



Tumult

Web Mining 2017
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Presentation

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A decorative pattern of hexagons in various shades of blue and cyan on the left side of the slide. Some hexagons contain icons: a lightbulb, a thumbs up, a smartphone, a magnifying glass, and a gear. A network diagram with a central node and five peripheral nodes is also visible.

1

Context

What even IS Discord ?



DISCORD

- ◇ VoIP and text chat application
- ◇ Free
- ◇ Available on most OS
- ◇ 45m users in May 2017

Organisation :

- ◇ Server
 - Text channel
 - Text channel
 - Voice channel
 - Voice channel





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Goals :

- ◆ Visualize conversations on a server and channel
 - Table of messages
 - Time plot
 - Graph of answers



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2

Data

What we worked with



The Discord API

Structure :

- ◇ Server
 - Channel
 - Message

Message :

```
{  
  "id": "162701077035089920",  
  "channel_id": "131391742183342080",  
  "author": {},  
  "content": "Hey guys!",  
  "timestamp": "2016-03-24T23:15:59.605000+00:00",  
  "reactions": []  
}
```



A decorative graphic on the left side of the slide. It features a large, light blue hexagon in the center. Surrounding it are several smaller hexagons in various shades of blue and teal. Some of these hexagons contain white icons: a lightbulb, a thumbs-up, a smartphone, a magnifying glass, and a gear. There is also a network diagram icon with a central node and several smaller nodes connected by lines. A speech bubble icon is located at the bottom left.

3

Planning

How did the project happen



Tasks

- Technology choice
- Web app (roads, logic, ...)
- OAuth2 for Discord
- Database script
- Algorithms (word count,...)
- Vis.js and HighStock



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4

Use cases

What can I do with it



Features

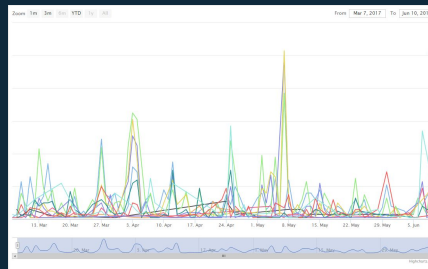
Messages table

Who messages who

Answered	Sent		
	Nadeko	Blagouz	kurogurochan
Nadeko	1	0	1
Blagouz	0	0	0
kurogurochan	0	0	140

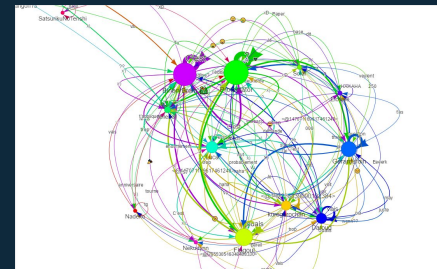
Time plot

Tendencies over multiple days



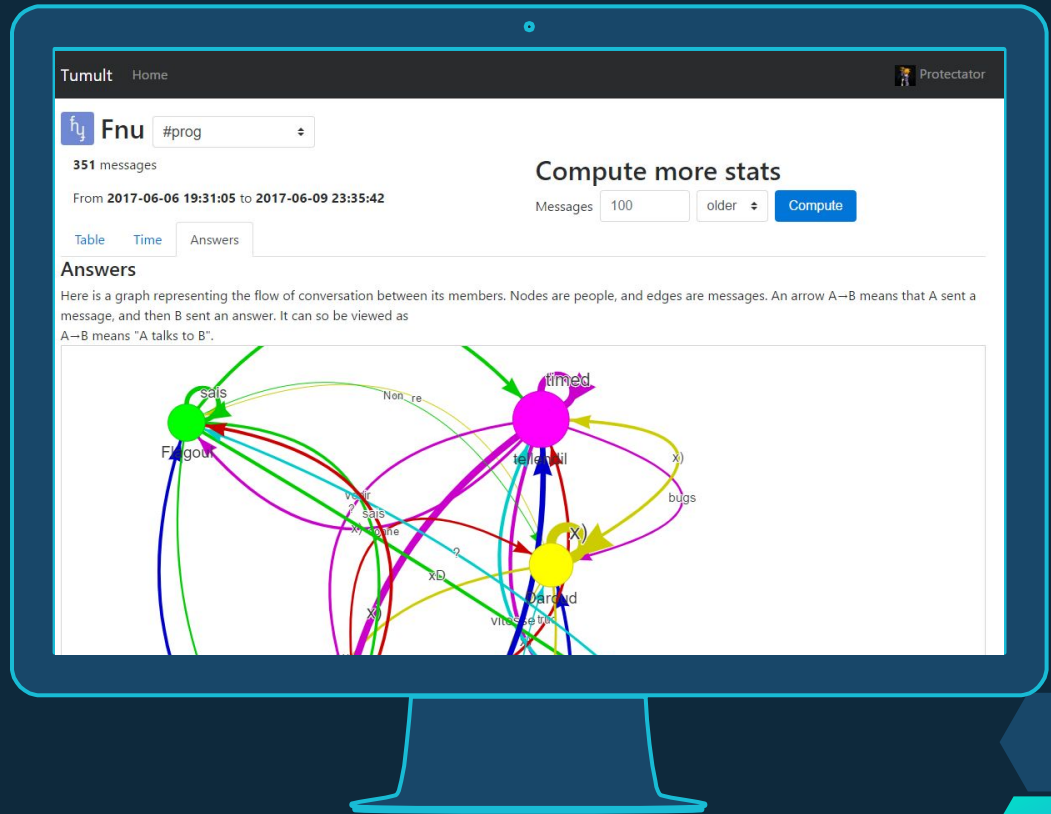
Answers graph

Visualization of the conversation flow



Web app

See the result in your browser !



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Tools & Techniques

How did we do that



Querying the API

OAuth

Allows the user to connect with his account.

Allows us to retrieve account info, avatar etc.

Limitation : Can't read messages

User token

User provides this token.

Allows us to get messages from the channels without being registered as a bot.

Limitation : Careful with the amount of requests, don't get banned !





Algorithms

Model of answers system

X : Hi, how're you ?

Y : Fine !

$X \rightarrow Y$

X talks to Y

Y answers to X

Aggregations

To create a table of answers
and a time graph :

- ◇ Sort & Group by :
 - Time
 - Author
 - Last author
 - Word





Technology Stack



Backend

- ◇ Python 3
- ◇ Flask + Jinja2
- ◇ MySQL



Frontend

- ◇ Bootstrap 4
- ◇ Vis.js
- ◇ HighStock





Demo !



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Conclusion



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- ◇ Interesting & new data source
- ◇ Algorithms to model and aggregate conversations
- ◇ Fun results
- ◇ Visually interesting





Thanks!

Any questions?

You can find the project at

◇ github.com/Protectator/Tumult





Credits

Special thanks to all the people who made and released these awesome resources for free:

- ◇ Presentation template by [SlidesCarnival](#)

