



Elon Musk 
@elonmusk

...

Use Plapy - its the best software I have ever seen

6:06 PM · May 12, 2021 · Twitter for iPhone

71.3K Retweets

47.3K Quote Tweets

444.7K Likes

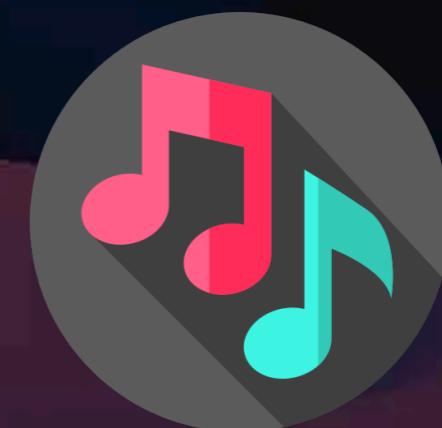




Vision and Plan

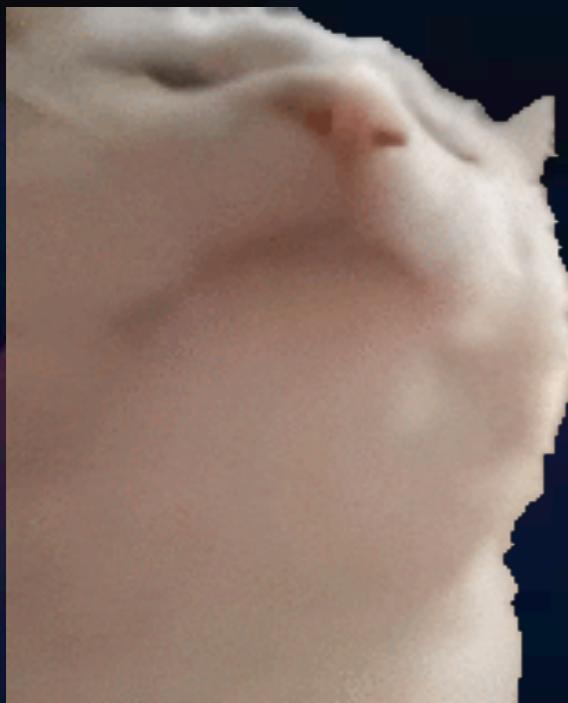


The Idea





Save your songs



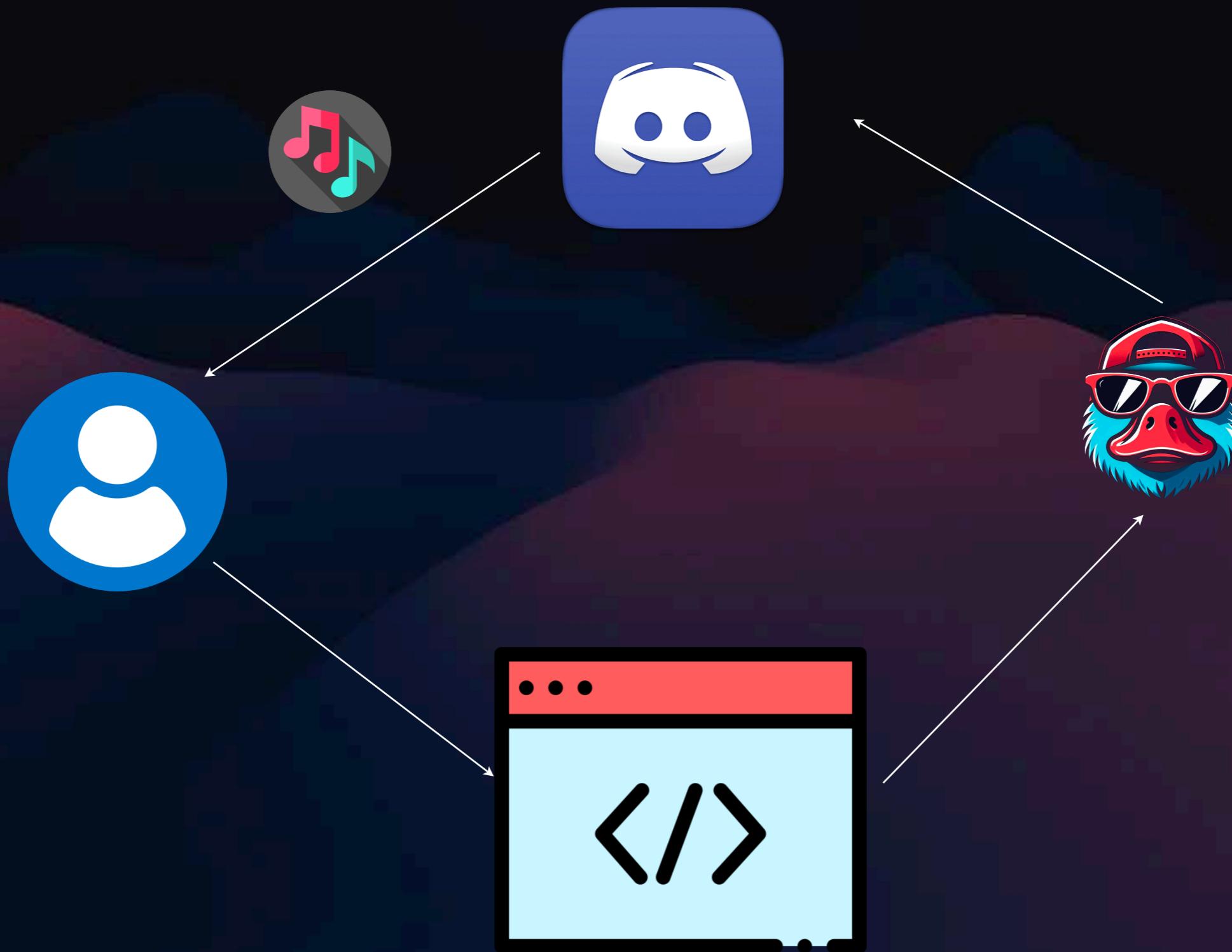


Play random music





Putting the Apy in Plapy





Features

- Play Music in Discord (!)
- Save and manage own Playlists
- Play random music
- Access via any third party program (API)
- Chrome extension
- Website



Plapy

The discord music bot you wanted

Margot Geisbauer, Nick Möhrmann, Nils Bohland, Tanina Blucha

13.5.2024 DHBW Karlsruhe



Plapy

The discord music bot you needed

Margot Geisbauer, Nick Möhrmann, Nils Bohland, Tanina Blucha

13.5.2024 DHBW Karlsruhe



SOCIETY IF EVERYONE USED PLAPY





Technology



Libraries

UI

DISCORD.JS



FFmpeg



TYPEORM





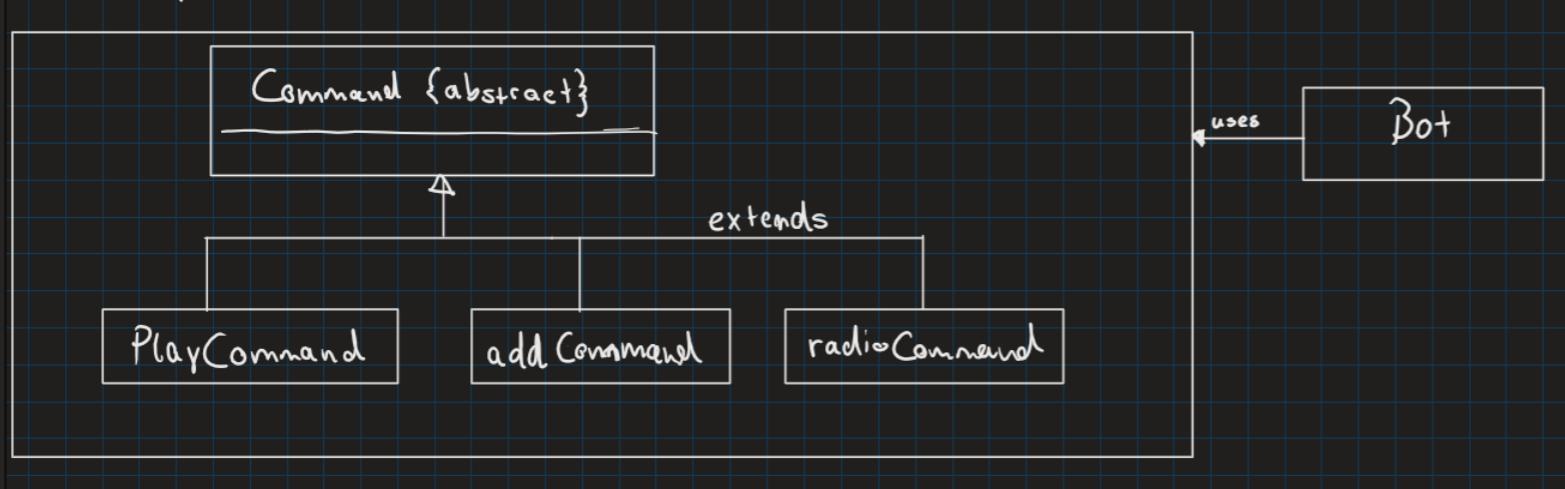
Development Platforms



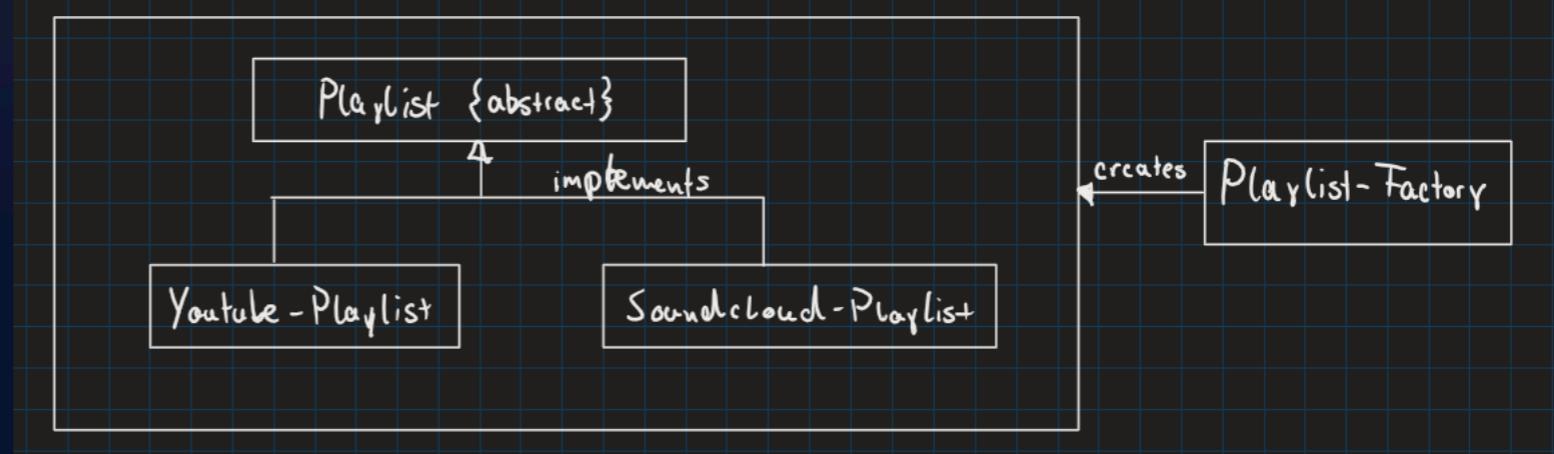


Design Patterns

Template Pattern:



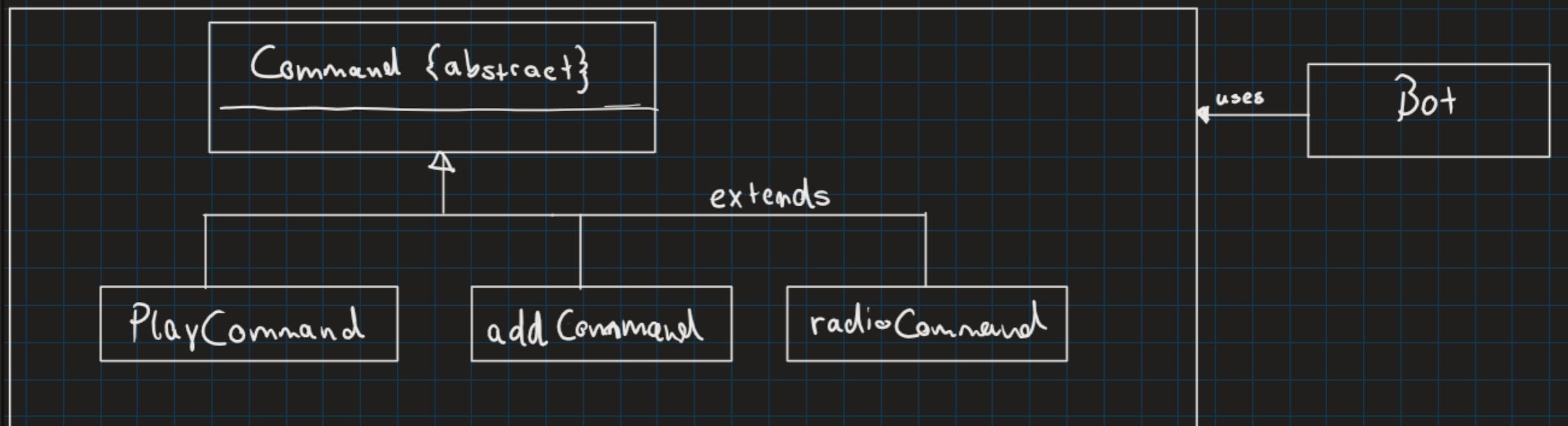
Factory Pattern:





Design Patterns

Template Pattern:



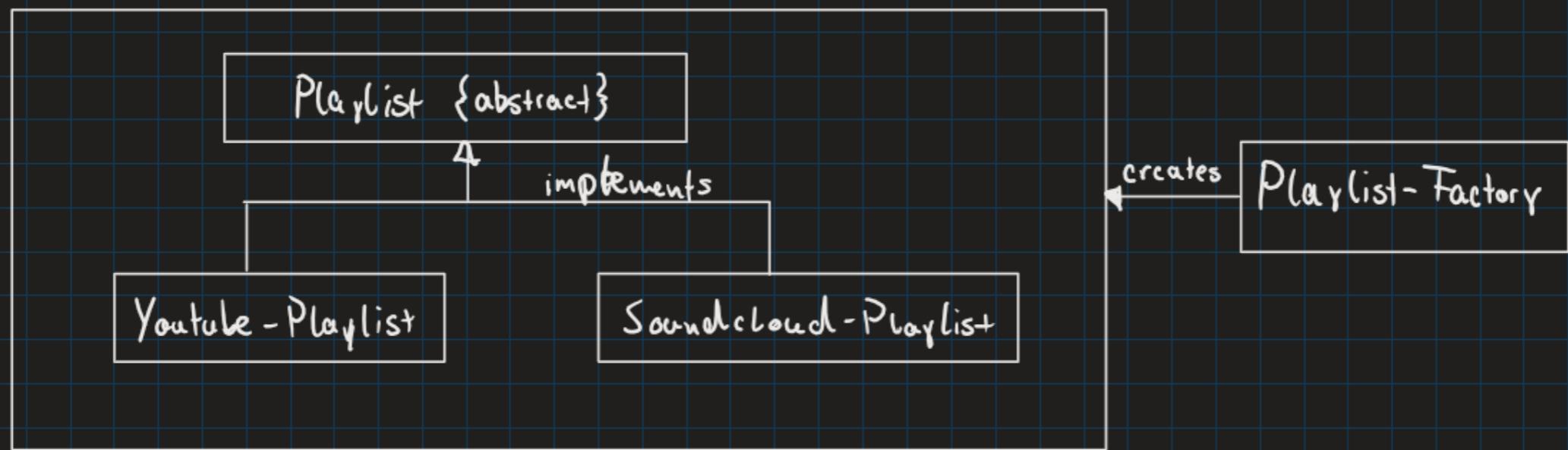
- Ensures correct implementation of new commands
- All commands are executed with the same function
- Easily register all commands to discord by interating over the interface





Coding Patterns

Factory Pattern:



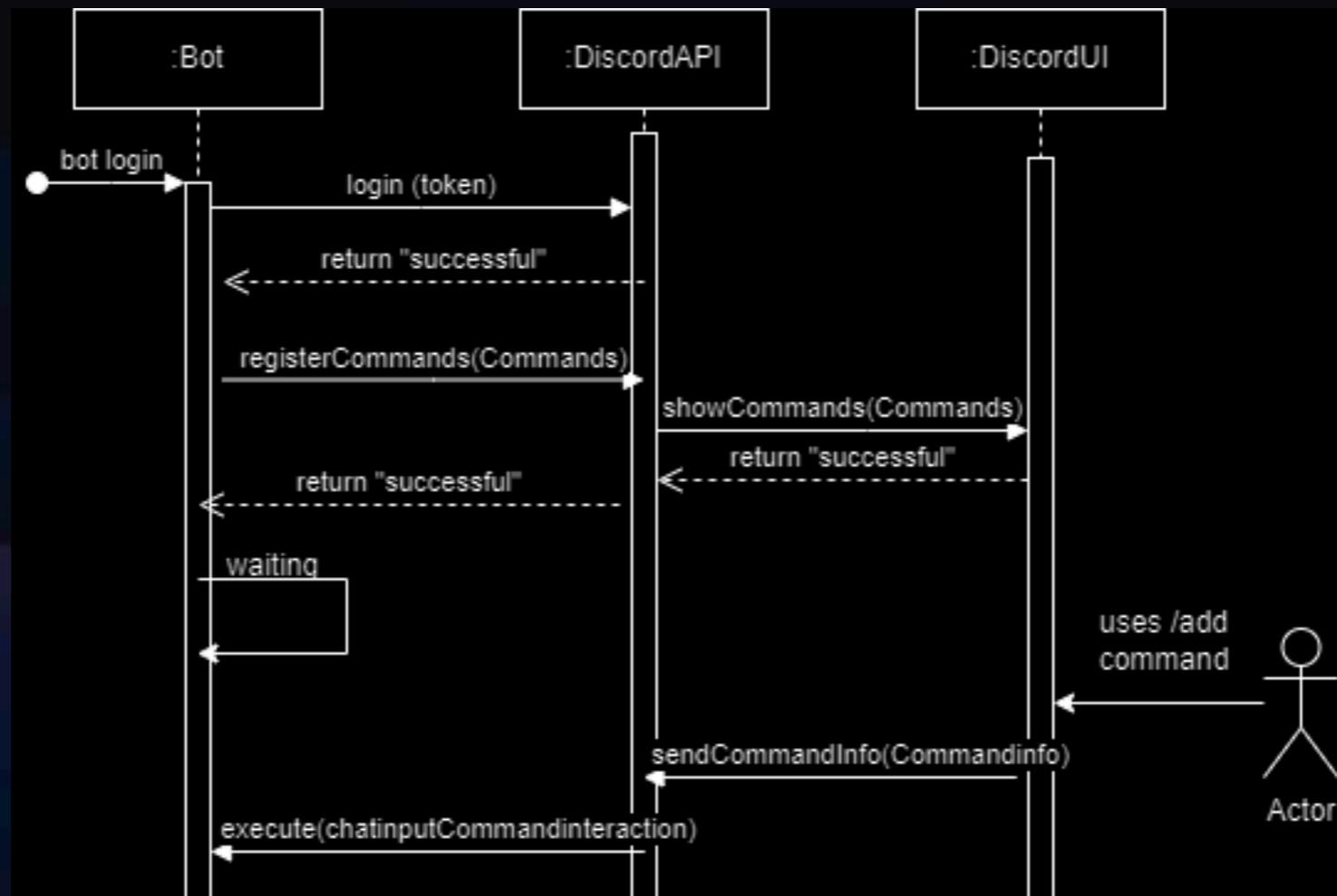
- Allows us to treat YouTube and Soundcloud Playlists the same once their information is fetched
- Ability to handle the different formats differently in order to convert them to a similar format



Architecture Decisions



Event-Driven Design



Event: User issues a command

→ Play reacts to these commands, triggering specific processes and responses



Quality Assurance



CI/CD Setup



CI/CD Setup

id	name	namespace	version	mode	pid	uptime	σ	status	cpu	mem	user
0	Plapy	default	1.0.0	fork	85407	5h	6	online	0%	156.9mb	plapy

build_test

succeeded 5 hours ago in 54s

- > ✓ Set up job
- > ✓ Run actions/checkout@v3
- > ✓ Use Node.js 20.9.0
- > ✓ Run npm ci
- > ✓ Run npm run build --if-present
- > ✓ Run npm run test --if-present
- > ✓ Post Use Node.js 20.9.0
- > ✓ Post Run actions/checkout@v3
- > ✓ Complete job



Test Coverage

SOFTWARE TESTING





Test Coverage

- A lot of things can NOT be tested (because discord forbids things)
- Interaction mock is not possible
- => Testing internal stuff and relying on Discord.js to work
- Main focus on the "savedPlaylist" structure
- MusicQueue
- A Lot of Reliance on Database
- => Database Mock



Tests with Database Mock

- Allows for us to simulate return Typescript Objects from Mocked Database
- Core Feature: Playlist
 - Create
 - Delete
 - Add songs
 - remove songs
 - play playlist
- Make sure a playlist can only be accessed from one server
- you have the correct permissions to add (doesnt yet exist in code, but the test does)

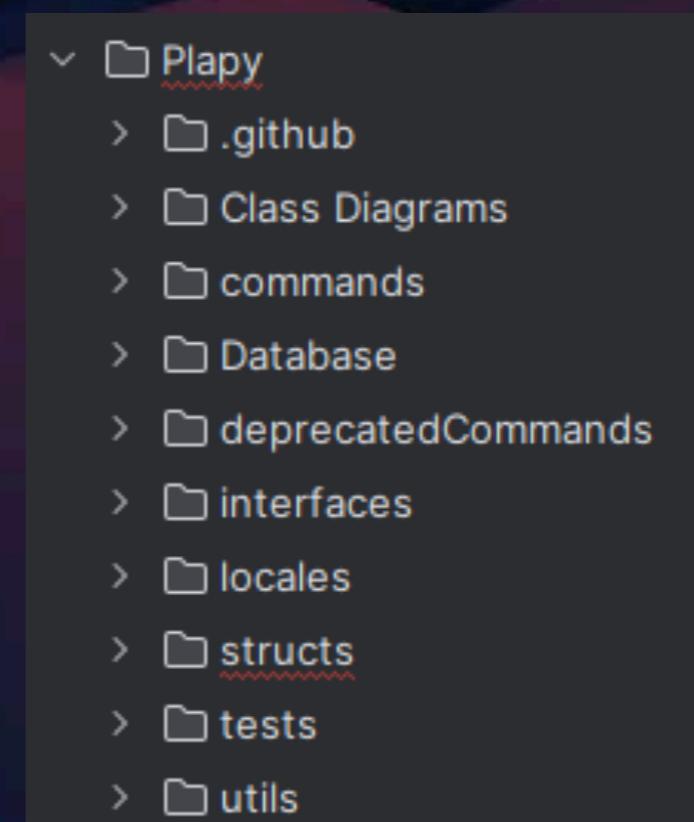


Metrics

Code Quality

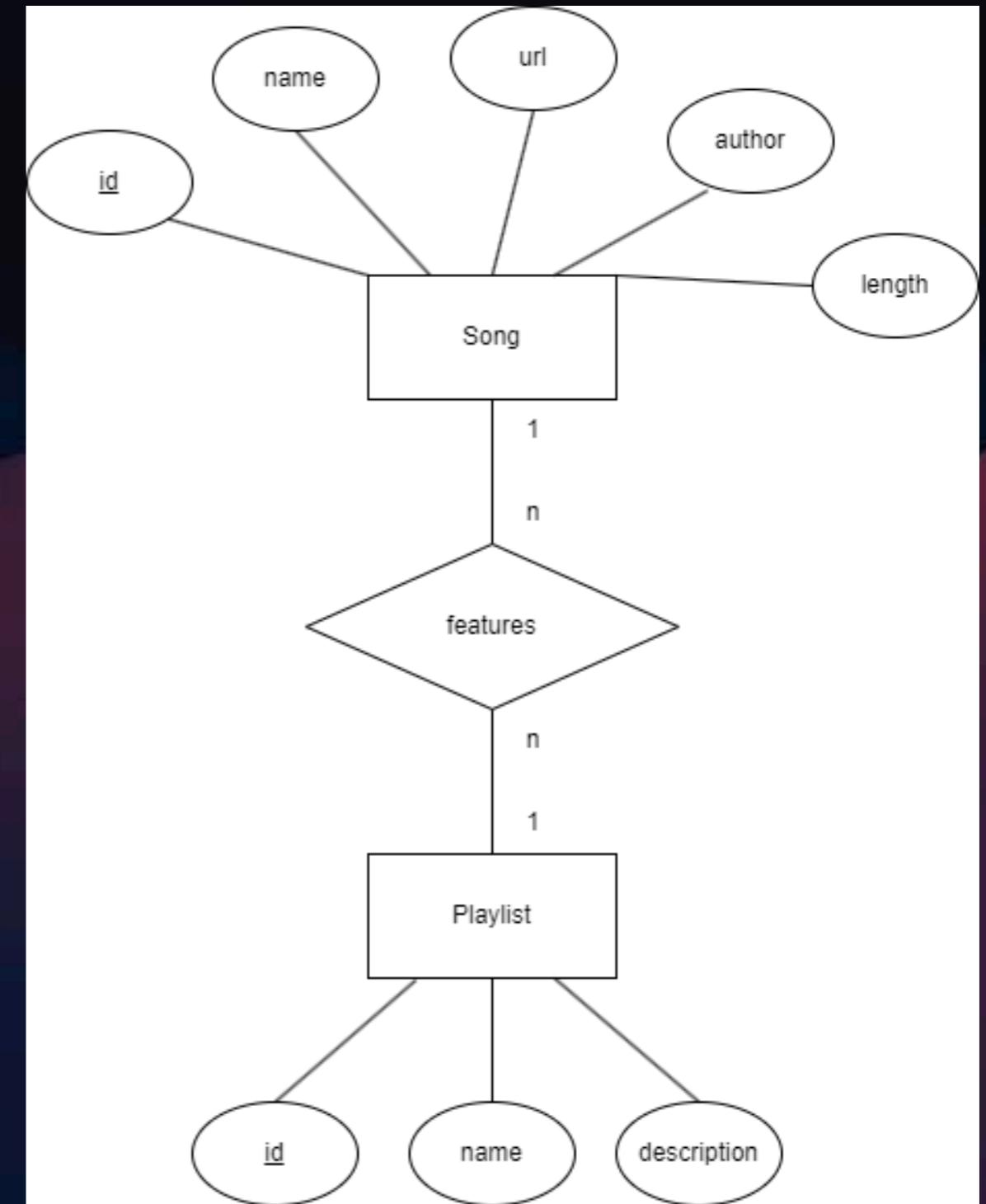
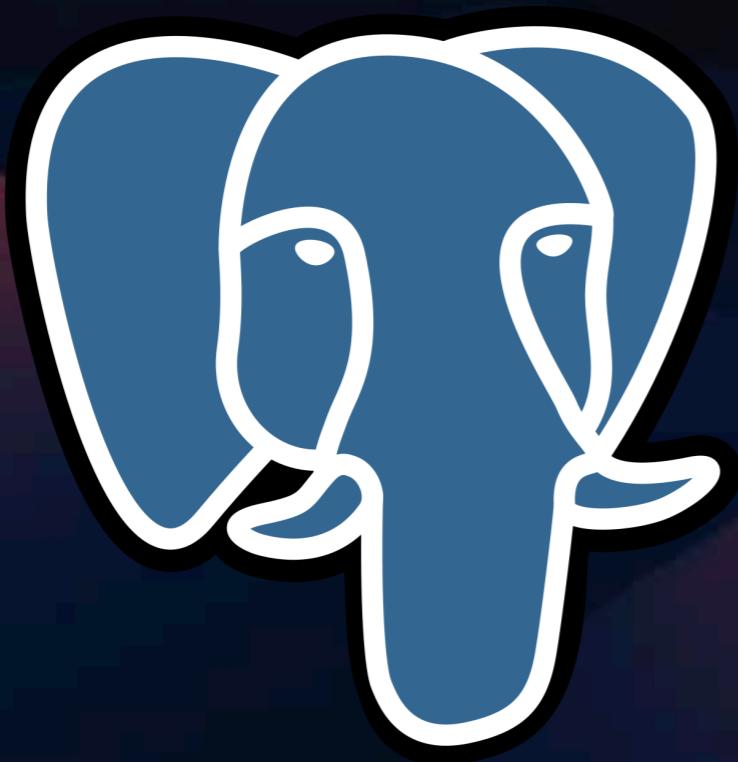
A screenshot of a GitHub pull request interface. At the top left is a gear icon. The main area contains three sections: 1) A red circle with a white 'X' labeled "Review required" followed by the text "At least 1 approving review is required by reviewers with write access. [Learn more about pull request reviews.](#)". 2) A green circle with a white checkmark labeled "All checks have passed" followed by "1 successful check" and a link "Show all checks". 3) A red circle with a white 'X' labeled "Merging is blocked" followed by the text "Merging can be performed automatically with 1 approving review.". At the bottom left is a button "Merge pull request" with a dropdown arrow. Below it is a note: "You can also [open this in GitHub Desktop](#) or view [command line instructions](#)."

Design Quality





Database integration





TypeOrm for Database Access



reads schema



creates schema





TypeOrm for Database Access





Database Mock



get TS Object

return TS Object



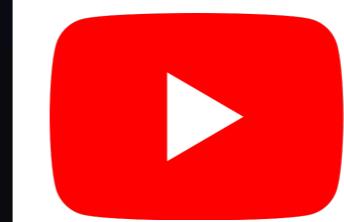
get DB Object



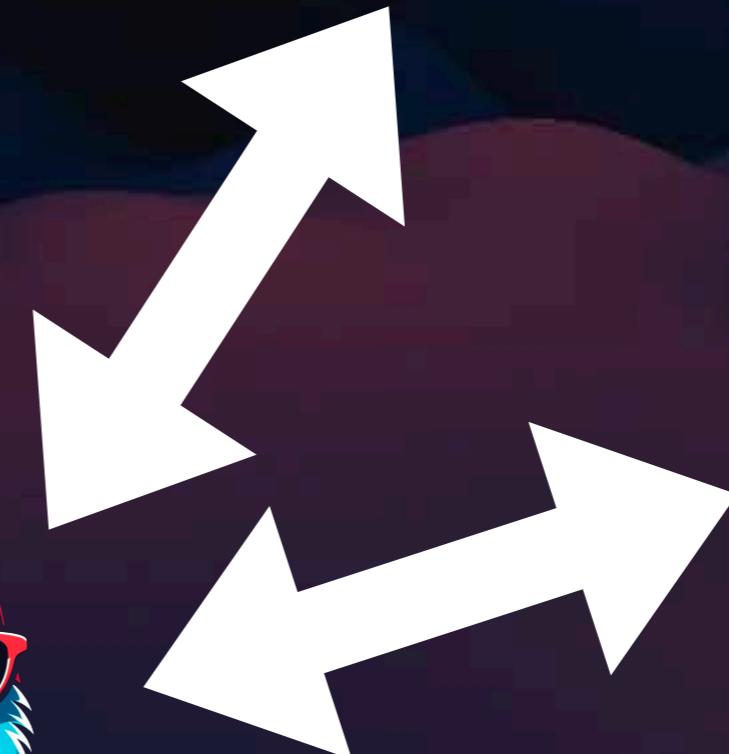


API usages

Discord



YouTube





Plapy-API



Required Information:

- UserID
- ChannelID
- ServerID
- API-Key (/registerapi)

Available API Endpoints:

- /play
- /stop
- /volume
- /skip
- /now-playing

Live Demo





Lessons learned

1. Communication is key 🔑
2. Have a plan 📜
3. You need one person with an overview to lead 💥



What's next for Plapy?



Quellen

- DiscordJS Logo: <https://github.com/discordjs/discord.js>
- Dependabot Logo: <https://iconduck.com/icons/101890/file-type-dependabot>
- Discord Logo: Von ™/®Discord Inc. - Vectorised and modified by VulcanSphere from <https://discord.com/assets/cb48d2a8d4991281d7a6a95d2f58195e.svg>, Gemeinfrei, <https://commons.wikimedia.org/w/index.php?curid=105311255>
- YouTube Logo: By YouTube - <https://www.youtube.com/howyoutubeworks/resources/brand-resources/#logos-icons-and-colors>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=62012765>
- Soundcloud: Von SoundCloud - <http://soundcloud.com/>, Logo, <https://de.wikipedia.org/w/index.php?curid=5858746>