

## FROM HACKATHON TO PRODUCTION IN A YEAR

Victor Kropp, JetBrains Software Engineer







HI!

## I am Victor Kropp

and I want to tell you a story how we went from hackathon to production in a year



and why you should do it to!







**48 hours** Just few hours of sleep...

# **100+ participants**

Mixed teams and not only developers!

## **Winners' Cup** And valuable prizes too





# **DO ANYTHING YOU WANT**

100 kg musical instrument, drawing robot or a plugin to your favorite IDE







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#### MANY PROJECTS WENT TO PRODUCTION

## dotMemory Unit Toolbox App



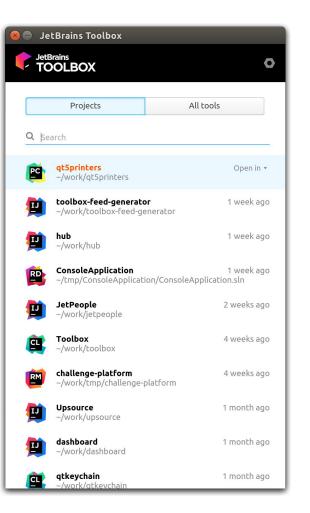




## **TOOLBOX APP**

A control panel for your tools and projects









#### THE TOOLBOX APP IS SPLIT INTO

**Backend** Qt C++ **Frontend** QtWebEngine (Chromium 56) JavaScript



**RING UI** 

Our Web UI Controls Library

<u>jetbrains.org/ring-ui</u>

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#### JetBrains Toolbox Dashboard Projects JetBrains TOOLBOX 0 **Backup Settings** Projects All tools \${user.home}/.jetpass/backu **Backup** location III IntelliJ IDEA Ultimate Install 👻 The most intelligent Java IDE /Users/jetbrains/.jetpass/backu MPS . MPS Filename prefix hub-backup-Install 🔻 DSL development environment PhpStorm PS Archive format zip Install 👻 tar.gz ightning-smart PHP IDE Install 2016.3 Nightly 163.5374 Install 2016.3 EAP 163.4830.18 **Project Rider** RD Every day at 9 am Backup interval $\nabla$ C# IDE Install 2016.2 Nightly 162.1970 Install 2016.2.1 162.1889.1 Regular backup is disabled PyCharm Comm Install 2016.1.2 PC 145.1616.3 Backup files rotation Every 12 hours Developers unt of backup files, 0 - to turn rotation off. Every day at 9 am PE PyCharm Edu Install 👻 Professional tool to learn Every day at 2 am Create backup programming with Python Custom PyCharm Professional PC Install 👻 Backup file Created Full path Python IDE for Professional Groups<sup>1</sup> Access<sup>0</sup> Authentication General Stevo TheCat **Full Name** Ban user Login catsrule Avatar ST Email



### **UI IN HTML/CSS/JS**

#### Pros

- ► Nice
- Modern
- Everywhere

## Cons

- Embedded browser may be resource consuming
- Frontend expert required





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#### FRONTEND

**React** declarative JavaScript library for building user interfaces

facebook.github.io/react

```
class ProjectList extends React.Component {
  render() {
    return (
      <div>
        <div className="project-list search">
          <Icon size={Icon.Size.Size14} glyph={require('search.svg')} />
          <TextInput ref="input" placeholder="Search" />
        </div>
        <div>
          {recentProjects.map((project) => (
            <project project={project} /></project
          ))}
        </div>
      </div>
    );
```

**EXAMPLE COMPONENT** 



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#### WEBPACK

JS + dependencies are packed into single index.js and index.html:

myWebView->load(QUrl("qttp/indexabbost)\$980"));





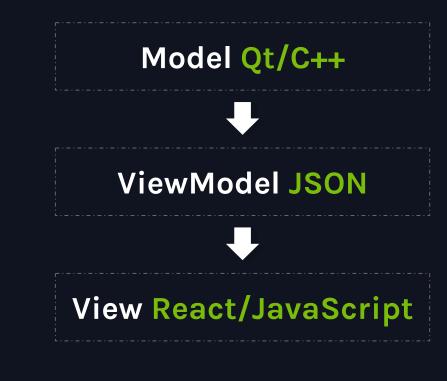
### FETCHING PRODUCT DESCRIPTIONS

- ► Single file in **JSON**
- Update regularly
- The same JSON is used in both C++ and JS code



```
"id": "IDEA-U", "name": "IntelliJ IDEA Ultimate",
"description": "The most intelligent Java IDE",
"icon url": "data:image/svg+xml;base64,...",
"licensing": { "product": "Idea" },
"build": "171.972.3", "version": "2017.1.2",
"major version": { "name": "2017.1" },
"package": {
   "os": "windows",
   "type": "nsis", "command": "bin/idea.exe",
    "url": "https://download.jetbrains.com/idea/ideaIU-2017.1.2.exe",
    "size": 407042160,
    "checksums": [ { "alg": "sha-256", "value": "..." } ]
```





SEPARATION OF



Some obvious things worth repeating





## **DREAM TEAM**

## **CORE DEVELOPERS**

Windows

macOS

Linux

## AND

UI/UX Designer

**UI Developer** 

IntelliJ Developer







## CROSS-PLATFORM DEVELOPMENT

- There are lots of platform specific things
- Every feature must be tested on all supported operating systems





CROSS-PLATFORM DEVELOPMENT

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## **PLATFORM SPECIFIC**

- ► .plist read/write
- Menubar icon theming
- System wide notifications
- ► OS integration



## AUTOMATE EVERYTHING

- Continuous Integration server compiles the app after each commit
- and runs tests
- Release is published with a single click



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## DESIGN FOR COMPATIBILITY

- Backward compatibility
- Forward compatibility







## ALWAYS KEEP SECURITY IN MIND

- ► HTTPS only
- Signed data source
- Checksums for downloads



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## DOGFOODING

- Use your own application
- Get early feedback from colleagues



Successful release

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# 20% project

Side project supported by company



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# **100,000+ users** estimated



## Just discovered **@JBToolbox** from **@jetbrains**. Yet another amazing product from Jetbrains. Would definitely recommend.

https://twitter.com/jnzavrl/status/897000758633168897



Vedran Pavić @vedran\_pavic

The **@JBToolbox** app makes managing **@jetbrains** tools almost effortless! Highly recommended, see jb.gg/toolbox-app for more details.

https://twitter.com/vedran\_pavic/status/753542146842562560



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- Hackathons are fun
- There is a lot to be done afterwards
- HTML UI is awesome
- Team is the most important

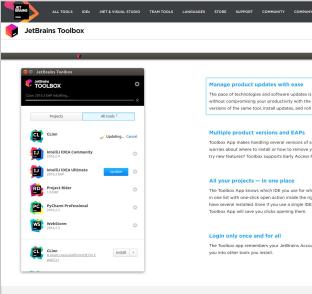




#### **TOOLBOX APP**

Check it out at jetbrains.com/toolbox/app

Follow @JBToolbox for updates





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The pace of technologies and software updates is ever-accelerating. Stay up-to-date without compromising your productivity with the Toolbox App: easily maintain several versions of the same tool, install updates, and roll them back instantly if needed.

#### Multiple product versions and EAPs

Toolbox App makes handling several versions of a product easy and painless. No more worries about where to install or how to remove your favorite tool. Curious enough to try new features? Toolbox supports Early Access Programs too.

#### All your projects - in one place

The Toolbox App knows which IDE you use for which project. It shows all your projects in one list with one-click open action inside the right IDE, and in its right version if you have several installed. Even if you use a single IDE and have multiple projects, the Toolbox App will save you clicks opening them.

#### Login only once and for all

The Toolbox app remembers your JetBrains Account and uses it to automatically log you into other tools you install.





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Toolbox App





## THANKS!

## **Any questions?**

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Victor Kropp **@kropp** victor.kropp@jetbrains.com



## (°°) Thank you!

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Victor Kropp **@kropp** victor.kropp@jetbrains.com