

Layout

VistHub - visualizing GitHub - Firefox Nightly

VistHub x | https://www.visthub.de

VistHub - users | repos | events | languages | meta

Search user | world map | graph | options

About users on GitHub

Most followed user

User	#Followers
rust	~100
valre	~200
microsoft	~400

Most following user

User	#Followers
ghj	~1000
sdf	~1500
zxy	~2000
abc	~2500

Amount of users with diff. langs

#Lang	Users
0	~10000
1	~15000
2	~18000
3	~12000
4	~8000
5	~10000

Amount of users on GitHub over time

FOCUS

doitsujin

search user | world map | graph | options

About doitsujin

Follower acquisition over time

Most used languages

Language	#Repos
C++	~6
C	~4
Rust	~1

Most issued events

Event	#Events
Push	~1000
Comment	~100
Create	~50
Forke	~10

User "doitsujin" has been searched!

- Graph highlights the user in green, displays incident edges in bold, colors the directed connected authors, grey-scale for other authors
- Graph only displays authors that are at most 3 away - see depth: 3
- Below, additional graphs with user-specific information for searched user are displayed

TITLE:	"VistHub"-visualizing GitHub
AUTHOR:	Dennis Grabowski
DATE:	2020-05-23
SHEET#:	05 - Realization
TASK:	Final design/structure of app
OPERATIONS	<ul style="list-style-type: none"> Clicking on "VistHub" returns the user back to the main page, i.e. the "users" sub-page Application starts on the "users" sub-page, see orange underline Clicking on "users"/"repos"/"events"/"languages"/"meta" tabs opens a sub page with visualizations for the specific category Author network viewer shows a "global" network of authors by default Users traverse the viewer by zooming in/out via mousewheel or mouse grabby through the regions Hovering over a node results in tooltip containing more detailed info, also highlights the author and all incident edges Searching for a specific user results in: <ul style="list-style-type: none"> + highlighting the through hovering + displaying additional info about that user below the viewer (see focus) + graph only shows author + pre-configured depth of connected authors + general info about all users will be hidden Clicking on a user results in the same as searching for that user Clicking on "world map" will try to display the graph as a world map if enough location info can be found Clicking on options results in opening a menu to set various visualization options such as graph layout or depth Hovering over a bar in a chart results in displaying a tooltip with more info + highlight
DETAIL / DISCUSSION	<ul style="list-style-type: none"> + very interactive; switching visualizations allows user to play around in detail. - hard to implement due to amount of data needed - network viewer may overwhelm/confuse user? viewer is novel, scalability can be handled by configuring a good "depth", max nodes/edges clarity seems fine due to searchability cost of implementation: ~4 weeks? no specific hardware needed, capability to open/use browser (e.g. Firefox) implementation done in JS with D3.js <ul style="list-style-type: none"> ↳ further deps handled by yarn/npm algorithms for layouts: <ul style="list-style-type: none"> - Rooted / Radial tree via d3.layout.tree(): implements C. Bachmann et. al., 2002 - Force - directed via d3.layout.force(): impls. quadtree by Barnes-Hut approximation - Edge Bundling via d3.layout.bundle(): implements Danny Holten's algorithm - Circle layout via d3.layout.circle(): Data structure is arrays/maps in JSON, alternatively Google Bigquery (only 1TB traffic)