

## 1. lua palettes

### Note.

Initially, the `@prism` project was created to provide ready-to-use palettes for `luadraw` which is a package that greatly facilitates the creation of high-quality 2D and 3D plots via `LuaLaTeX` and `TikZ`.

### a. Use a lua palette

The `Lua` palette names all use the prefix `pal` followed by the name available in the file `palettes.json`. You can access a palette by three ways.

- `palGistHeat` is a `Lua` variable.
- `getPal('GistHeat')` and `getPal('palGistHeat')` are equal to `palGistHeat`.
- `palNames['palGistHeat']` is equal to `palGistHeat`.

### Note.

The `Lua` palette variables are arrays of arrays of three floats. The definition of `palGistHeat` looks like the following partial code.

```
palGistHeat = {  
    {0.0, 0.0, 0.0},  
    {0.105882, 0.0, 0.0},  
    {0.211764, 0.0, 0.0},  
    -- ... With 7 more RGB colors.  
}
```

The `getPal` function has some options. To explain how this works, let's consider the following use case.

```
mypal = getPal(  
    'GistHeat',  
    {  
        extract = {2, 5, 8, 9},  
        shift   = 1,  
        reverse = true  
    }  
)
```

To simplify the explanations, we will refer to the colors in the standard palette '`GistHeat`' as `coul_1`, `coul_2`, etc. The options are then **processed in the following order**.

1. `{coul_2, coul_5, coul_8, coul_9}` is the result of the extraction.
2. `{coul_9, coul_2, coul_5, coul_8}` comes from the shifting applied to the extracted palette (colors move to the right if `shift` is positive).
3. `{coul_8, coul_5, coul_2, coul_9}` is the reversed version of the shifted palette.

### Note.

The reversed version of any palette can be obtained using `getPal(palname, {reverse = true})`.