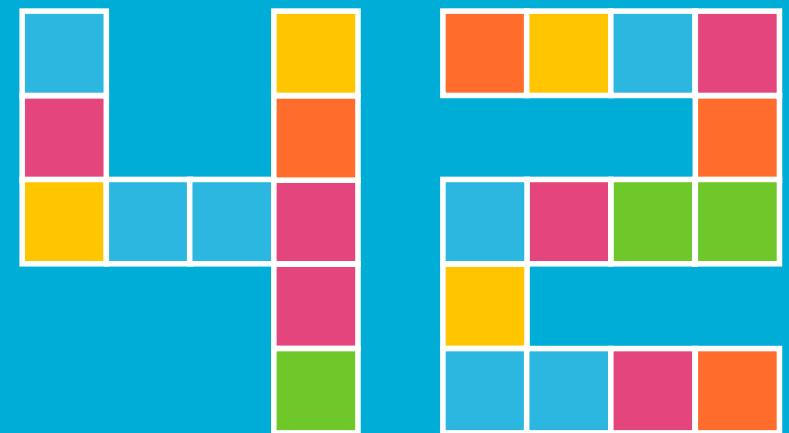


Insights From a Spring Boot Leisure Project

For Everyday Developer Life

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TALENTS

Abstract

Insights From a Spring Boot Leisure Project for Everyday Developer Life

New gadgets and slow mobile apps tempt many a developer to spend the Christmas holidays reverse engineering, hacking and coding to put their world back together.

Join a motivated developer on his journey to successfully implement his idea. Along the way, he is surprised at how much or how little effort is involved in each step, and what he learns along the way. We dive into the world of Android apps, Spring Boot, Buildpacks, GitHub Actions, Docker containers, GraphQL and API breaking changes.

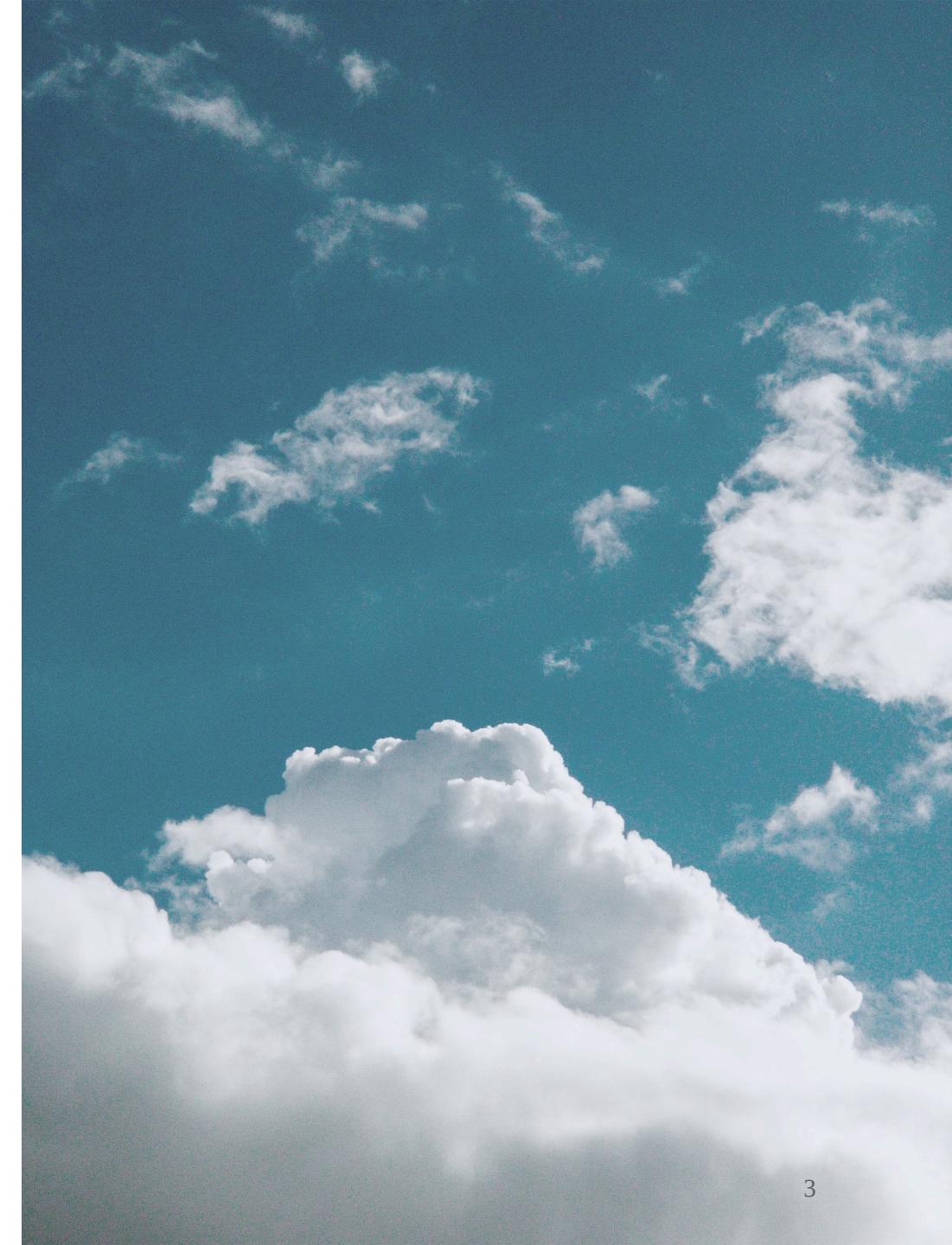
A thriller in three acts.

Insights

**From a Spring Boot Leisure
Project for Everyday
Developer Life**

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WARNING:

This is a **work of fiction**. Any similarities to real-life events or **persons** are purely **coincidental**. The information, names, characters, places and incidents are the product of the **author's imagination**. Readers should regard the story as **entertainment** and not as **representative** of any real **events or persons**.

Introduction



Patrick Baumgartner

Technical Agile Coach @ 42talents

My focus is on the development of software solutions with humans.

Coaching, Architecture, Development, Reviews, and Training.

Lecturer @ Zürcher Fachhochschule für Angewandte Wissenschaften ZHAW

[@patbaumgartner](https://twitter.com/patbaumgartner)

**How do you learn new things for work
or in general?**



**Does it only happen during working
hours?**



How do you prepare for future tasks?



Agenda

Agenda

- Getting a new toy (device)
- The pain caused
- Trying to find a solution
- DIY
- More pain
- The (current) result
- Lessons learned (for work)

Meet the Developer

Meet the Developer



- Problem solver, software developer and architect
- Loves to have a challenge and learn new things
- Has a family and a full-time job
- Tinkering around Christmas is possible
- Got a new toy (device) for Christmas 🎁

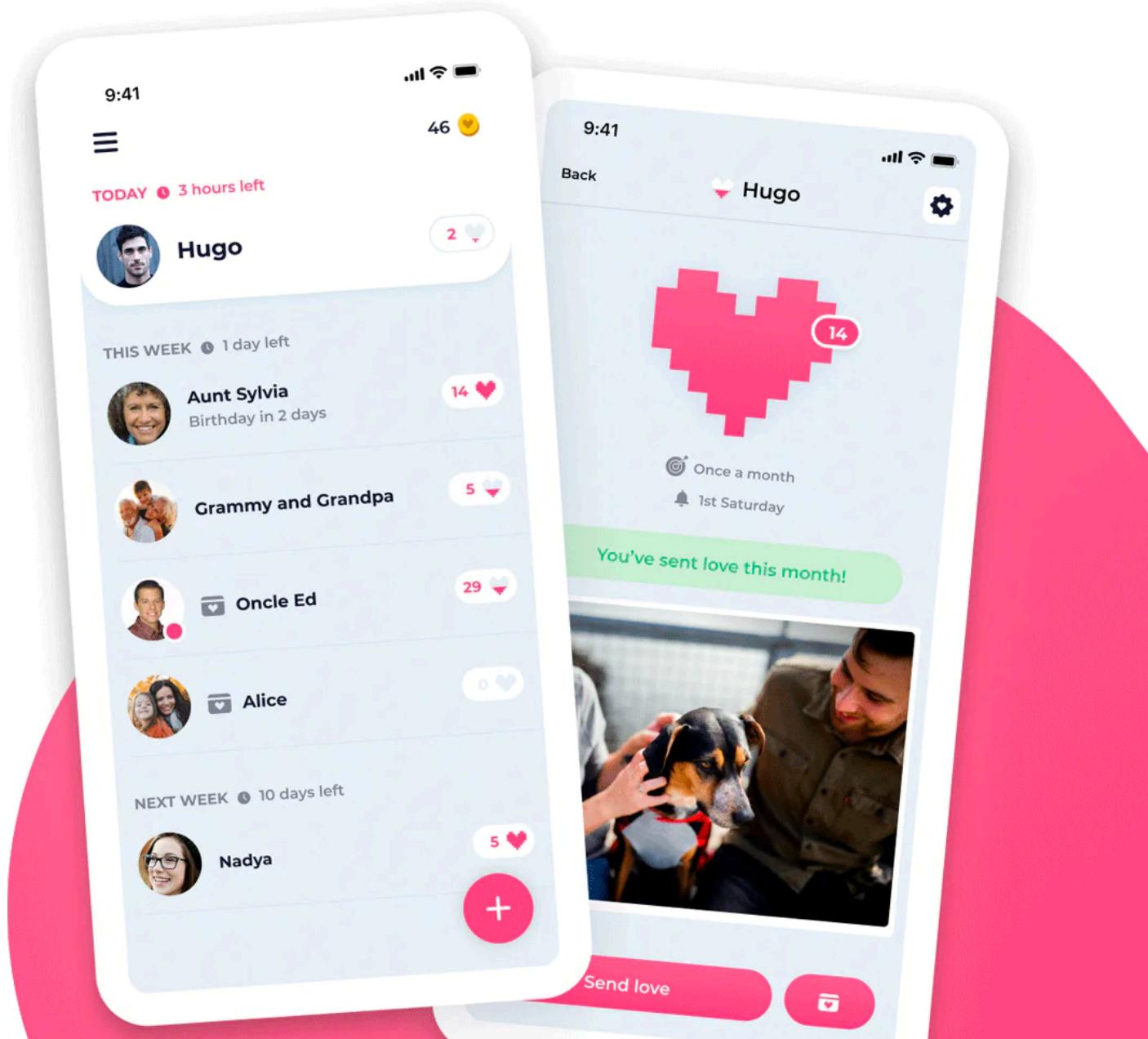






Happy Mother's Day

The Pain





julisa99/Lovebox: DIY project to

github.com/julisa99/Lovebox

Code Issues 1 Pull requests Actions Projects Security Insights

Lovebox Public

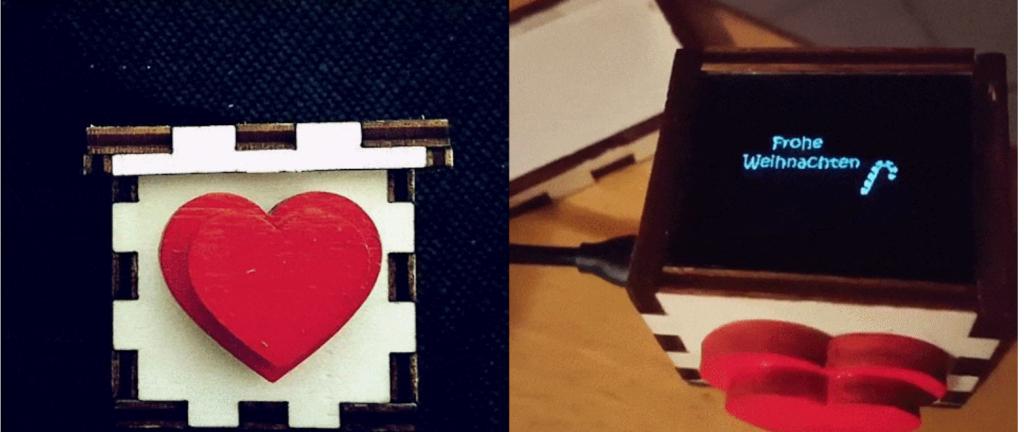
Watch 6 Fork 44 Star 100

master 1 branch 1 tag Go to file Add file Code

README.md

Lovebox

DIY project to lasercut a lovebox inspired from <https://en.lovebox.love/>. It was a homemade Christmas present for my mom. So I can send her messages or pictures at any time to start the day motivated. When a new message is received, the heart moves in front of the box. It stops as soon as the message has been read (more specifically the built-in brightness sensor reacts when the box is opened). Have fun building your own!



About

DIY project to lasercut a lovebox on your own (see <https://en.lovebox.love/>), which would cost almost \$100.

lisaih.de/Lovebox/

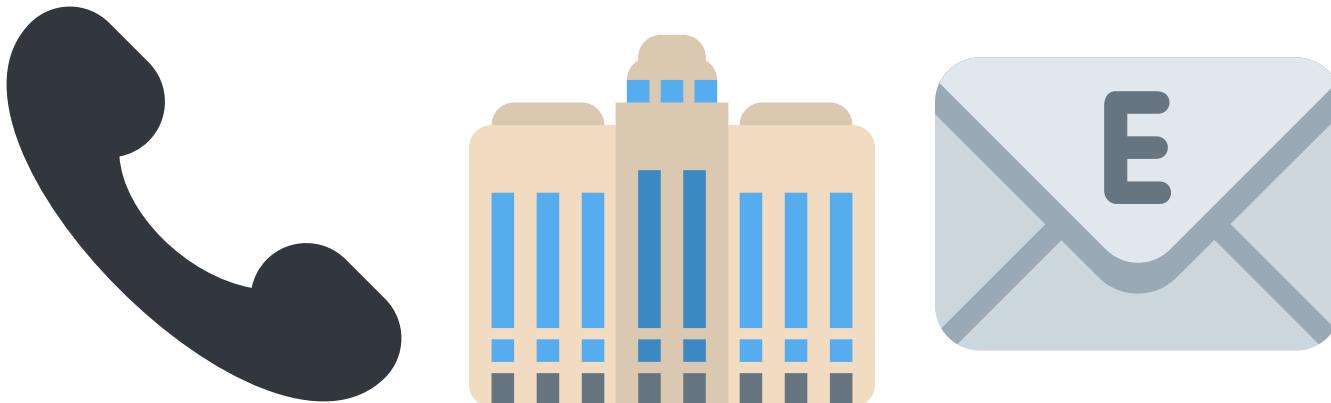
Readme MIT license Activity 100 stars 6 watching 44 forks Report repository

Releases 1

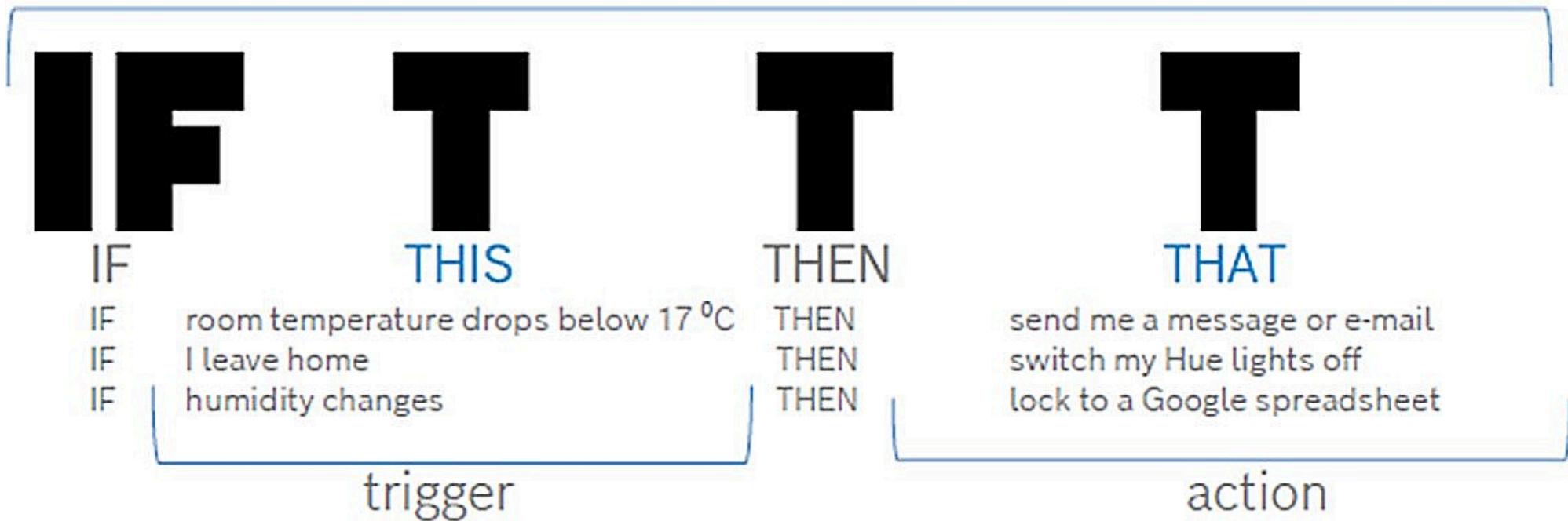
Lovebox DIY Latest on Apr 26, 2021

Packages

No packages published



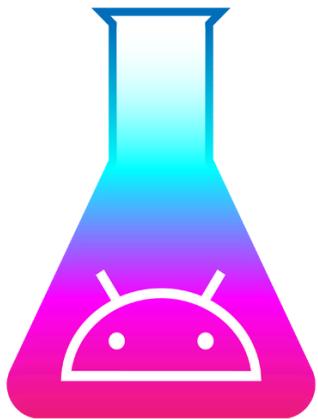
applet





Cracking the Mobile App

(Reverse Engineering)



- Decode APK
- ... some other steps
- Certificate Unpinning
- ... some other steps
- Repackaging APK

The screenshot shows the GitHub repository page for [APKLab/APKLab](#). The repository is public and has 42 watchers, 214 forks, and 2.1k stars. It features 3 branches and 22 tags. The README.md file contains the following content:

APKLab

The ultimate Android RE experience right inside your [VS Code](#).

APKLab seamlessly integrates the best open-source tools: [Quark-Engine](#), [Apktool](#), [Jadx](#), [uber-apk-signer](#), [apk-mitm](#) and more to the excellent VS Code so you can focus on app analysis and get it done without leaving the IDE.

latest v1.7.0 get from [open-vsx](#) installs 79k CI passing

XDA Forums telegram matrix

Features

- Decode all the resources from an APK
- Disassemble the APK to Dalvik bytecode aka Smali
- Decompile the APK to Java source
- Interactive Malware Analysis Report

About

Android Reverse-Engineering Workbench for VS Code

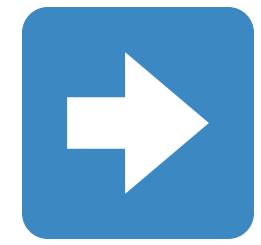
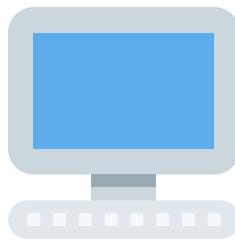
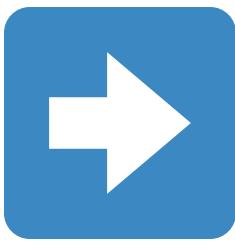
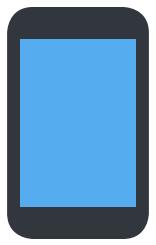
Owner: [apklab.surendrajat.xyz](#)

Tags: android, bytecode, reverse-engineering, mitm, dalvik, malware-analysis, apk-editor, smali, apk-decompiler, apktool, apk-studio, malware-detection, apksigner, jadx, app-analyzer, smalidea, uber-apk-signer, https-inspection

Readme, AGPL-3.0 license, Activity, 2.1k stars, 42 watching, 214 forks, Report repository

Releases

22 tags



Login Request

```
curl --location --request POST 'https://app-api.loveboxlove.com/v1/auth/loginWithPassword' \
--header 'accept: application/json' \
--header 'content-type: application/json' \
--header 'host: app-api.loveboxlove.com' \
--data/raw '{
    "email": "my@email.com",
    "password": "mySecret"
}'
```

```
{
    "_id": "42c61f261f399d0016350b7f",
    "firstName": "FirstName",
    "email": "my@email.com",
    "token": "exJhbGcp0iJIVzI1NipsInR5cCI6IkpxVDj9
        .eyJ1c2xySwFi0iI2MWM5LWYZNjFhMzk5YzAwMTYzNTBhN2YiLCJpYXQiFjE22DAVNmQwNTL9
        .qlsvp_roqCu4MFwBMwNZu2eyImFGjogvNeR4tkoTLPe"
}
```

Creating a Server App



- Spring Boot
- Spring Cloud Open Feign Starter
- Telegrambots Spring Boot Starter
- Imgscalr
- OCI (Docker) Container
- Using Lovebox GraphQL API

Spring Boot Application

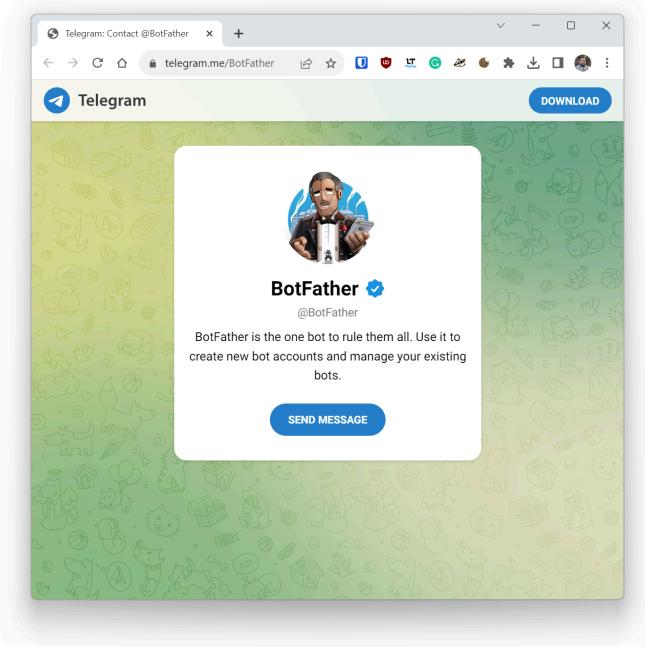
```
@EnableScheduling @EnableFeignClients @SpringBootApplication
@EnableConfigurationProperties({LoveboxRestClientProperties.class, LoveboxBotProperties.class})
@Import(TelegramBotStarterConfiguration.class)
public class LoveboxTelegramSenderApplication {

    public static void main(String[] args) {
        SpringApplication.run(LoveboxTelegramSenderApplication.class, args);
    }
}
```

```
@Component
public class YourBotName extends TelegramLongPollingBot { ... }
```

```
<dependency>
    <groupId>org.telegram</groupId>
    <artifactId>telegrambots-spring-boot-starter</artifactId>
    <version>6.8.0</version>
</dependency>
```

Setting Up the Telegram Bot

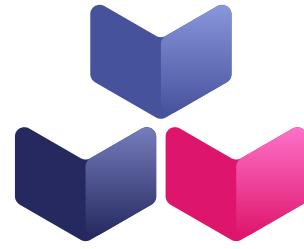


- Contact **@Botfather**
- Create a chatbot with **/newbot**
- Get the bot username, and token

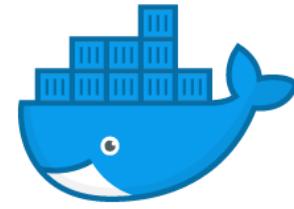








Buildpacks.io



docker



2 Nights of Debugging





Patching Buildpack Run-Image

```
FROM paketobuildpacks/run:base-cnb

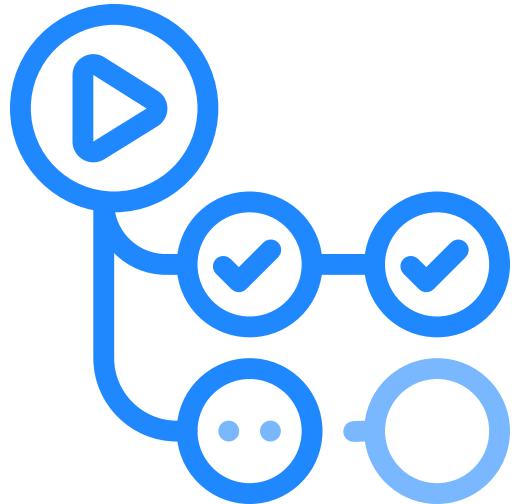
USER root

## Idea from: https://blog.adoptopenjdk.net/2021/01/prerequisites-for-font-support-in-adoptopenjdk/
RUN apt-get update \
  && apt-get install -y --no-install-recommends \
    wget \
    fontconfig \
  && rm -rf /var/lib/apt/lists/*

# Install Noto Emoji Manually
RUN mkdir -p /usr/share/fonts/truetype/noto \
  && cd /usr/share/fonts/truetype/noto \
  && wget https://github.com/googlefonts/noto-emoji/raw/9a5261d871451f9b5183c93483cbd68ed916b1e9/fonts/NotoEmoji-Regular.ttf \
  && fc-cache -fv

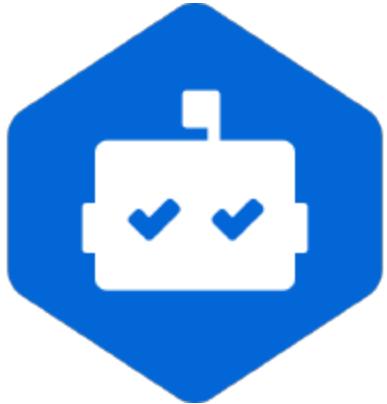
USER cnb
```


GitHub Actions



- Checkout
- Login to DockerHub
- Build and push Buildpack run-image
- Setup JDK 17
- Build app artifact with Maven
- Build and push the container image for the app

Dependency Updates with Dependabot



- Updating GitHub Actions
- Updating Maven dependencies

Automated Deployment with Watchtower



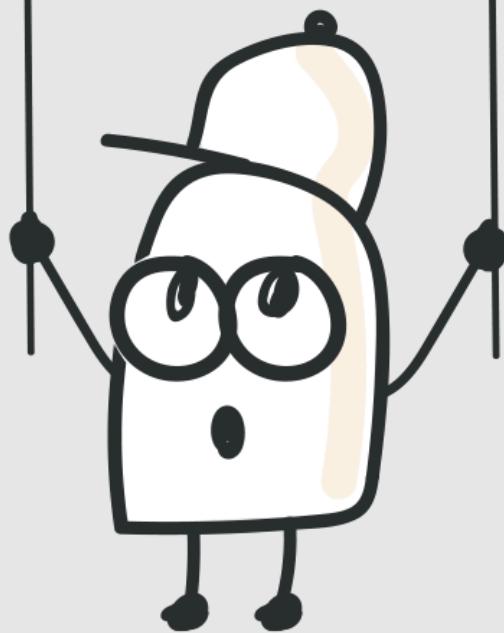
- Polling container updates from DockerHub
- Cron runs by default every 24 hours
- Update images and restart containers
- Everything runs on my NAS!

There is absolutely no need to have Kubernetes! 🎉

The NEW Product



FEATURES



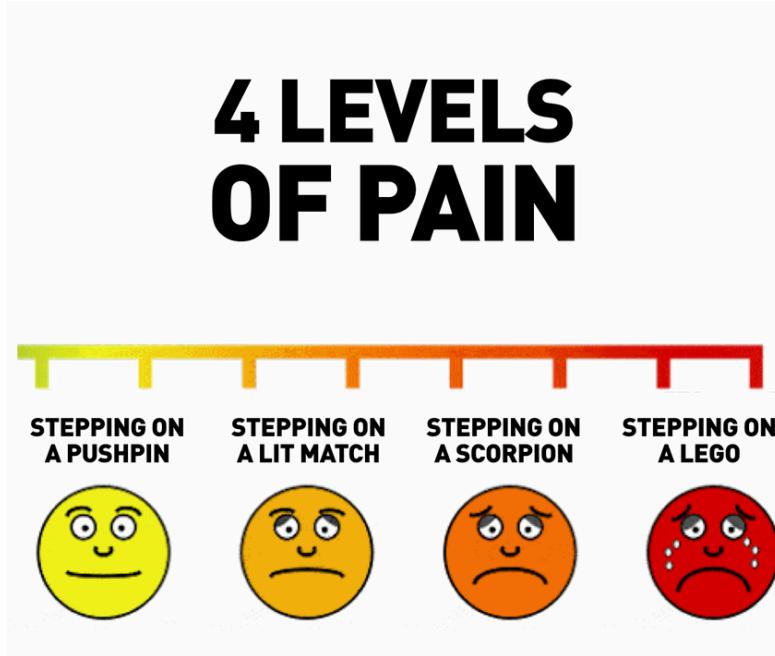




UPDATE...

More Pain

More Pain ...



- No contribution accepted (Telegram starter)
- API changes (Lovebox GraphQL)
- Java and Spring Boot Updates
- New & better ways to do things

Product Improvements

Product Improvements - What's Next?



- Producer-Driven Contract Testing
- Better Error Handling
- Logging and Monitoring improvements

Lessons Learned

Manifesto for Software Craftsmanship

Raising the bar.

As aspiring Software Craftsmen we are raising the bar of professional software development by practicing it and helping others learn the craft. Through this work we have come to value:

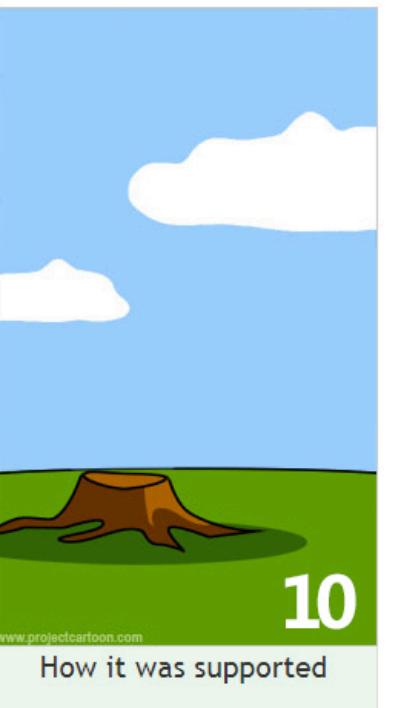
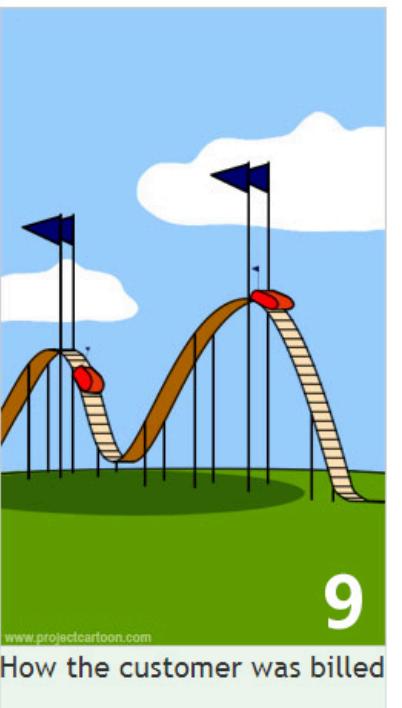
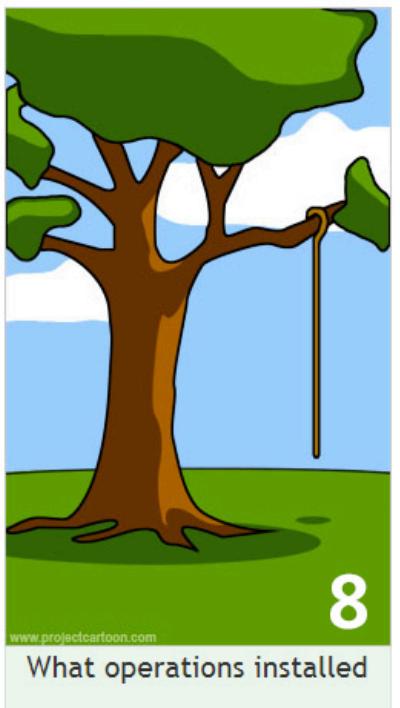
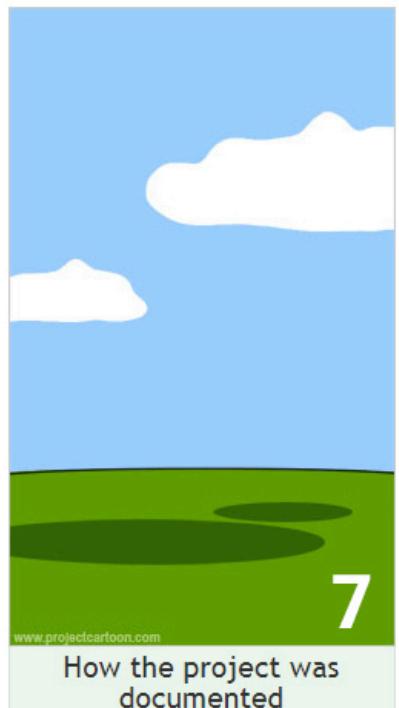
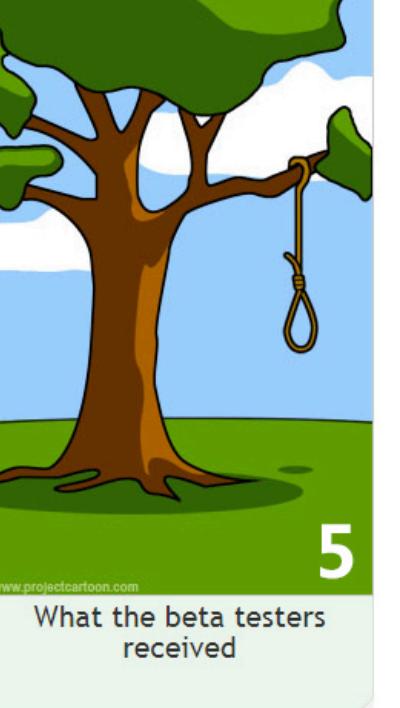
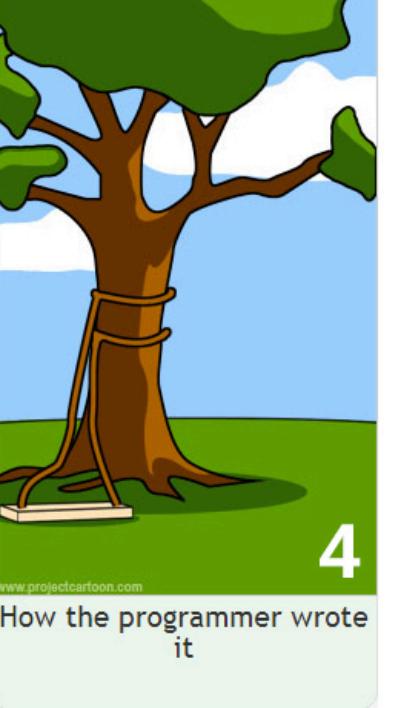
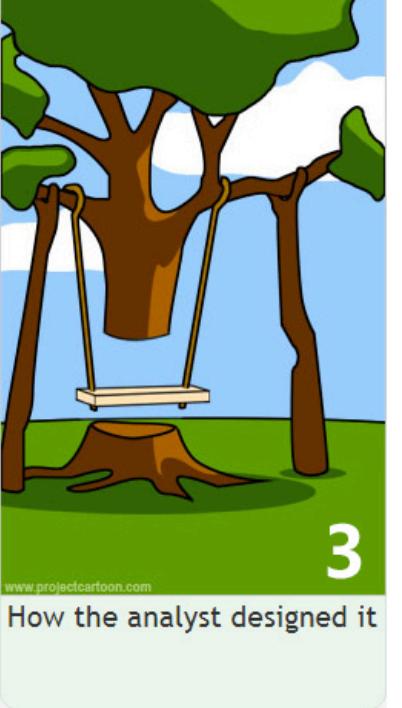
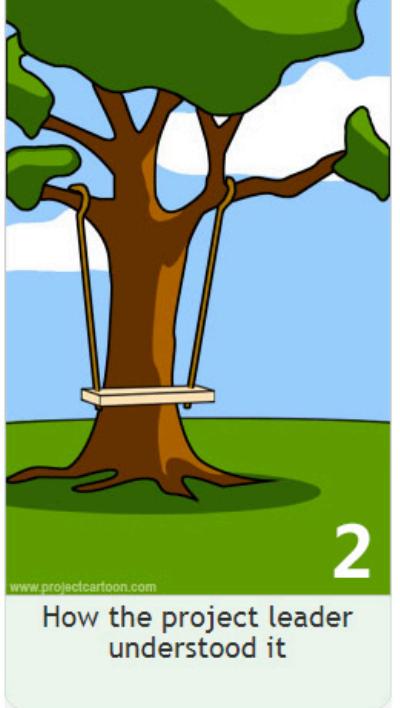
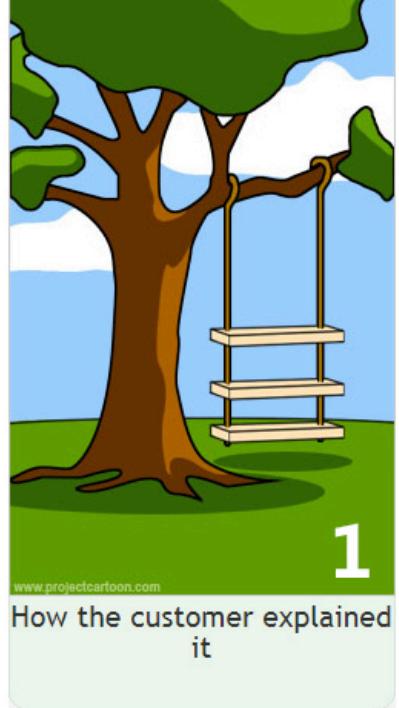
Not only working software,
but also **well-crafted software**

Not only responding to change,
but also **steadily adding value**

Not only individuals and interactions,
but also **a community of professionals**

Not only customer collaboration,
but also **productive partnerships**

That is, in pursuit of the items on the left we have found the items on the right to be indispensable.



What the customer really needed

Every developer should have a **leisure project** as a learning experience and a **testing ground** for new ideas. But **that's not the product** that goes into production and is **used by customers!**

Happy Coding!



Insights

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