours_colour": "#8081BE",
80     "top_last_hours_colour": "#E3E2F1",
81     "this_month_colour": "#8F8F8F",
82     "last_month_colour": "#8F8F8F",
83     "weekday_background_colour": "#4B55A5",
84     "weekday_colour": "#E2E2E2",
85     "month_background_colour": "#4B55A5",
86     "month_colour": "#E2E2E2",
87     "stats_key_colour": "#9E9E9E",
88     "stats_value_colour": "#9E9E9E",
89     "footer_colour": "#555671",
90     "heatmap_empty_colour": "#323233",
91     "heatmap_colours": [
92         "#483C7A",
93         "#59519C",
94         "#6B67B8",
95         "#8082D2",
96         "#9AA2EA",
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98         "#9AA2EA",
99         "#9AA2EA",
100        "#A3A5F3",
101        "#B1AEFA",
102        "#C2BBFE",
103        "#D3C9FF",
104        "#E4DAFF",
105        "#F3EDFF"
106    ]
107 },
108 "_goals": {
109     "background": "shared/first_page_background.png",
110     "title_colour": "#9A9FCC",
111     "progress_bg_colour": "#9A9FCC40",
112     "progress_colour": "#8B9ACD",

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113     "attendance_rate_colour": "#9A9FCC",
114     "attendance_colour": "#9E9E9E",
115     "task_count_colour": "#9A9FCC",
116     "task_done_colour": "#9E9E9E",
117     "task_goal_colour": "#9E9E9E",
118     "task_goal_number_colour": "#9E9E9E",
119     "studied_text_colour": "#9E9E9E",
120     "studied_hour_colour": "#9A9FCC",
121     "task_header_colour": "#9A9FCC",
122     "task_done_number_colour": "#7E6FB2",
123     "task undone_number_colour": "#7E6FB2",
124     "task_done_text_colour": "#515151",
125     "task undone_text_colour": "#F5F6F7",
126     "footer_colour": "#555671"
127 },
128 "monthly_goals": {
129   "parents": ["_goals"]
130 },
131 "weekly_goals": {
132   "parents": ["_goals"]
133 },
134 "leaderboard": {
135   "header_text_colour": "#9A9ECE",
136   "subheader_name_colour": "#767372",
137   "subheader_value_colour": "#767372",
138   "top_position_colour": "#BBBBBB",
139   "top_name_colour": "#9A9FCC",
140   "top_hours_colour": "#BBBBBB",
141   "entry_position_colour": "#BBBBBB",
142   "entry_position_highlight_colour": "#BBBBBB",
143   "entry_name_colour": "#9A9FCC",
144   "entry_hours_colour": "#BBBBBB",
145   "entry_bg_colour": "#55568233",
146   "entry_bg_highlight_colour": "#55568273"
147 }
148 }
149 }
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