

***** 进度文档 *****

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第三周-第四周（9.22-9.26）了解了项目中src文件夹各部分内容的作用

src

存放了Plotly绘图库的js源代码

assets	1.41.0	12 days ago
components	Merge pull request #2978 from plotly/scatter-layer-order	13 days ago
constants	Merge branch 'master' into stacked-area	17 days ago
css	fix: tooltip misplaced	3 months ago
fonts	Merge branch 'master' into rescatter-squashed	9 months ago
lib	Merge pull request #2986 from plotly/webgl-oncontext-loss	13 days ago
plot_api	Merge pull request #2974 from plotly/2969-responsive-charts	17 days ago
plots	Merge pull request #2850 from plotly/missing-fulldata	12 days ago
snapshot	fix Plotly.downloadImage when passing figure objects	a month ago
traces	Merge pull request #2850 from plotly/missing-fulldata	12 days ago
transforms	protect against non-numeric in change function	3 months ago
.eslintrc	eslint: define Promise and TypedArray globals in root rc file	2 years ago
core.js	1.41.0	12 days ago
locale-en-us.js	update 2017 -> 2018	9 months ago
locale-en.js	Added missing 'Saturday' string to locale-en	6 months ago
registry.js	replace Registry.call(", []") with Registry.call(", ...[]")	7 months ago

1 assets

里面只有一个js文件，寥寥数行代码，似乎是写版本号的地方

```
// package version injected by `npm run preprocess`
exports.version = '1.41.0';
```

2 components

- plotly是一个绘图的js库，所以components这个文件夹下是给出了该库所能绘制的各种图形效果

■ annotations	improve concatExtremes perf	2 months ago
■ annotations3d	add template attributes to array containers	3 months ago
■ calendars	a few small tweaks	8 months ago
■ color	update 2017 -> 2018	9 months ago
■ colorbar	fix the underlying problem that led to #970	a month ago
■ colorscale	fix dftl -> dflt typos	2 months ago
■ dragelement	fix #2598 - sloppy click on cartesian zoom	4 months ago
■ drawing	fix dynamic contour ordering and multi-heatmap-contour plots	2 months ago
■ errorbars	stacked area charts!	24 days ago
■ fx	Simplify clickmode / hovermode coercion code [1852]	17 days ago
■ grid	templates - big commit implementing most of it, coerce-level integration	3 months ago
■ images	add template attributes to array containers	3 months ago
■ legend	Merge pull request #2978 from plotly/scatter-layer-order	14 days ago
■ modebar	remove legacy toggleSpikelines hack	3 months ago
■ rangeselector	add template attributes to array containers	3 months ago
■ rangeslider	✎ ax_min / ax_max logic for rangeslider	2 months ago
■ shapes	improve concatExtremes perf	2 months ago
■ sliders	fix test failures - and simplify handleArrayContainerDefaults even more	3 months ago
■ titles	replace selectAll().data([0]) with ensureSingle(ById)	6 months ago
■ updatemenus	template-safe GUI editing of array objects	3 months ago

2.1 annotations (标记/图形)

📄 arrow_paths.js
📄 attributes.js
📄 calc_autorange.js
📄 click.js
📄 common_defaults.js
📄 convert_coords.js
📄 defaults.js
📄 draw.js
📄 draw_arrow_head.js
📄 index.js

- arrow_path.js: 一些标记的实现: 箭头 (arrow), 圆圈(Circle), 方形(square)... , 代码量只有数十行, 但是应该是定义了Plotly的所有图形类型
- attributes.js: 应该是实现各种标记的特效的地方——即可以更改各种标记的属性: size, color, opacity, alignment, border, etc..

```
// find the bounding boxes for each of these annotations'
// relative to their anchor points
// use the arrow and the text bg rectangle,
// as the whole anno may include hidden text in its bbox
```

- cal_autorange.js: (这是代码中对于该文件的注释) 我的理解是, 这个js文件根据每个annotation的锚点, 确定它们的边框、轮廓, 以进行图形的绘制
- click.js: 鼠标点击事件所产生的特效
- common_defaults.js: 各种annotation的默认效果
- convert_coords.js: 图形(annotations)坐标系转换的处理算法
- defaults.js: 还是默认效果..感觉和common_defaults作用很类似
- draw.js: 这里应该是各种标记的呈现层了, 相当于MVC中的View了; 具体地实现了各种标记怎么显示
- draw_arrow_head.js: 这里应该是“箭头”这个元素的呈现层了 (虽然不知道为什么要把箭头的实现给单独分离出来)
- index.js: 定义annotations这个模块在所有components中的一个所处角色以及可能与其他模块所存在的关系

2.2 annotations3d

对三维标记的实现及特效实现, 与annotation模块类似, 功能更少, 不做赘述

2.3 calendars

似乎是导入了不同地区的日历 (内容很少, 而且和图形没有关联)

2.4 color

定义各种颜色, 并且给到这些颜色的js实现

2.5 colorBar

建立在color模块上的模块, 对颜色进行了封装, 实现对具体对象、标记的颜色特效

2.6 colorscale

还是对color模块的封装

2.7 Others

其他的包 (如images, legend, shapes, etc), 也都是实现各自具体的功能, 不做赘述

3 constant

本包功能如其名字所言, 保存了plotly框架源代码中用到的所有常量, js文件内的内容皆是如下类型

```
module.exports = {
  // from bottom left: this is the origin of our page
  // positioning system
  FROM_BL: {
    left: 0,
    center: 0.5,
    right: 1,
    bottom: 0,
    middle: 0.5,
    top: 1
  },
  // from top left: this is the screen pixel position
  FROM_TL: {
    left: 0,
    center: 0.5,
    right: 1,
    bottom: 1,
    middle: 0.5,
    top: 0
  },
  // from bottom right: sometimes you just need the
```

4 css


















还是如包名所言...保存的是plotly框架用到的一些基本CSS代码

5 Font

保存的是字体的特效

6 lib

As expected...这是除了annotations外，第二个很大、功能很丰富的文件夹了

 angles.js	make modHalf restrict output to "half" of Math.abs(input)	20 days ago
 clean_number.js	update 2017 -> 2018	9 months ago
 clear_gl_c canvases.js	Update deps, adapt line2d code	6 months ago
 clear_responsive.js	several improvements to responsive charts	20 days ago
 coerce.js	make modHalf restrict output to "half" of Math.abs(input)	20 days ago
 dates.js	replace wrap360 with Lib.mod & wrap180 with new Lib.modHalf	20 days ago
 ensure_array.js	update 2017 -> 2018	9 months ago
 events.js	fix and  triggerHandlers for ".once" handlers	5 months ago
 extend.js	[wip] a few todos	7 months ago
 filter_unique.js	update 2017 -> 2018	9 months ago
 filter_visible.js	Merge branch 'master' into polar	9 months ago
 geo_location_utils.js	update 2017 -> 2018	9 months ago
 geojson_utils.js	update 2017 -> 2018	9 months ago
 geometry2d.js	replace wrap360 with Lib.mod & wrap180 with new Lib.modHalf	20 days ago
 get_graph_div.js	update 2017 -> 2018	9 months ago
 gl_format_color.js	move 3d parseColorScale to gl_format_color	4 months ago

(部分js文件名截图)

包里面存放的是第三方的js文件，实现了比较重要的有

- 对角度的操作 (angles.js)
- coerce.js (写的很杂，包含了对基本数据类型和对数组等基本数据结构的操作封装)
- 时间和日期的处理 (dates.js)
- regex.js(对正则表达式的处理)
- topojson_utils.js(格式转换,tojson)
- polygon.js (多边形的js)

简而言之，lib这个包导入了很多外部的底层js，为plotly库的实现提供了很多便利

7 Plot_api

plotly框架的api，导出了各种函数和变量（由Plotly提供），以供开发者调用

接口的数目实在太多，不一一列举

8 Plots

8.1 cartesian

笛卡尔坐标系变换

8.2 geo

几何图形/标记的布局、基本属性

8.3 gl2d

8.4 gl3d

9 snapshot

提供对各类图形/标记的

- 复制
- 粘贴
- 剪切
- 下载
- 转svg、
- 转图像

10 traces

各类图象

bar	Merge branch 'master' into 1852-persistent-click-via-selectPoints	18 days ago
barpolar	compute bar corners p0/p1/s0/s1 in crossTraceCalc	20 days ago
box	Merge pull request #2850 from plotly/missing-fulldata	13 days ago
candlestick	rename setPositions -> crossTraceCalc	2 months ago
carpet	refactor make_trace_groups to more general lib function	a month ago
choropleth	Merge branch 'master' into 1852-persistent-click-via-selectPoints	29 days ago
cone	fix #2723 - list correct 'color' attribute in cone,	3 months ago
contour	refactor make_trace_groups to more general lib function	a month ago
contourcarpet	refactor make_trace_groups to more general lib function	a month ago
contourgl	adapt gl2d to findExtremes	2 months ago
heatmap	refactor make_trace_groups to more general lib function	a month ago
heatmapgl	adapt gl2d to findExtremes	2 months ago
histogram	compute bar corners p0/p1/s0/s1 in crossTraceCalc	20 days ago
histogram2d	merge all colorscale attribute generator in one function	3 months ago
histogram2dcontour	add line styling to contour_legend test image and fix it for histogra...	a month ago
mesh3d	fix #2723 - list correct 'color' attribute in cone,	3 months ago
ohlc	Merge branch 'master' into 1852-persistent-click-via-selectPoints	29 days ago


parcoords	Merge branch 'master' into streamtube-traces	3 months ago
pie	use makeTraceGroups in pie	a month ago
pointcloud	adapt gl2d to findExtremes	2 months ago
sankey	sankey fix translateX for subplots	18 days ago
scatter	Merge pull request #2978 from plotly/scatter-layer-order	14 days ago
scatter3d	 unimplemented 'showscales' & 'colorbar' from scatter3d line attrs	2 months ago
scattercarpet	stacked area charts!	24 days ago
scattergeo	Merge pull request #2978 from plotly/scatter-layer-order	14 days ago
scattergl	Merge pull request #2990 from plotly/regl-line2d-bump	14 days ago
scattermapbox	Merge branch 'master' into 1852-persistent-click-via-selectPoints	18 days ago
scatterpolar	Merge branch 'master' into stacked-area	18 days ago
scatterpolargl	rename Polar.prototype.isPtWithinSector -> isPtInside	27 days ago
scatterternary	stacked area charts!	24 days ago
splom	Merge branch 'master' into 1852-persistent-click-via-selectPoints	29 days ago
streamtube	improve auto starting position algo	3 months ago
surface	fix #2723 - list correct 'color' attribute in cone,	3 months ago
table	ensure every trace defines _length in supplyDefaults, and abort trans...	5 months ago
violin	Merge branch 'master' into missing-fulldata	a month ago

包含

- 条
- 盒子
- 圆锥
- 热量图
- 历史数据图
- 散点图
- 曲线图 (2d&3d)
- 表

等等

11 transforms

aggregate.js	protect against non-numeric in change function	3 months ago
filter.js	standardize transforms handling of _length	5 months ago
groupby.js	cleaner handling of empty legend items, and groupby consistent with r...	5 months ago
helpers.js	update 2017 -> 2018	9 months ago
sort.js	 refactor sort transform from $O(n^2)$ to $O(n)$	5 months ago

实现的功能和js文件的名称一致，即对图形/图像的变换（聚合、过滤、分类、排序）

12 根目录下的其他js文件

12.1 core.js

```
// scatter is the only trace included by default
register(require('./traces/scatter'));

// register all registrable components modules
register([
    require('./components/fx'),
    require('./components/legend'),
    require('./components/annotations'),
    require('./components/annotations3d'),
    require('./components/shapes'),
    require('./components/images'),
    require('./components/updatemenus'),
    require('./components/sliders'),
    require('./components/rangeslider'),
    require('./components/rangeselector'),
    require('./components/grid'),
    require('./components/errorbars')
]);
```

(core.js文件中的一段代码)

根据代码和注释判断，这个文件应该是建立起components包中各组件之间的关联，对各个模块进行注册（what is registration?）

12.2 registry.js

第4周-第6周提交SA文档前（9.27-10.10 23:59）

- 目标：了解并理解SA文档各部分内容组成并着手开始写SA文档。
- 负责：看示例文档各类perspectives具体写哪些内容及参考书perspective catalogs部分，确定我们的项目要写哪些perspectives

Perspectives

以下表格引用自reference book

Perspective	Desired Quality	我的理解
Security	The ability of the system to reliably control, monitor, and audit who can perform what actions on what resources and to detect and recover from failures in security mechanisms	系统的健壮性，以及故障恢复能力
Performance and Scalability	The ability of the system to predictably execute within its mandated performance profile and to handle increased processing volumes	系统的性能和处理不同规模任务的能力
Availability and Resilience	The ability of the system to be fully or partly operational as and when required and to effectively handle failures that could affect system availability	可用性和抵抗故障的能力
Evolution	The ability of the system to be flexible in the face of the inevitable change that all systems experience after deployment, balanced against the costs of providing such flexibility	可更新性（扩展性）
Accessibility	The ability of the system to be used by people with disabilities	残障人士友好性
Development Resource	The ability of the system to be designed, built, deployed, and operated within known constraints around people, budget, time, and materials	
Location	The ability of the system to overcome problems brought about by the absolute location of its elements and the distances between them	
Regulation	The ability of the system to conform to local and international laws, quasilegal regulations, company policies, and other rules and standards	合法性
Usability	The ease with which people who interact with the system can work effectively	用户体验性

阅读并了解到各个perspective的含义后，我们决定选取以下几个perspective作为研究的对象

选取的perspectives

在理解上述不同角度和它们的关注点后，我们还参考了示例文档中的一下例子，最终确定我们的SA文档将要叙述的角度。

security 安全性

描述系统的健壮性以及故障恢复能力

按以下几个板块描述

Functional

The Functional view allows you to clearly see which of the system's functional elements need to be protected.

- 功能安全性：需要保护的重要功能元素

Information

The Information view also helps you see what needs to be protected—in this case, the sensitive data in the system

- 信息安全性：对敏感数据的保护

Development

You may identify guidelines or constraints that the software developers will need to be aware of in order to ensure that the security policy is enforced.

- 开发安全性：开发过程中所使用的引导项目开发的规范和指南

Deployment

The security design may have a major impact on the system's deployment environment.

- 部署安全性

Operational

Enforcing security policy is not just a matter of adding advanced technological features to a system

- 操作安全性

Performance and Scalability 性能和扩展性

Functional

Applying this perspective may reveal the need for changes and compromises to your ideal functional structure to achieve the system's performance requirements

- 功能视角的性能和可扩展性:哪些主要模块保证了系统的性能及可扩展性

Development

One of the possible outputs of applying this perspective is a set of guidelines related to performance and scalability that should be followed during software development.

- 开发视角的性能和可扩展性：开发过程中采取哪些规范和限制来确保系统的性能和可扩展性

Evolution 可更新性

Functional

if the evolution required is significant, the functional structure will need to reflect this.

- 可更新性在功能上的体现:功能模块的编码方式和组织方式是如何使得对更新友好

Information

If environment or information evolution is needed, a flexible information model will be required.

- 灵活友好的信息存储和组织方式，使得更新不影响数据的完整性等等

Deployment

This perspective rarely has a significant impact on the Deployment view because system evolution usually affects structures described in other views.

- 项目的模块布局方式，使得更新起来更加方便

第6周-第7周汇报进度前 (10.11-10.17)

第7周-第9周汇报进度前 (10.18-10.31)

第9周-第12周演讲前 (11.1-11.21)

第12周-第13周提交SA文档前 (11.22-11.28 23:59)
