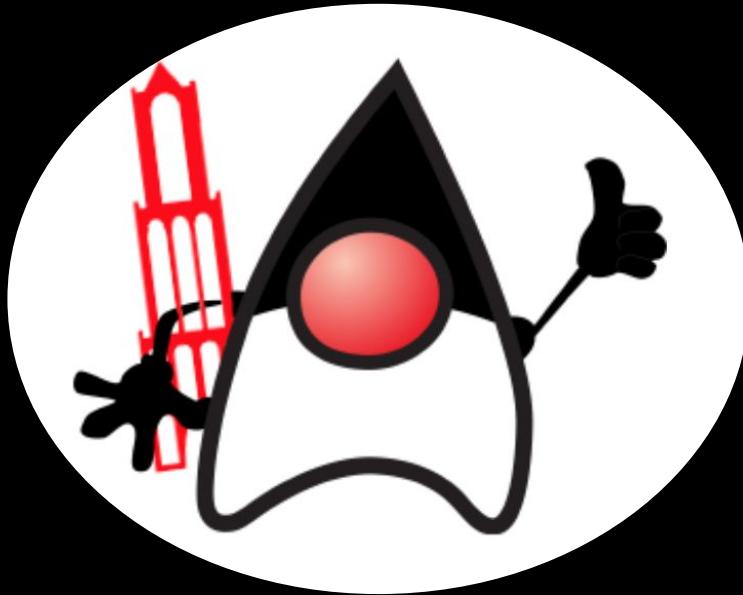


Thanks to the
UtrechtJUG



And for hosting

blue4IT

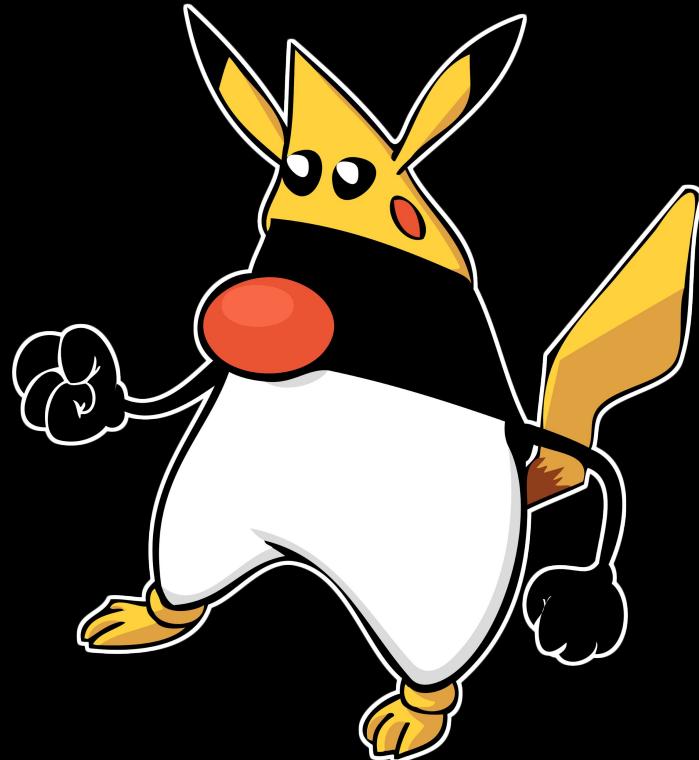
COMPARING POKEMONS WITH IDEs



@KoTurk77

The Battle of the IDEs

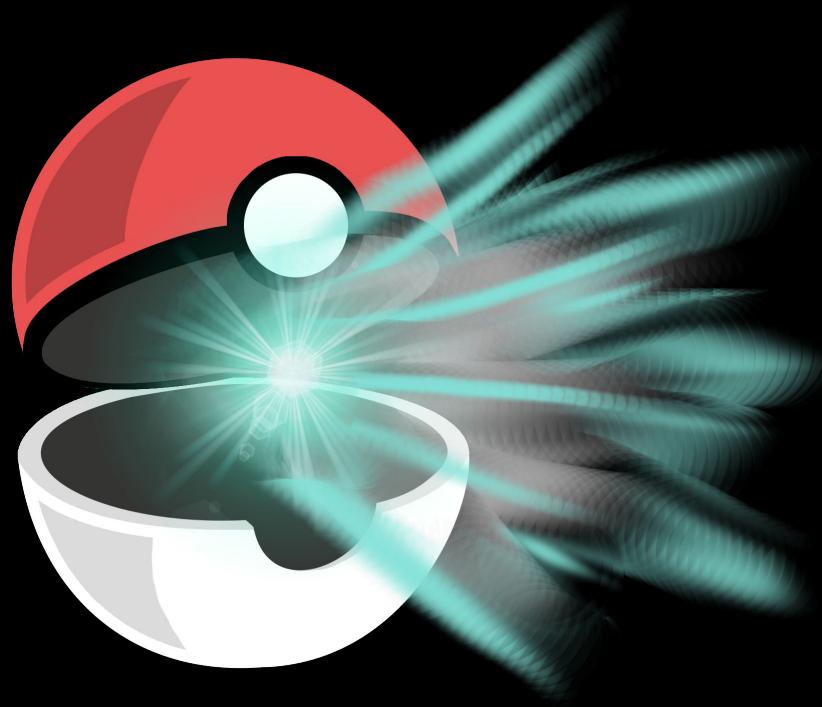
by Dukeachu (and Ko Turk)



Fight with colleague

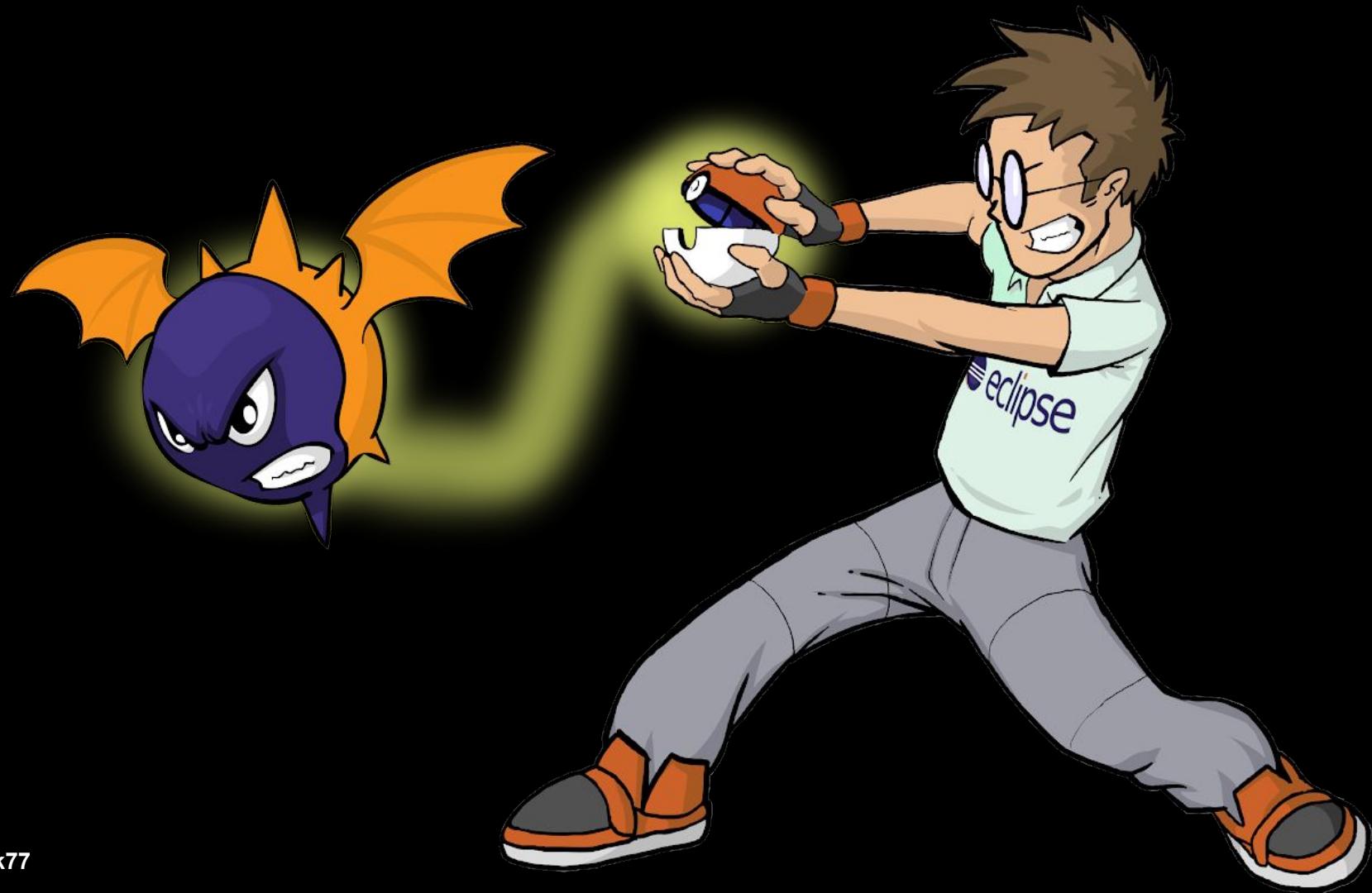


**He was throwing
a pokeball**

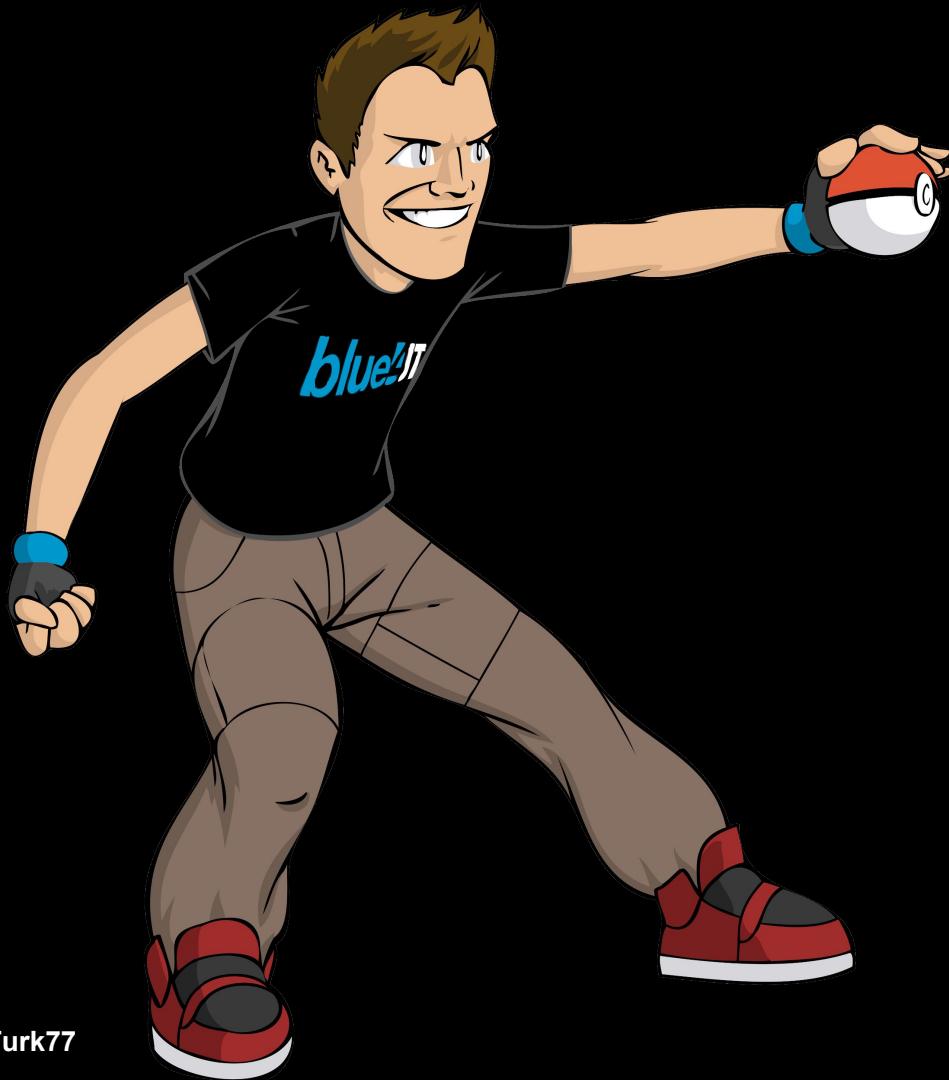


And what happened?

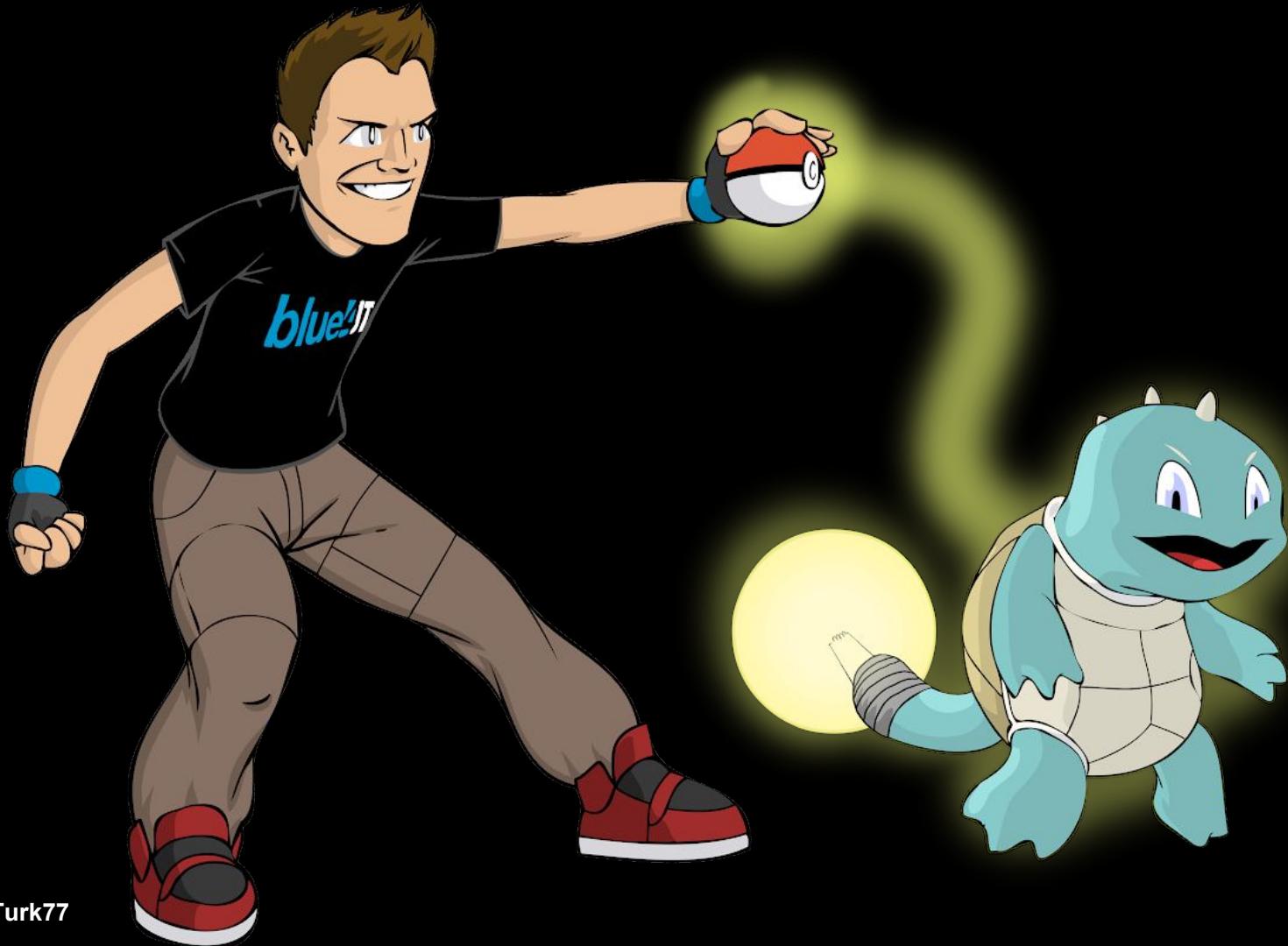




Sooooo.....

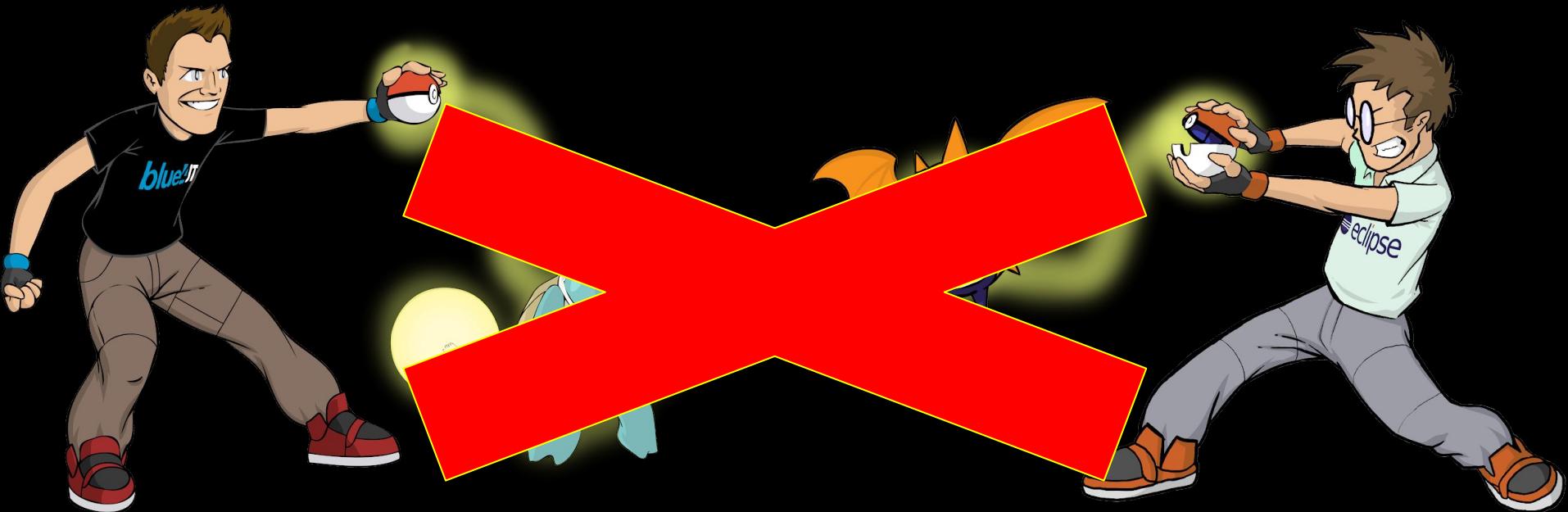


I was getting
my Pokéball



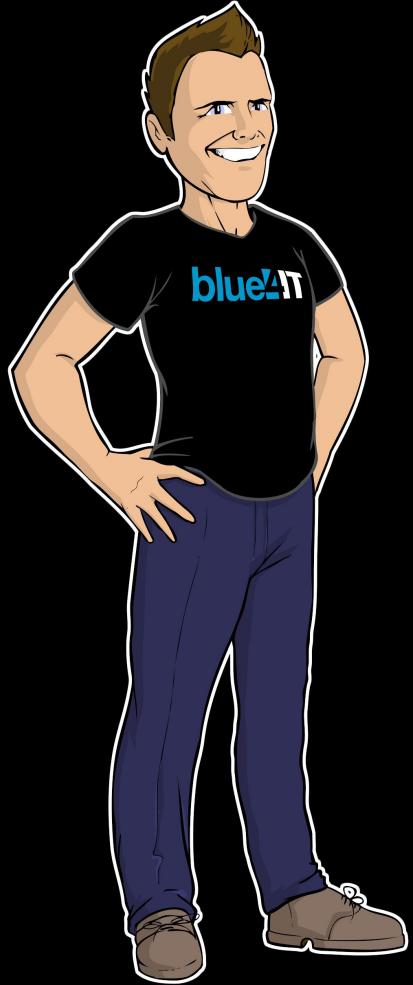
Question to audience:

Who do you think is the winner?



An IDE is something personal, don't try
to force it on other people





Introduction

Sooo, who am I?



Learning (and to have fun)

conferences / meetups / internal
knowledge share meetings



Working

@Rabobank



Working hard

Play hard



Likes to drive

the trial motor



Going to stadium

In Utrecht

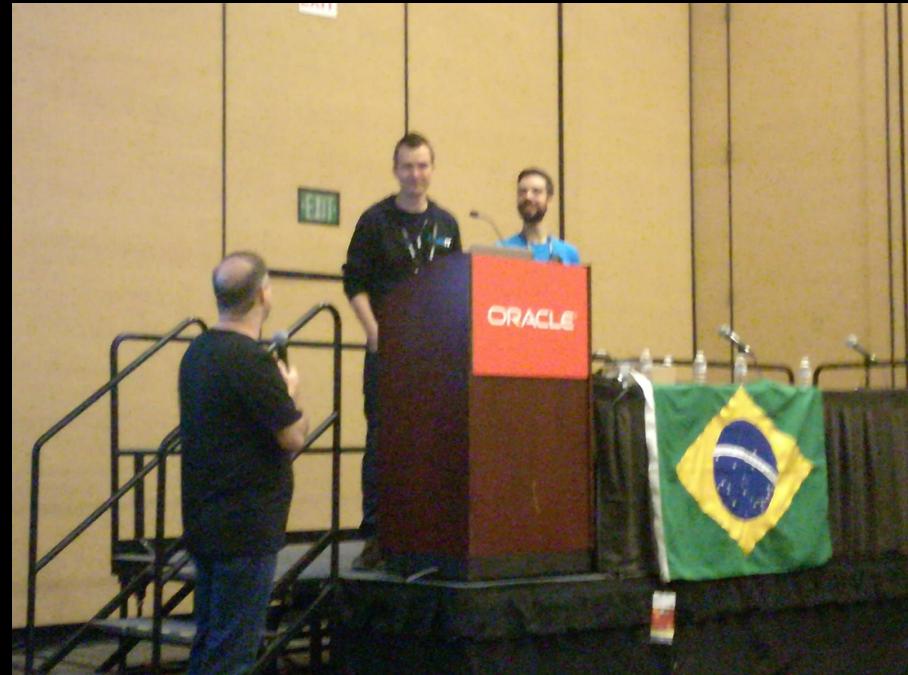


Playing baseball



Member of the UtrechtJUG

Speaker Incubator Program



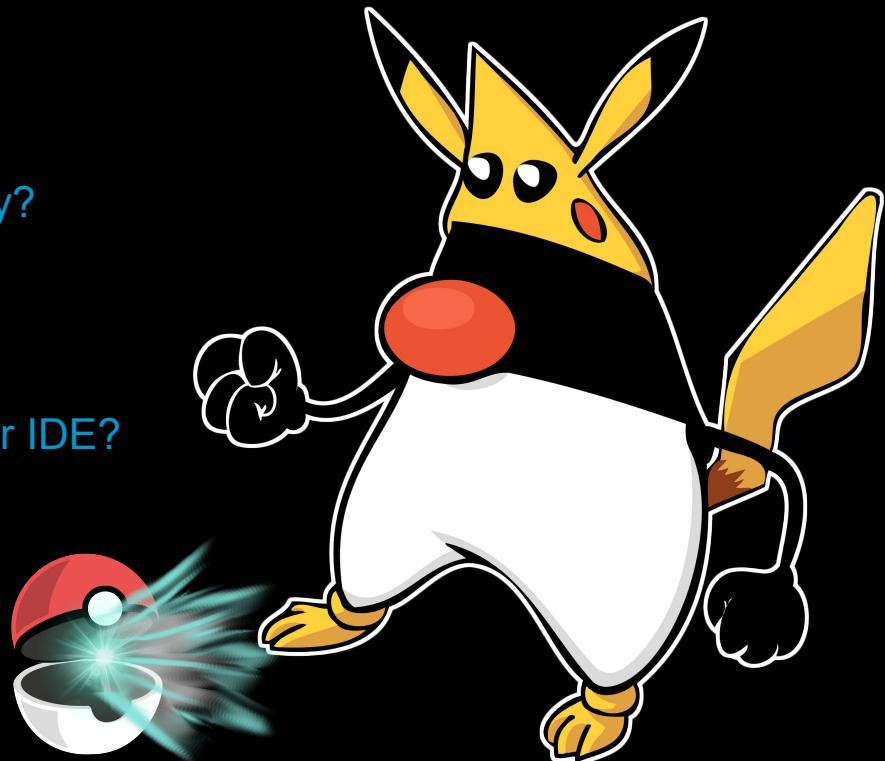
Program

Introduction

Research

- What is your (main) role in the company?
- Programming languages
- What is your favorite IDE?
- Based on (main) role in the company
- Do you want to switch (or try) to another IDE?
- Why is the community using this IDE?!

- Which IDE to use in which situation

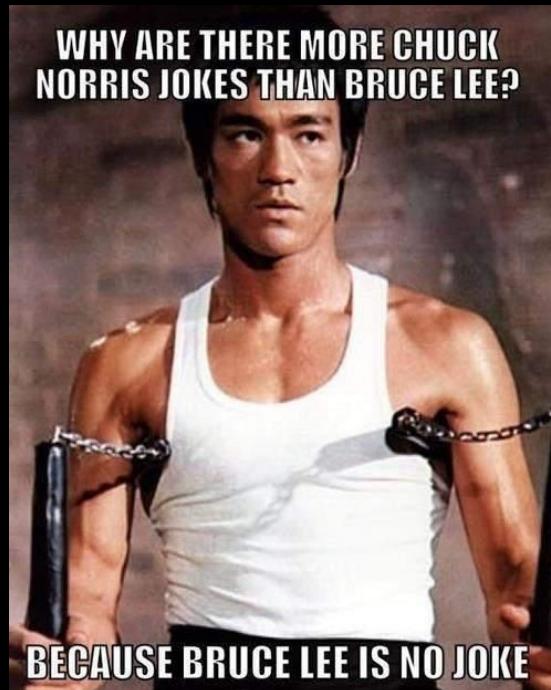
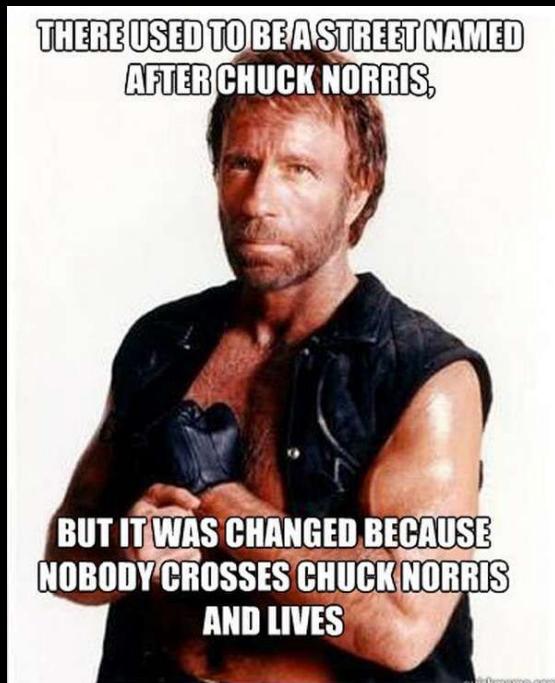


Goal?!

That you (re)consider your choice for an IDE.



Like Chuck Norris and Bruce Lee



Like Star Wars or Star Trek



STAR WARS

Star Trek can go "live long and prosper" somewhere else.



**WHAT IF I TOLD YOU STAR
WARS IS BETTER THAN STAR TREK**



LIAR!

Like Linux / Windows / Mac as seen by

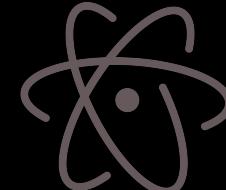
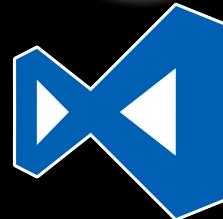
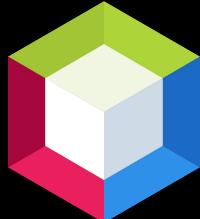
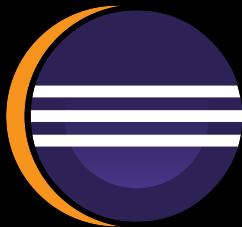
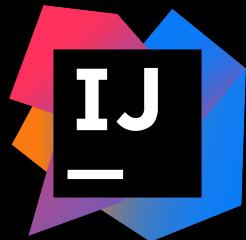


**Mac
Fanboys**

**Windows
Fanboys**

**Linux
Fanboys**

And now the Battle between IDEs or editors ;-)



But what is an IDE?

An **integrated development environment (IDE)** is a software application that provides comprehensive facilities to computer programmers for software development.

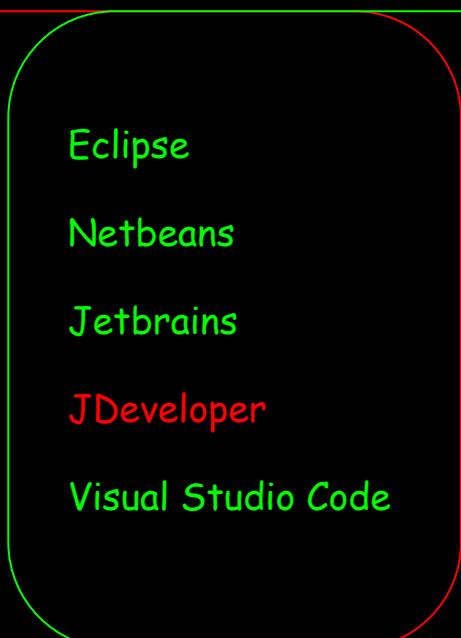
And what is an editor?

An editor is simply that, a tool that is designed to edit text.

Which IDEs are there for devs (Wikipedia)?



BlueJ
DrJava
Geany
JCreator
Greenfoot
JBuilder
Xcode (Apple)
jGRASP
Servoy
SlickEdit
Rational Application Developer
Understand



Eclipse
Netbeans
Jetbrains
JDeveloper
Visual Studio Code



Anjuta
Atom
Brackets
Aptana Studio
Codeanywhere
CodeLite
Eclipse Web Tools
Komodo IDE / Edit
Nodeclipse NTS
NuSphere PhpED

Program

Introduction

Research

- What is your (main) role within the company?
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- Why is the community using this IDE?
- Which IDE to use in which situation



Research



Venkat Subramaniam
@venkat_s

Volg je nu

Hey folks, [@KoTurk77](#) is running a nice survey and can use our help with a quick feedback. Could you participate and also RT? Thanks.



Josh Long (龙之春, জোশ, Дж ওশ লংগ) @star...
Josh Long (جوش لونق)
Spring Advocate [@Pivotal](#)
spring.io/team/jlong; [@david_syer](#)'s my spirit animal; [@pearson](#) bit.ly/1HUCRWr; [@OReillyMedia](#) oreil.ly/1CiSz85



VirtualJUG (vJUG) @virtualJUG
Hi from VirtualJUG (vJUG), the world's first online-only Java User Group. Join us, and the best Java experts in the community!
Tweets by [@sjmaple](#) and [@shelajev](#)



Guillaume Laforge @glaforge
Developer Advocate at [@Google](#) for [@GoogleCloud](#) during the day, and [@ApacheGroovy](#) programming language project PMC Chair & [@java_champions](#) at night



Brian Vermeer @BrianVerm
Software Engineer [@Blue4IT_NL](#) | Java Developer | Functional Programming Enthusiast | Public Speaker | Dutch Air Reserve | Taekwondo Master | [@dev_champions](#)



Bruno Souza @brjavaman
Since 1995, helping Java developers to improve their careers and work on cool projects with great people! [@Java](#) Evangelist [@JCP_ORG](#) Executive [@SouJava](#) Leader



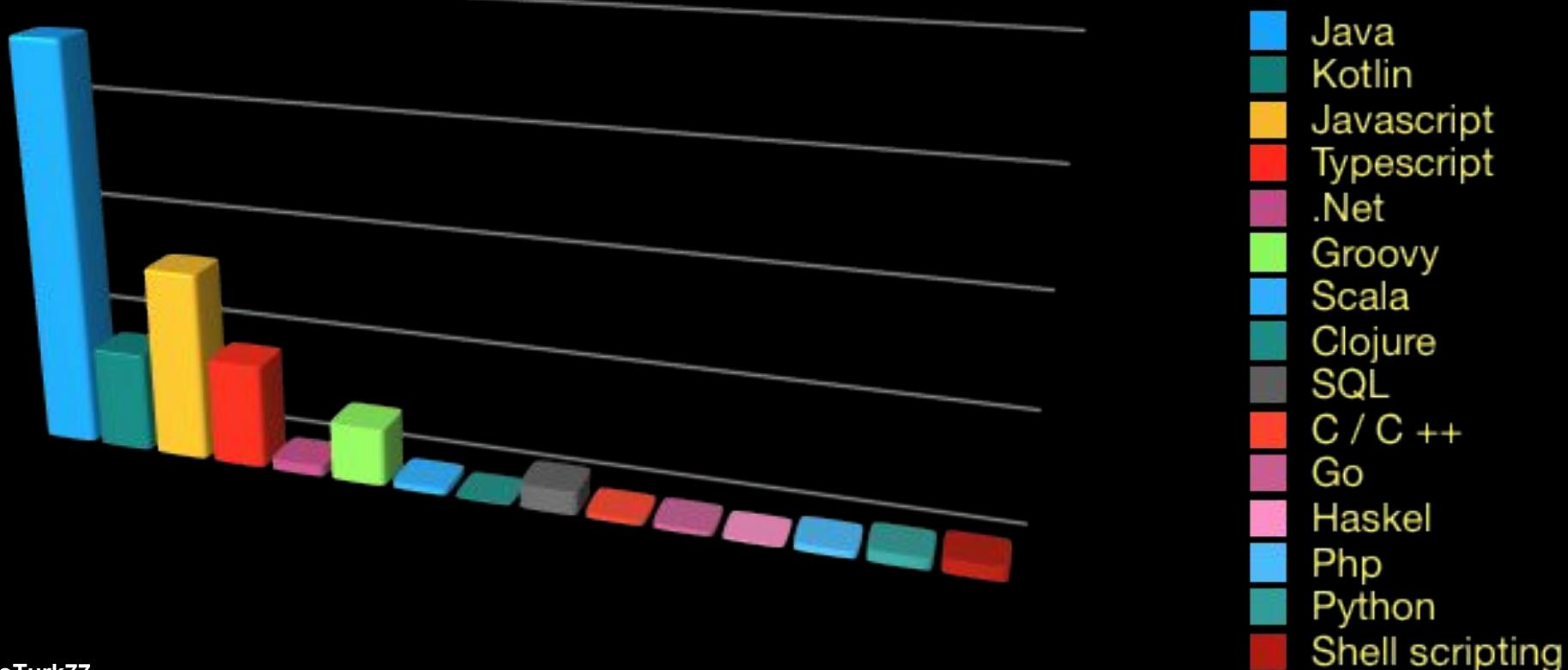
Marcus Biel
Java Clean Code Evangelist, International Speaker, Author, Top Java Influencer, [@jcp.org](#) Member, Clean Code Coach



Bruno Borges @brunoborges
Brazilian, Developer Relations & Engagement Strategist promoting great developer technologies to the world. Now [@Java](#) [@Microsoft](#) #Azure. Previously [@OracleDevs](#)

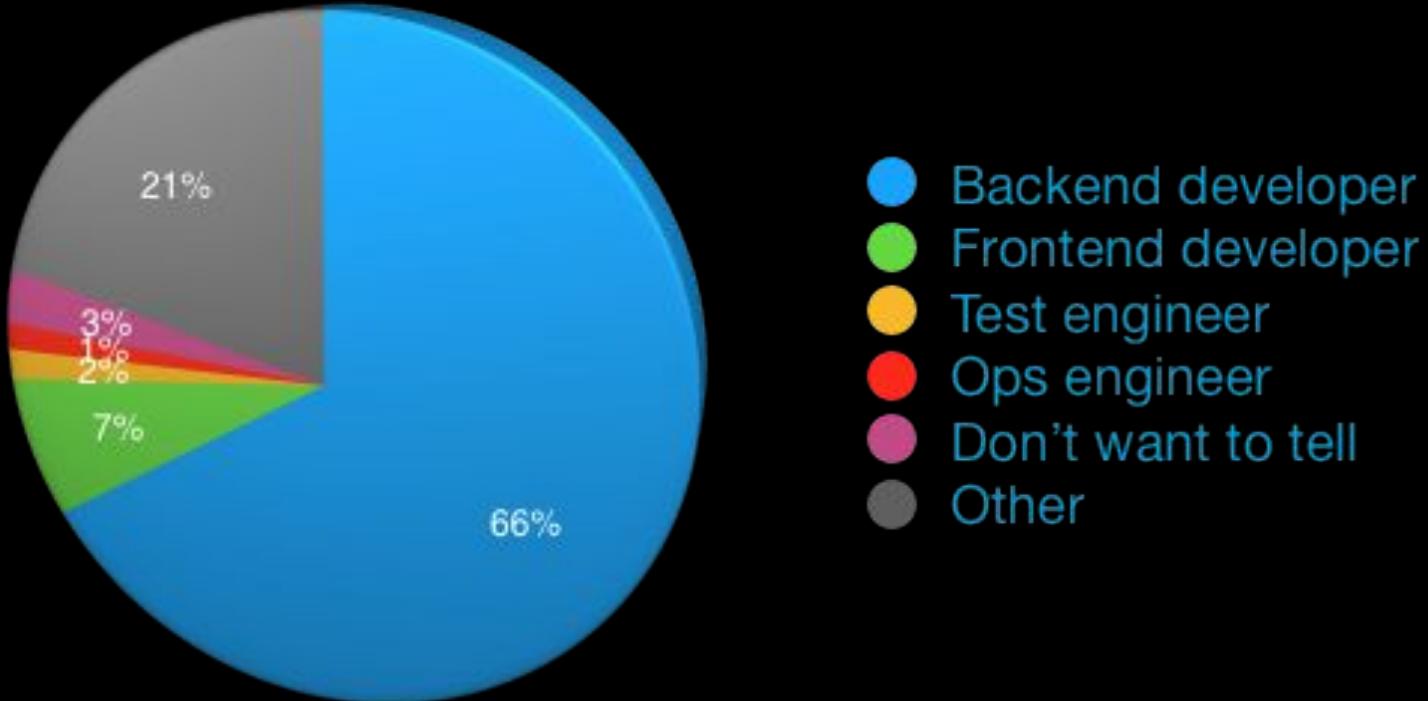
Who is programming
in Java?

Programming languages



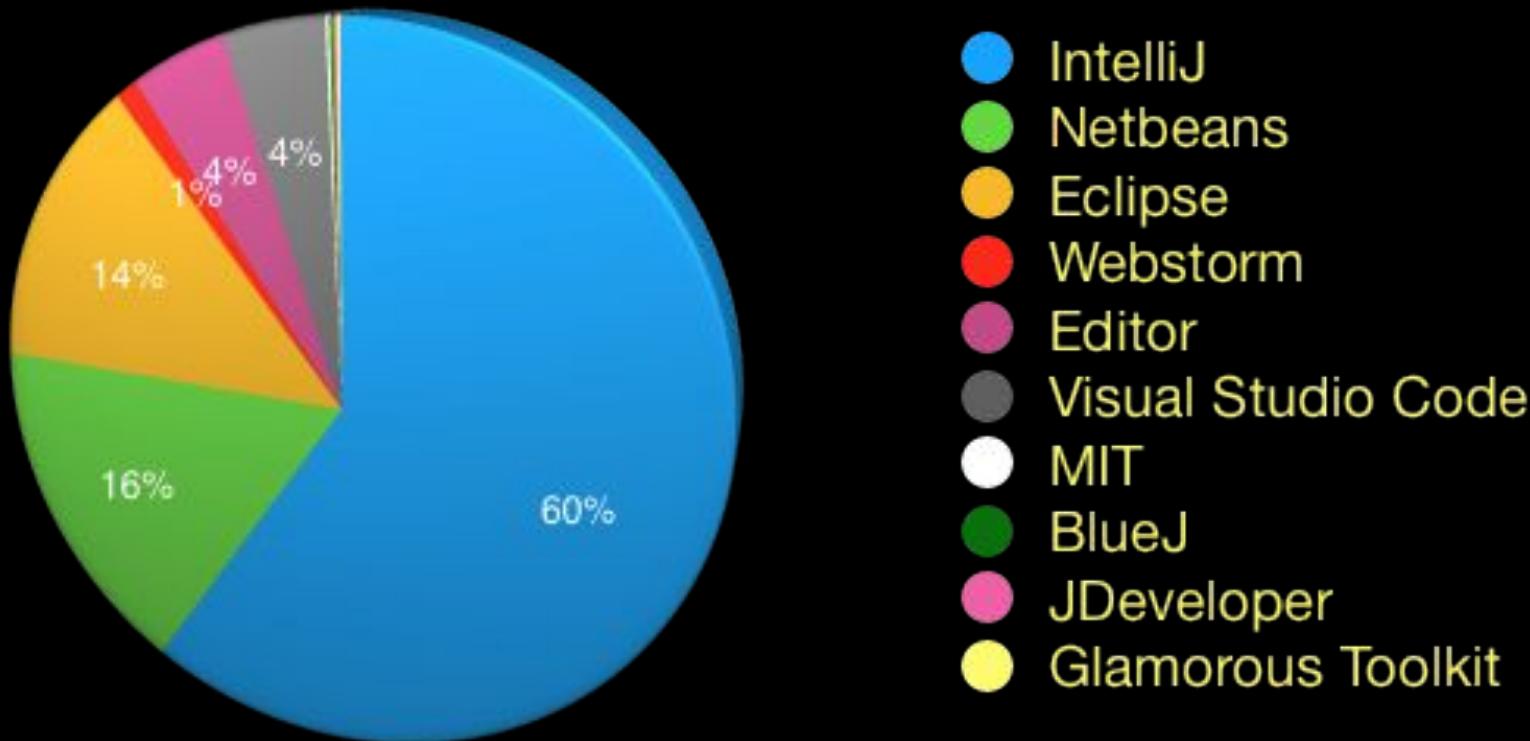
Are there any
frontenders?

What is your main role within the company?



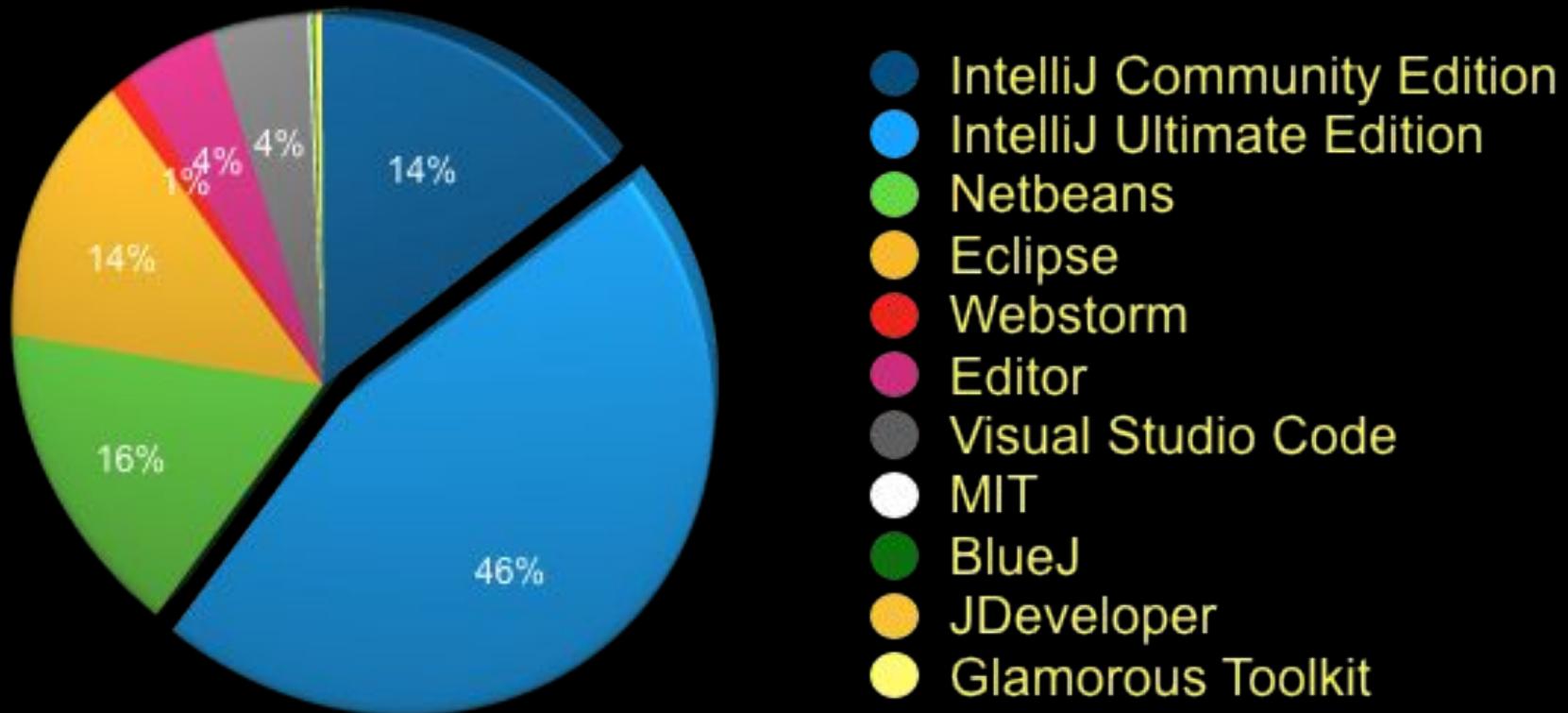
Who is using
IntelliJ IDEA?

What is your favourite IDE? (1)

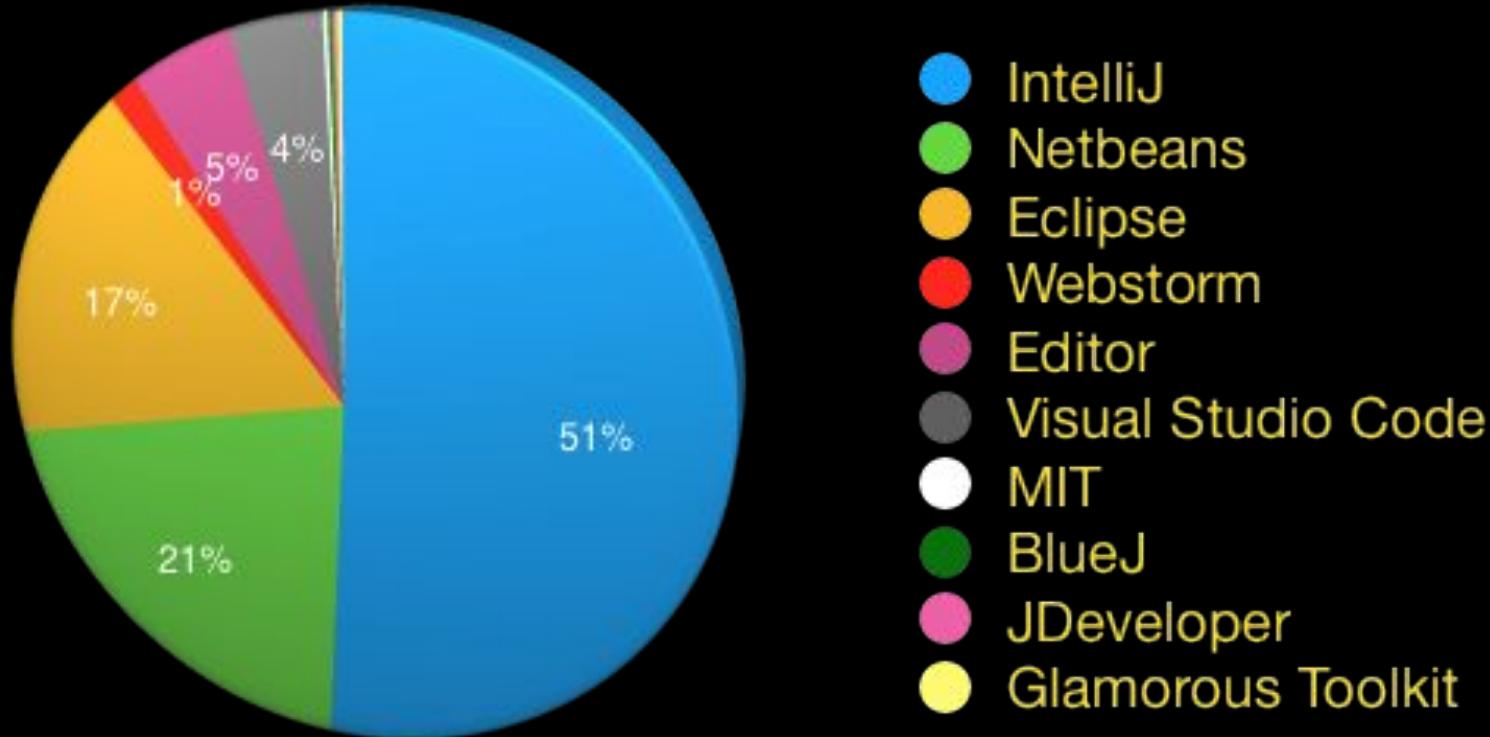


Who is using the free edition of
IntelliJ IDEA?

What is your favourite IDE? (2)

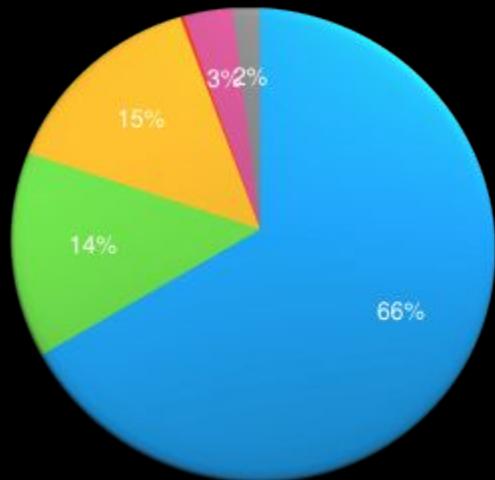


What is your favourite IDE (Without Kotlin support)?

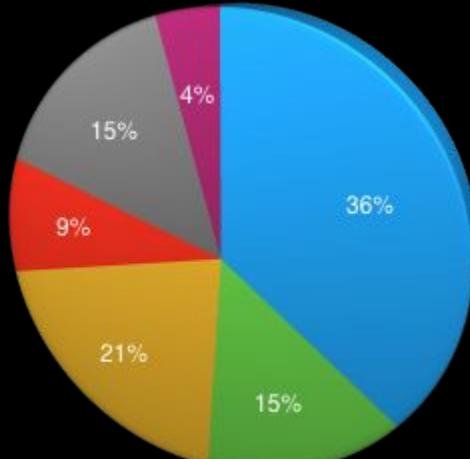


Based on (main) role within company

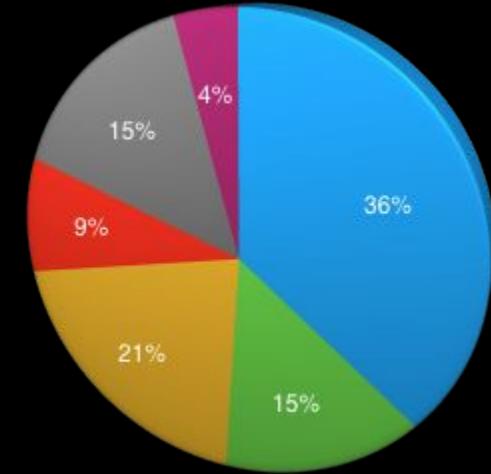
Backend developers



Frontend developers



Other

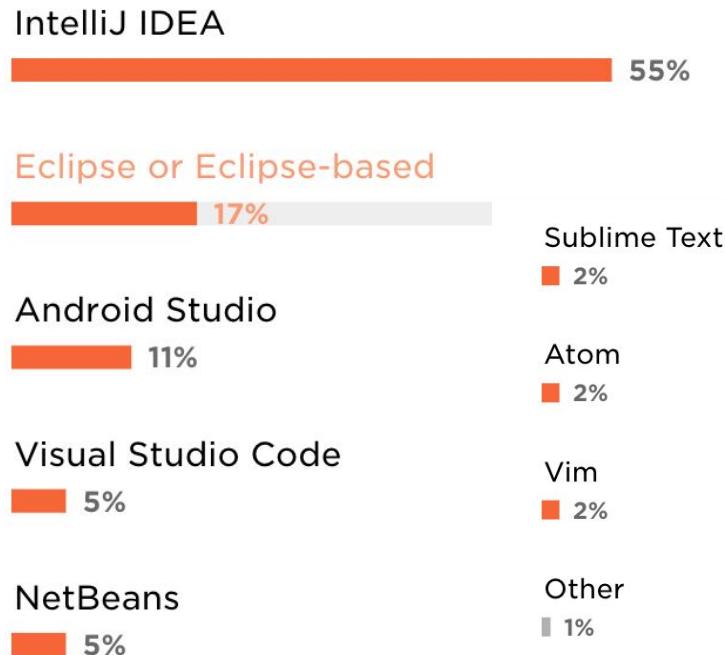


- IntelliJ
- Webstorm
- Notepad

- Netbeans
- Vi/Emacs
- MIT

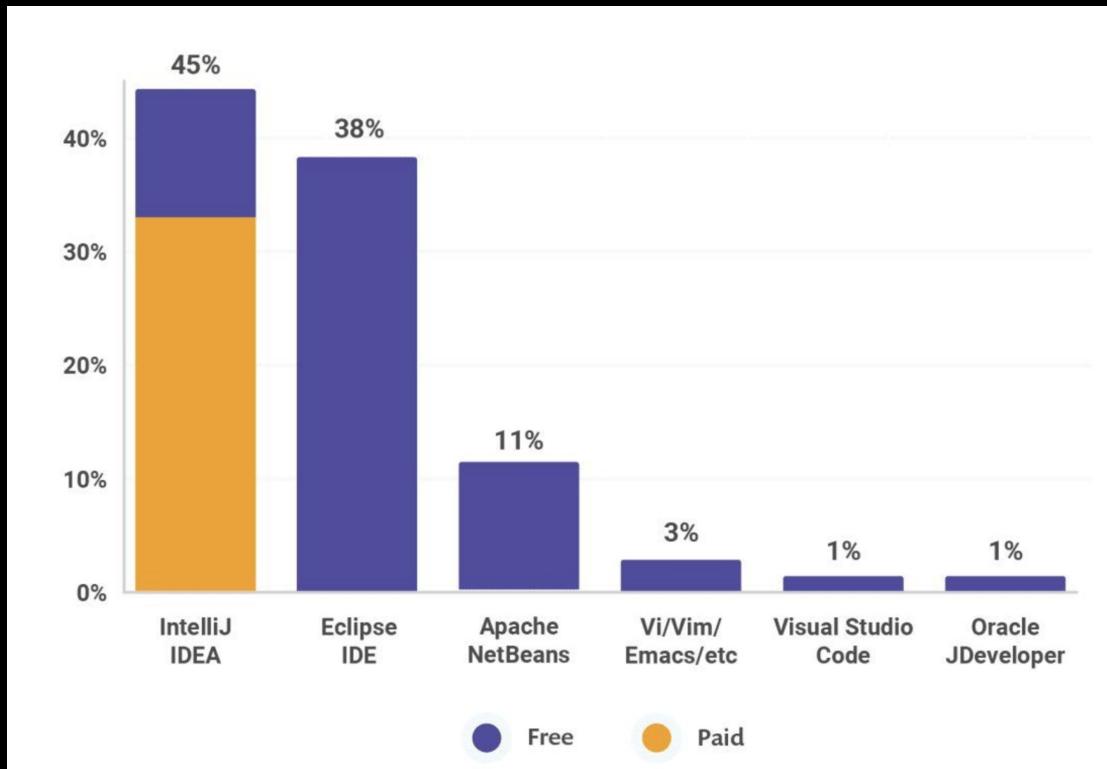
- Eclipse
- Visual Studio Code
- BlueJ

Research DevEcoSystem (Jetbrains)

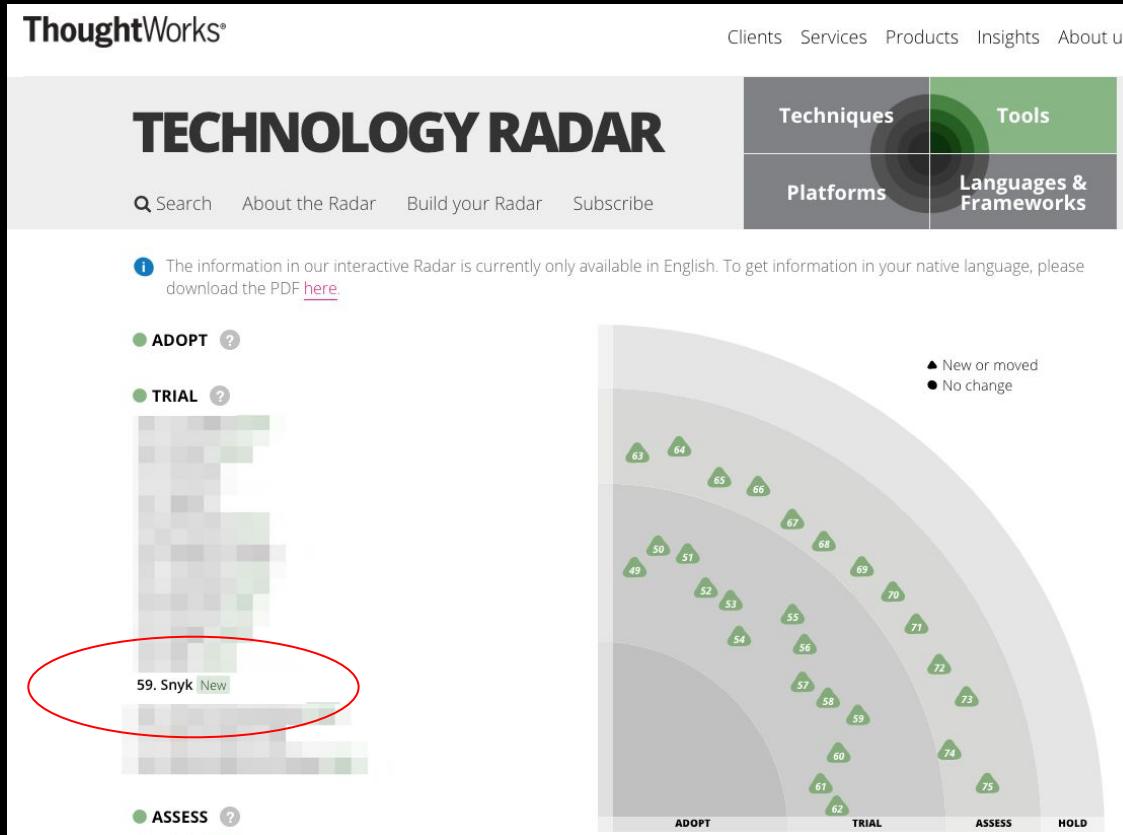


<https://www.jetbrains.com/research/devecosystem-2018/java/>

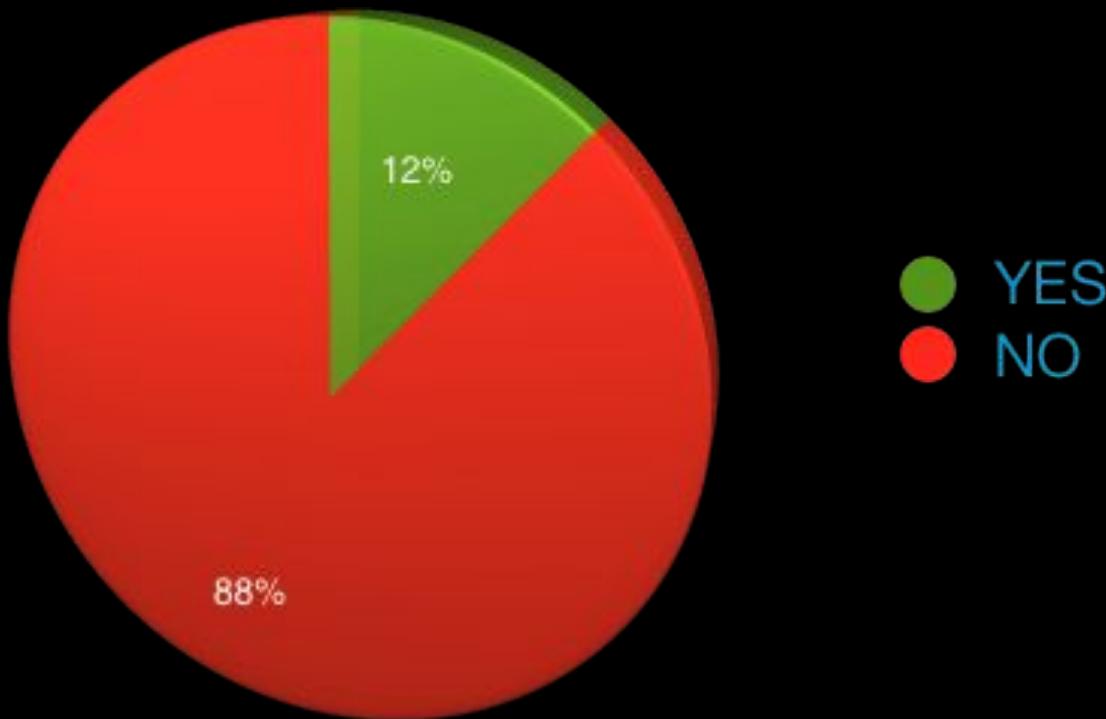
Other researches (@snyk.io)



You seen the Snyk plugin?



Do you want to switch (or try) another IDE?



So why....

Do I need to use Eclipse?

```
1 package l.lovv.eclipse;
2
3 public class MyEclipse {
4
5     public static void main(String[] args) {
6         System.out.println("Eclipse ROCKS");
7     }
8 }
```



Why do you need to try Eclipse?

Open source / Free

A lot of plugins (marketplace)

Support

Multiple projects in one window



Why do you need to try IntelliJ IDEA?

Support! (Great Java, Kotlin and Maven support)

Fast / Responsive / Performance

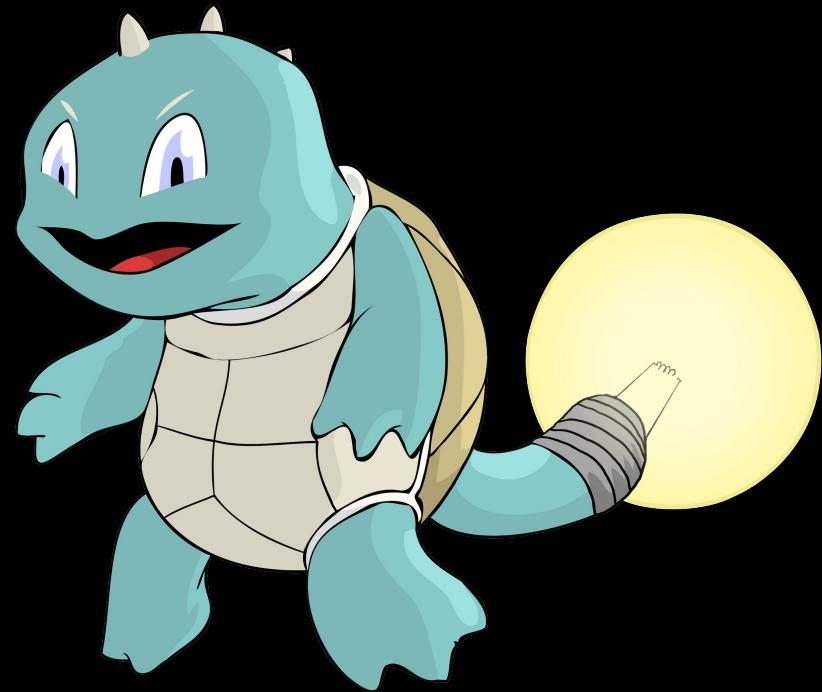
A lot of plugins

Debugging

Auto completion

Code completion

Everybody in my team is using it.



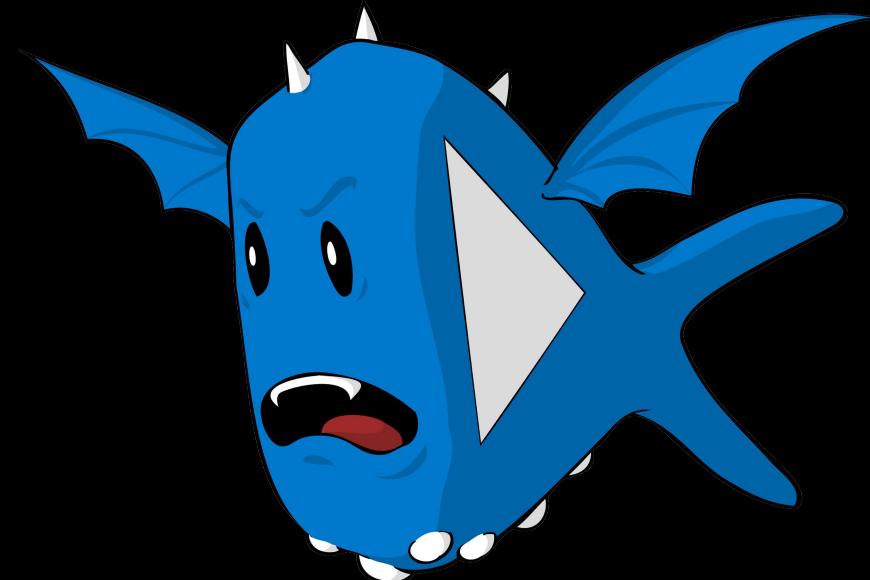
Why do you need to try VSCode?

Fast / Responsive / Performance

Open source / Free

A lot of plugins

Lightweight / Low resources



Why do you need to try Netbeans?

Maven integration

Works out of the box

Open source / Free

Support

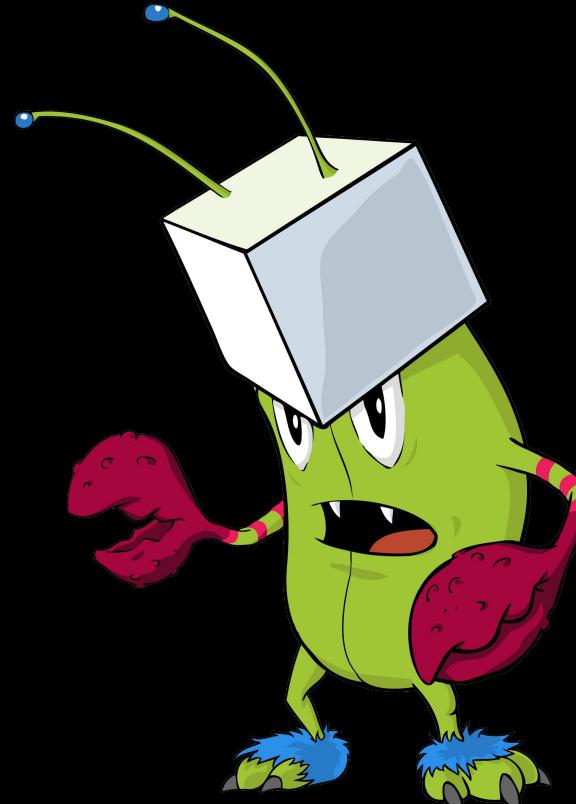
James Gosling is a huge fan of it ;-)

 James Gosling
@errcrafc

Volgen ▾

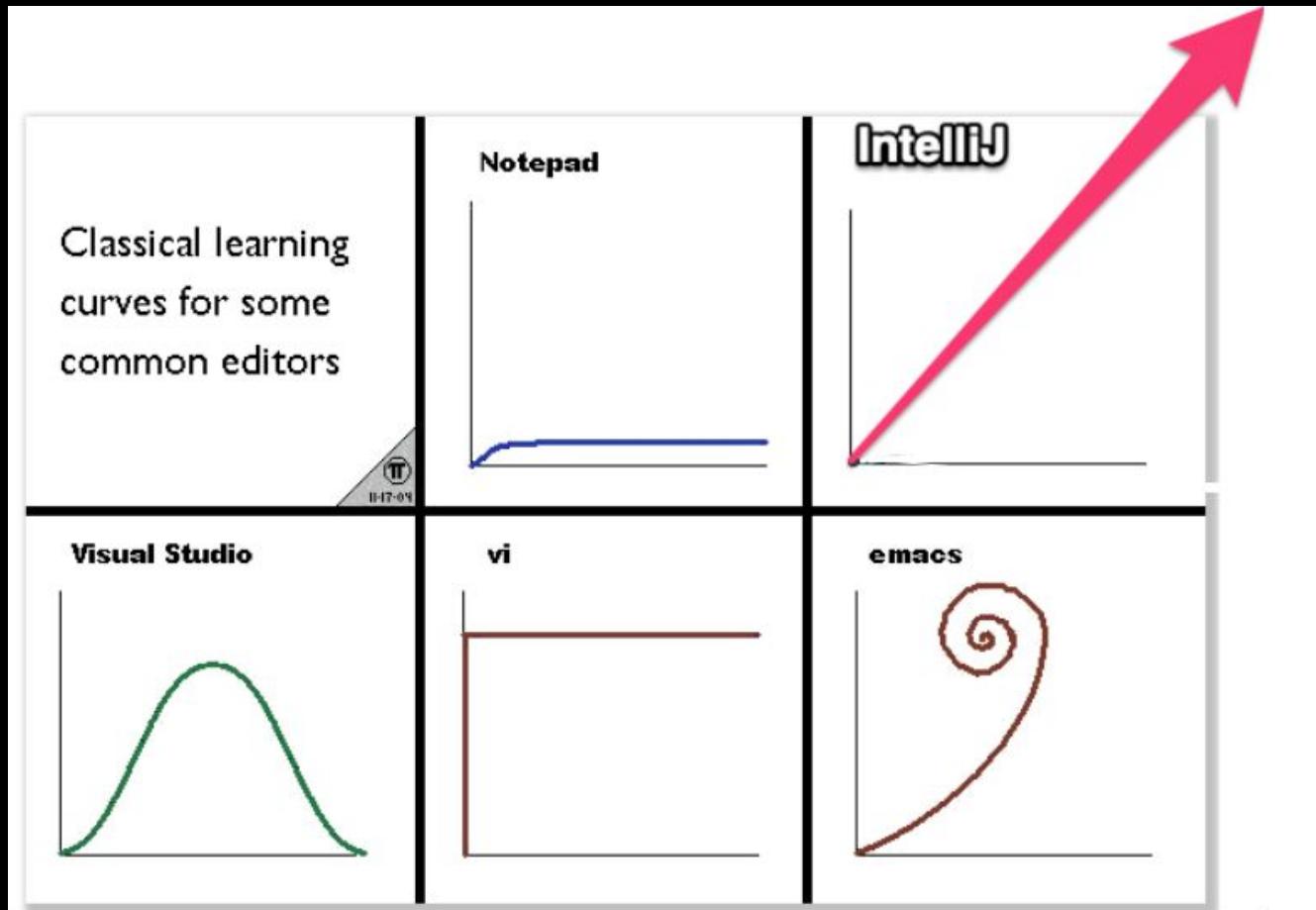
Als antwoord op @netbeans @TheASF @arungupta

Yea!! I'm a huge NetBeans fan. I've been using NB 10 since the voting candidates started to come out. I'm on VC3 right now and it's been rock solid for me. NetBeans having become an Apache project is wonderful



And then we have
emacs

**Anyone used / is using
emacs?**

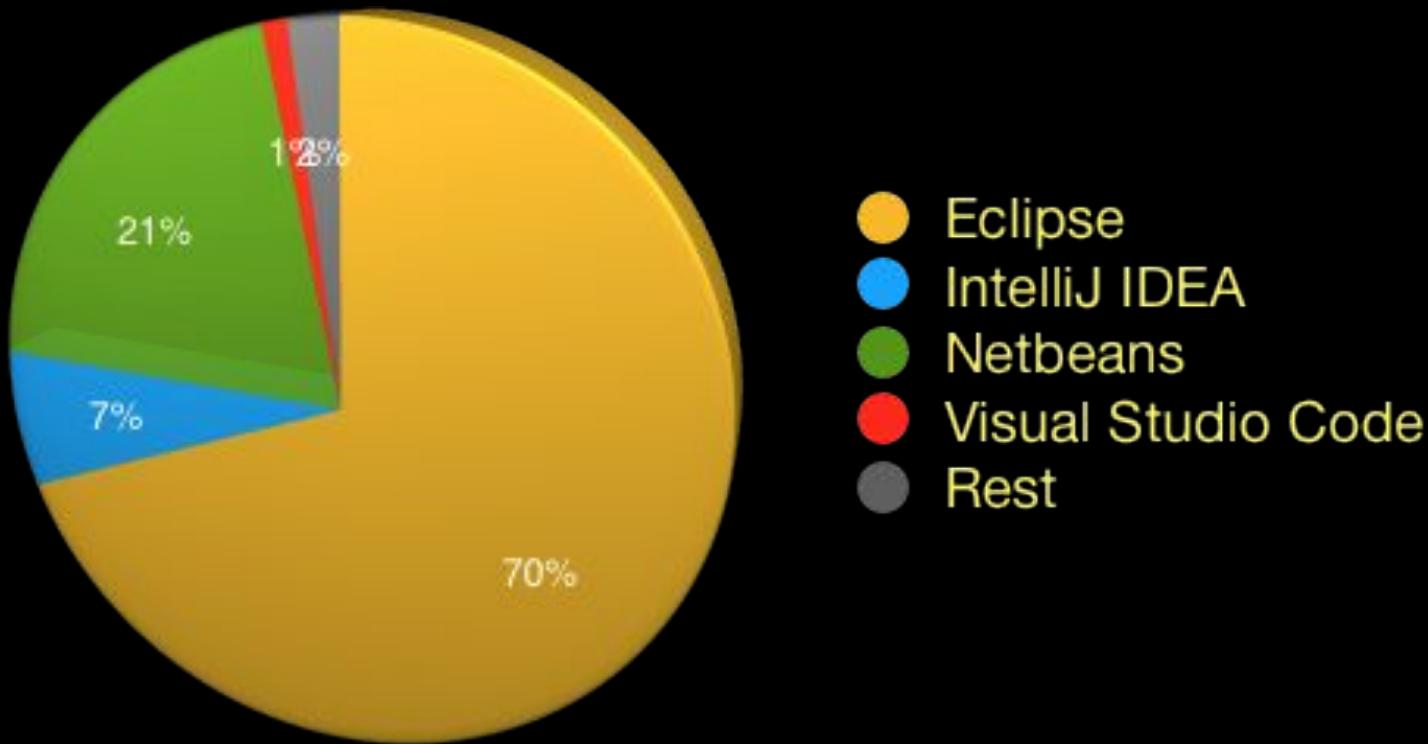


http://ergoemacs.org/emacs/emacs_fun.html

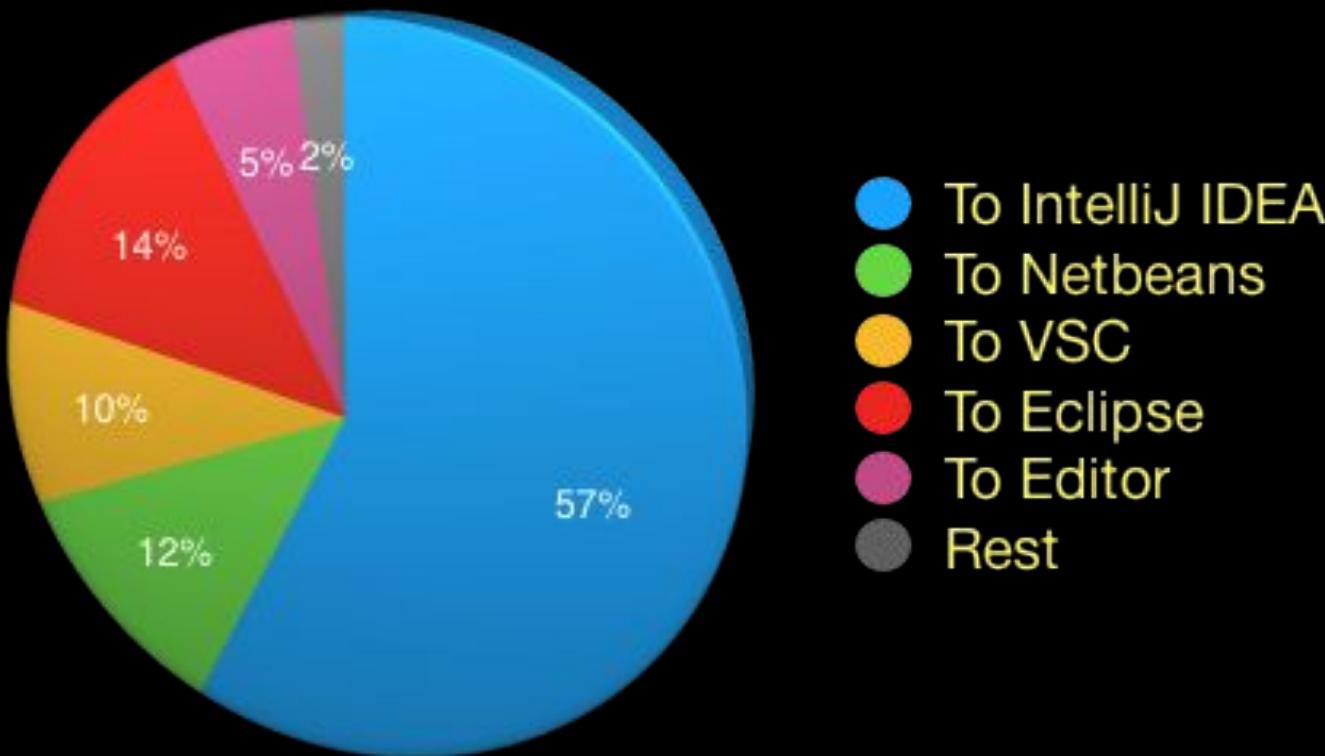
Most leavers

Most winners

Most leavers



Most winners



**But why are people switching
between IDEs?!**

Why are people switching?

Performance!

Features (*refactoring, code completion / version control / Lambda support / Tooling*)

Complexity (*to many features!*)

Support (most people searching for multiple language support)

User experience (dark mode / readability / red-green colorblindness settings / editors / tooling)

Because of others (*reviews / company /school or stopped with RCP projects*)

ME → Not compiling third party code when debugging (so always needed to download the source code)

Program

How it all began

Research

- What is your (main) role within the company?
 - Programming languages
 - What is your favorite IDE?
 - Based on (main) role within the company
 - Do you want to switch (or try) to another IDE?
 - Why is the community using this IDE?
-
- Which IDE to use in which situation



Which IDE to use in which situations

If you want

- the most support on programming languages
- a lot of plugins
- a free IDE
- frequent releases (with new features)
- active community
- the easiest IDE
- the fastest IDE
- the best design (first impression)
- to act like a boss (best features)
 - Auto complete / Code completion
 - Debugging
 - less resource taken

@KoTurk77



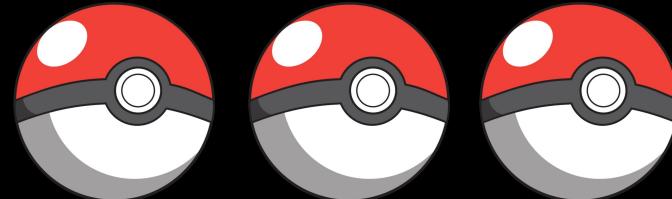
Which IDE to use in which situations

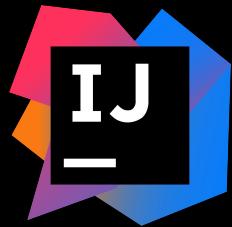
If you want

- big marketplace (plugins)
- the most support on programming languages
- a free IDE
- frequent releases (with new features)
- active community
- the easiest IDE
- the fastest IDE
- the best design (first impression)
- to act like a boss (best features)
 - Auto complete / Code completion
 - Debugging
- less resource taken

Big marketplace

With a lot of plugins





If you want a lot of plugins



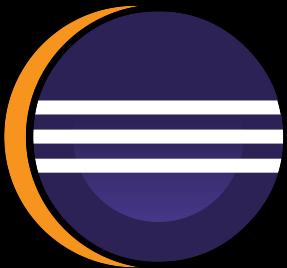
IntelliJ IDEA

Ultimate
[3214 plugins](#)

Community
[2976 plugins](#)

Educational
[2907 plugins](#)

A screenshot of the IntelliJ IDEA plugin marketplace page. It shows three editions: Ultimate, Community, and Educational, each with a link to the number of available plugins. The IntelliJ IDEA logo is displayed at the top left of the page.



If you want a lot of plugins

eclipse marketplace

HOME / MARKETPLACE / NEW AND UPDATED SOLUTIONS

MARKETS

- Eclipse Project (14)
- Tools (1551)
- IoT (135)
- RCP Applications (95)
- Training & Consulting (58)
- Long Term Support (11)

33,030,057 solutions installed directly from Eclipse!

1655 Solutions and counting.

Search

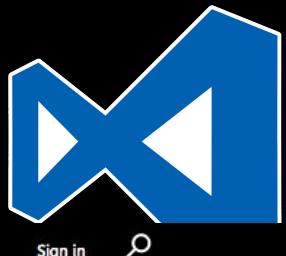
All Solutions Categories

All Markets

SEARCH

ADVANCED SEARCH

A large red arrow points from the 'MARKETS' dropdown menu towards the search bar and filters on the right side of the page.



If you want a lot of plugins

Visual Studio | Marketplace

Sign in



Visual Studio

Visual Studio Code

Azure DevOps

Subscriptions

Build your own

Publish extensions

Search Visual Studio Code extensions



9404 Results

Showing: All categories

Sort By: Downloads

Python
Microsoft 27.9M
Linting, Debugging (multi-threaded, remote), Intellisense, code formatting...
 FREE

Debugger for Chrome
Microsoft 15.6M
Debug your JavaScript code in the Chrome browser, or any other target that supports Webpack...
 FREE

ESLint
Dirk Baeumer 15.4M
Integrates ESLint JavaScript into VS Code.
 FREE

C/C++
Microsoft 15.2M
C/C++ IntelliSense, debugging, and code browsing.
 FREE

GitLens — Git supercharged
Eric Amodio 12.3M
Supercharge the Git capabilities built into Visual Studio Code — Visualize co...
 FREE

TSLint
egamma 11M
TSLint for Visual Studio Code
 FREE

If you want a lot of plugins



Net bevallen | plugins.netbeans.org/PluginPortal/

Apps Teamserver Microservices Rabobank Meetups Conferences ClockWise, ure... Frontend Technology Radar... Brackets Cheat S... Persbericht motor... Venkat SVN code... Beeball Prive

NetBeans NetBeans IDE NetBeans Platform Enterprise Plugins Docs & Support Community

Welcome to the NetBeans Plugin Portal

Download, comment, and rate plugins provided by community members and third-party companies, or post your own contributions!

Publish Your Own Plugin

Most downloaded

- iReport [1,370,438]
- Sublime Theme [468,101]
- Ruby and Rails [381,690]
- NBAndroid [349,456]
- Darcula LAF for NetBeans [287,273]

Show more

Top rated

- Darcula LAF for NetBeans [4,86/6]
- MintifierBeans [4,79/5]
- Codename One [4,7/6]
- Jedict [4,7/6]
- Toggle line wrap [4,67/5]

Show more

Newly added or updated

- MultiProperties [4,6/5]
- Jedict [4,5/5]
- Payara Server / Micro [4,5/5]
- JFormDesigner [4,5/5]
- Netbeans Antlr [4,5/5]

2019-01-06
2019-01-06
2019-01-04

Plugins catalogue

Live Filters - select or type to filter the catalogue, filters are applied all together. There is also multi column sorting activated by 'shift' clicking column headers.

Name: Category: Any NetBeans version: Any Description: Owner: Verified for: Any

Show All 1 entries

Plugin name	Category	NetBeans versions	Description	Owner	Last updated	Avg. Rating	Downloaded	On
iReport	Databases, Enterprise Applications, Editing	7.4, 7.2, 7.1, 7.0, 6.9, 6.8, 6.7, 6.5, 6.1, 6.0	iReport designer for JasperReports	g78	2013-10-29	★★★★★ [4,08/5]	1370433	
Sublime Theme	Web Applications, Version Control Systems, Utilities	8.0, 7.3	Sublime Text default theme for Netbeans IDE.	motammem	2014-09-24	★★★★★ [4,53/5]	468101	
Ruby and Rails	Programming Languages, Web Applications, Editing	8.0, 7.4, 7.3, 7.0, 6.9	Ruby for Netbeans provides all the basics expected from a full-featured Ruby IDE. Ruby for Netbeans also provides support for the Ruby on Rails web framework.	enebo	2015-06-18	★★★★★ [4,65/5]	381690	
NBAndroid	Mobile Applications	8.0, 7.4, 7.3, 7.2	Interested in developing Android applications in the NetBeans IDE? This plugin provides support for Android applications development cycle.	nkubacki	2013-11-02	★★★★★ [4,32/8]	349456	
Darcula LAF for NetBeans	Graphical User Interface	8.2, 8.1, 8.0	A NetBeans Look And Feel plugin using Darcula of IntelliJ IDEA.	Reviivus	2017-07-31	★★★★★ [4,86/5]	287267	
NBOpenGL OpenGL Pack		8.2, 8.0	The NetBeans OpenGL Pack provides an easy to use OpenGL development environment.	mlavru	2009-02-20	★★★★★	137072	

Netilon Dark Theme

Beans Binding Support for Form Editor

mback

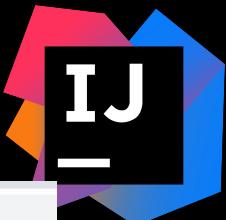
Visual Paradigm for NetBeans

Showing 1 to 1,101 of 1,101 entries

First Previous Next Last

If you want

To pair program



Pair programming

← → C JetBrains s.r.o. [CZ] | https://youtrack.jetbrains.com/issue/IDEABKL-708

Issues | Dashboards Agile Boards Reports Projects

Everything ▾ Enter search request

IDEABKL-708 Created by Maxim Shafirov 14 years ago Updated by William Pietri 7 days ago

Collaborative development

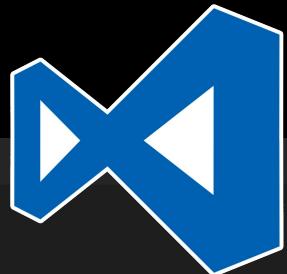
http://www.intellij.net/tracker/idea/viewSCR?publicId=11184
As discussed in http://www.intellij.net/forums/thread.jsp?forum=22&thread=23052&tstart=0&trange=50
I'd like to see IDEA support collaborative development where a number of programmers can edit sources simultaneously over the Internet, so security becomes an issue.

A good start on what today's tools accomplish already can be found at

- * <http://hydra.globalse.org/>
- * <http://www.iamethods.com/products/iam-developing/index.jsp>

The first tool uses Apple's Rendezvous, whereas the latter uses JXTA as communications platform.

Pair programming



EXTENSIONS: MARKETPLACE ...

live share

VS Live Share 0.3.1151
Real-time collaborative development from t...
Microsoft


[Details](#) [Contributio](#)

Microsoft Vis

vsliveshare-welcome-page x

Visual Studio Live Share
Real-time Collaborative Development

Welcome to Visual Studio Live Share! Get your team started with collaborative editing and debugging in just a few simple steps:

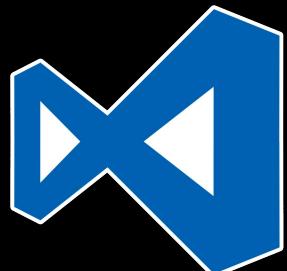
1. **Invite** - Send the session URL to the developers you'd like to collaborate with (up to 5!), using e-mail, Skype, Slack, etc. [View security info](#) to understand more about secure sharing.

Want to evaluate VS Live Share but don't have anyone to collaborate with? No problem! You can actually join your own session from another instance of VS Code.

Collaboration session URL:

<https://insiders.liveshare.vsengsaas.visualstudio.com/join?D1B6FB3FD39EB79D778C54C21A1D438B97B1>

[Copy invite link](#) [Try joining yourself](#)



Pair programming

Demo.java • vsliveshare-welcome-page Java

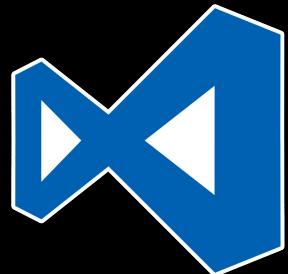
```
1 package nl.rabobank.tc;
2
3 public class Demo {
4
5     Run | Debug
6     public static void main(String[] args) {
7         log.debug("this is text from A");
8         log.debug("This is text from ");
9     }
10}
```

A screenshot of a Java code editor showing a file named "Demo.java". The code defines a class "Demo" with a single method "main". Inside "main", there are two calls to a "log" object's "debug" method, each with a different string argument. The second call is highlighted with a red underline and a green tooltip containing the text "KoTurk". The code editor interface includes tabs for "Demo.java", "vsliveshare-welcome-page", and "Java". A status bar at the bottom shows line numbers from 1 to 10.

If you want

To easily do code reviews

Code reviews



1 | # TheBattleOfTheIDEs

2 | Something changed in the README file.

Participants: @KoTurk X

 KoTurk
Why adding this line?

Reply...

(Default) Supported languages

IntelliJ IDEA

- Java
- Groovy
- Javascript
- HTML / XHTML
- PHP (plugin)
- C / C++ through CLion
- Kotlin
- XML / XSL
- ActionScript/MXML (Ult. edition)
- CoffeeScript (Ult. edition)
- HTML/XHTML/CSS (Ult. edition)
- JavaScript/Ruby/JRuby (Ult. edition)
- SQL (Ult. edition)

Netbeans

- Java (SE / FX / EE/ ME)
- Groovy
- Javascript
- HTML5
- PHP
- C / C++
- Kotlin (plugin)

Eclipse

- Java
- Groovy (plugin)
- Javascript (plugin)
- HTML
- PHP (plugin)
- C / C++ / C#
- Kotlin (plugin)

Visual Studio Code

- Java (plugin)
- Groovy (plugin)
- Javascript
- TypeScript
- HTML / CSS
- C / C++ / C# (plugin)
- Kotlin (plugin)

Most releases

IntelliJ IDEA

From 2016, 3 big releases
in a year.

Before it was only 1 year

Netbeans

From July 2018, 2 big
releases in a year.

Before it was only 1
year

Eclipse

From Sep. 2018, 4 big
releases (planned) in a
year.

Before it was only 1
year

Visual Studio Code

From 2015, 1 release in
a month (2/3 bugfix
releases in month)

Early Access (each day)
Insiders

If you want



The most (active) community

How many contributors are there?

IntelliJ Community Edition

IntelliJ IDEA Community Edition <http://www.jetbrains.com/idea/>

236,812 commits 217 branches 15 releases 369 contributors Apache-2.0

Eclipse

To use Git in Eclipse, check out the EGit project.

index about

Name	Description	Owner	Age
eclipse.org.common.git	Eclipse.org/common website	Code Review	31 min.
org.eclipse.osee.git	OSEE	Code Review	34 min.
org.eclipse.sirius.git	Sirius	Code Review	37 min.
org.eclipse.pdt.git	Eclipse PDT repository	Code Review	79 min.
webtools.relying-aggregator.git	webtools-relying aggregator	Code Review	2 hours
openjpa-commons.git	Unnamed repository; edit this file 'description' to name the repository.	Code Review	5 hours
git.git	Java implementation of Git (technology.git)	Code Review	8 hours
org.eclipse.papyrus-robotml.git	Payara for RobotML	Code Review	6 hours
openj9.git	Unnamed repository; edit this file 'description' to name the repository.	Code Review	7 hours
egit.git	Eclipse Git Team Provider (technology egit)	Genie egit:git	7 hours
EGit-RT-DNA.git	Eclipse Git Team Provider (technology egit)	Code Review	9 hours

How many contributors are there?

Netbeans

⌚ 2,246 commits

git 11 branches

heart 14 releases

user 88 contributors

Apache-2.0

Visual Studio Code

⌚ 44,082 commits

git 194 branches

heart 117 releases

user 786 contributors

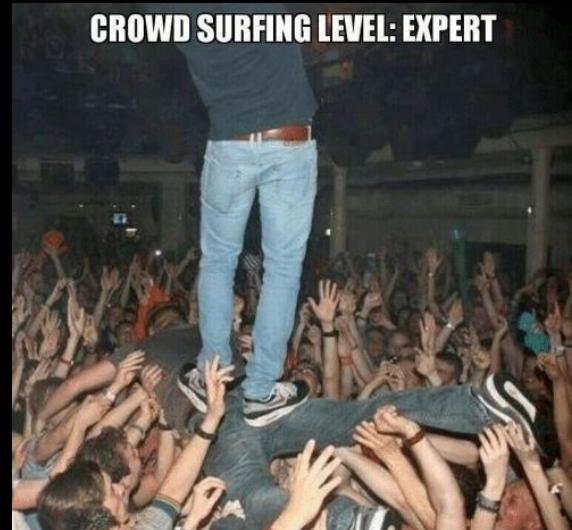
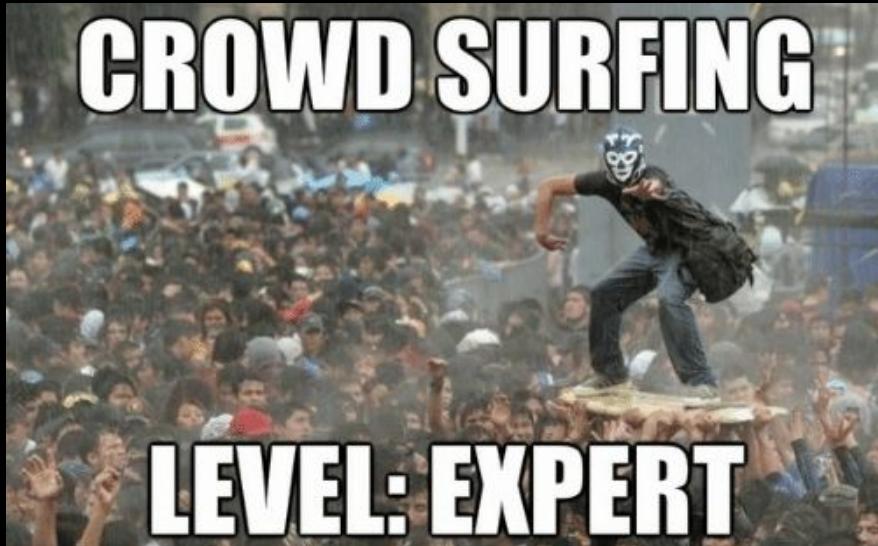
MIT

If you want
The easiest IDE
(Junior developers)

Just graduated High School. This is what every single teacher I talked to told me...



Fastest IDE?!



Let's start the IDE

```
er the state location is initialized.  
org.eclipse.m2e.logback.configuration: Logback config file: /Users/turk/eclipse-workspace/.metadata/.plugins/org.eclipse.m2e.logback.configuration/logback.1.9.1.20180912-1601.xml  
SLF4J: Class path contains multiple SLF4J bindings.  
SLF4J: Found binding in [bundleresource://1972.fwk1866882564:1/org/slf4j/impl/StaticLoggerBinder.class]  
SLF4J: Found binding in [bundleresource://1972.fwk1866882564:2/org/slf4j/impl/StaticLoggerBinder.class]  
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.  
SLF4J: Actual binding is of type [ch.qos.logback.classic.util.ContextSelectorStaticBinder]  
org.eclipse.m2e.logback.configuration: Initializing logback  
*Command terminated abnormally.  
    14.66 real      0.00 user      0.00 sys  
MBP-van-Kot- turk3 idea : time cat  
2019-03-22 20:56:51.434 idea[24647:3997614] Value o  
2019-03-22 20:56:51.434 idea[24647:3997614] Process  
turk/Library/Preferences/IntelliJIdea2018.3/idea.vm  
2019-03-22 20:56:51.435 idea[24647:3997614] Done.  
*Command terminated abnormally.  
    29.62 real      0.00 user      0.00 sys  
MBP-van-Kot- turk3 netbeans : time cat
```



Startup time every IDE

- Visual Studio Code 11,37 seconden
- Eclipse: 14,66 seconden
- Netbeans: 25,81 seconden
- IntelliJ IDEA: 29,62 seconden



1 hour here is 7 years on earth

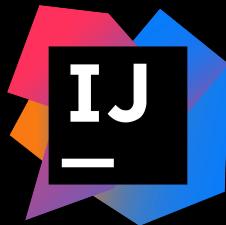


**GREAT, I'LL WAIT FOR
INTELLIJ INDEXING TO FINISH HERE**

If you want

less resource taken

**Let's have
A look on resources**



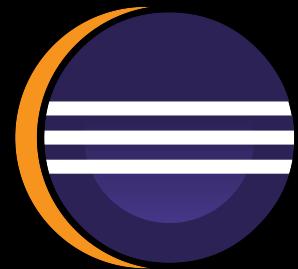
Resource consuming

Download size

Naam	Grootte
idealIU-183.5153.8.dmg	685,4 MB

Memory usage

Procesnaam	Geheu...	Gecompr. gehe...
IntelliJ IDEA	1,12 GB	558,6 MB



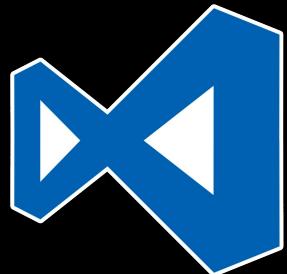
Resource consuming

Download size

Naam	Grootte
eclipse-java-2018-12-R-macosx-cocoa-x86_64.dmg	190 MB

Memory usage

Procesnaam	Geheu...	Gecompr. gehe...
Eclipse	1,11 GB	1,06 GB



Resource consuming

Download size

Naam	Grootte
VSCode-darwin-insider.zip	70,5 MB

Memory usage (official / pre release)

Procesnaam	Geheu...
Code	45,7 MB

Procesnaam	Geheu...
Code - Insiders	45,6 MB



Resource consuming

Download size

Naam	Grootte
incubating-netbeans-10.0-source.zip	113,3 MB

Memory usage

Procesnaam	Geheu...	Gecompr. gehe...
NetBeans	786,4 MB	348,9 MB

If you want

The best design (first impression)



First impression



Screenshot of the Microsoft Visual Studio Code (VS Code) interface showing a Java Spring Boot project.

The Explorer sidebar shows the project structure:

- OPEN EDITORS
- COMPLETE
- .gradle
- .mvn
- settings
- vscode
- bin
- gradle
- src
 - main
 - java
 - hello
 - Application.java
 - HelloController.java
 - test
 - java
 - hello
 - HelloControllerT.java
 - HelloControllerTest.java
- target
- .classpath
- .project
- build.gradle
- gradlew
- gradlew.bat
- gs-spring-boot.iml
- mvnw
- mvnw.cmd
- pom.xml

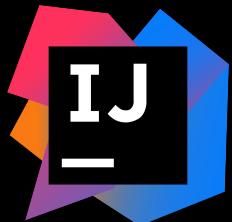
If you want



to act like a boss (best features)

The only paid one (known by me) is
IntelliJ IDEA

But I think it has a reason...



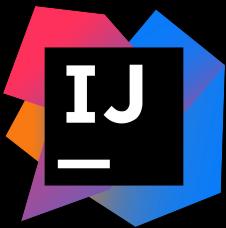
Auto complete

```
public class Demo {  
    public static void main(String[] args) {  
        System.|  
    }  
}
```

The screenshot shows an auto-completion dropdown menu in an IDE. The code above has 'System.' typed, and the IDE is suggesting various methods from the `System` class. The suggestions are:

- arraycopy (Object src, int srcPos, Object dest, int destPo... void)
- clearProperty (String key) String
- console () Console
- currentTimeMillis () long
- exit (int status) void
- gc () void
- getenv () Map<String, String>
- getenv (String name) String
- getProperties () Properties
- getProperty (String key) String
- getProperty (String key, String def) String
- getSecurityManager () SecurityManager

At the bottom of the dropdown, there is a note: "Press ^ to choose the selected (or first) suggestion and insert a dot afterwards >>" followed by a small help icon.



Postfix completion

For each example

```
|
```

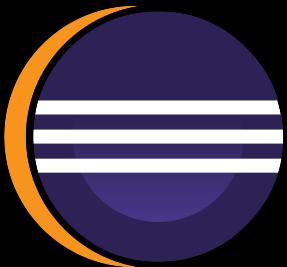
A screenshot of an IDE code editor showing a single character 'I' on a yellow-highlighted line, indicating a cursor position.

Try catch

```
s|
```

A screenshot of an IDE code editor showing a single character 's' on a yellow-highlighted line, indicating a cursor position.

Auto complete



```
public class Demo {  
    public static void main(String[] args) {  
        System.  
    }  
}
```

A screenshot of an Eclipse IDE code editor showing auto-completion for the variable 'System'. A tooltip is displayed over the cursor, listing various methods and fields of the System class, such as 'arraycopy', 'clearProperty', 'console', 'currentTimeMillis', 'exit', and 'get'. The tooltip also includes a note about Code Recommenders and subwords completion.

Code Recommenders is enabled

- S class : Class<java.lang.System>
- SF err : PrintStream - System
- SF in : InputStream - System
- SF out : PrintStream - System
- S arraycopy(Object src, int srcPos, Object dest, int destPos, int count) : void - System
- S clearProperty(String key) : String - System
- S console() : Console - System
- S currentTimeMillis() : long - System
- S exit(int status) : void - System
- S get() : void - System

Press 'Space' to show Template Proposals

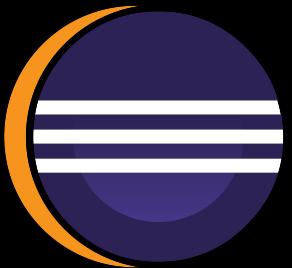
Code Recommenders improves Eclipse's built-in code completion by showing you how others have used an API before. Additionally, subwords completion allows you to search for subword matches rather than just prefix matches in Content Assist.

By default, both Code Recommenders and subwords completion are enabled, but you may customize them at [Code Recommenders > Completions](#).

To learn more about Code Recommenders and Subwords, please visit the [project homepage](#) or consult the [manual](#).

Eclipse Code Recommenders





Postfix completion

Need to install a plugin

```
List<String> list = new ArrayList<String>();
list.add(getName());
list.|
```

- `wait(long timeout) : void - Object`
- `wait(long timeout, int nanos) : void - Object`
- `beg` - Sets the cursor to the begin of the expression
- `cast` - Casts the expression to a new type
- `constpriv` - Creates a new private constant
- `constpub` - Creates a new public constant
- `field` - Creates a new field
- `for` - Creates a for statement
- `nnull` - Creates an if statement and checks it the value is null
- `null` - Creates an if statement which checks the value is null
- `nnnull` - Creates an if statement which checks if the value is not null

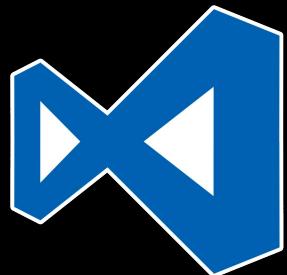
Causes the current thread to wait until another thread invokes the `java.lang.Object.notify()` method or the `java.lang.Object.notifyAll()` method for this object, or some other thread interrupts the current thread, or a certain amount of real time has elapsed.

This method is similar to the `wait` method of one argument, but it allows finer control over the amount of time to wait for a notification before giving up. The amount of real time, measured in nanoseconds, is given by:

$$1000000 * \text{timeout} + \text{nanos}$$

In all other respects, this method does the same thing as the

Press 'Tab' from proposal table or click for focus



Auto complete (IntelliSense)

The screenshot shows an IDE interface with two code completion dropdown menus. On the left, the code is:

```
public class Demo {  
    Run | Debug  
    public static void main(String[] args) {  
        System.|  
    }  
}
```

The cursor is at the end of "System.", and a dropdown menu lists the following methods:

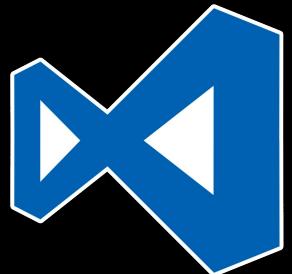
- class : Class<java.lang.System>
- err : PrintStream
- in : InputStream
- out : PrintStream
- .arraycopy(Object src, int srcPos, Object dest, int destPos, int length) : void
- clearProperty(String key) : String
- console() : Console
- currentTimeMillis() : long
- exit(int status) : void
- gc() : void
- getProperties() : Properties
- getProperty(String key) : String

On the right, the code is:

```
@RestController  
public class HelloController {  
  
    @RequestMapping("/")  
    public String index() {  
        final String greeting = "Greetings from Spring Boot!";  
        return gr.|  
    }  
}
```

The cursor is at the end of "gr.", and a dropdown menu lists the following methods:

- greeting : String
- GradientPaint - java.awt
- GraphicAttribute - java.awt.font
- Graphics - java.awt
- Graphics2D - java.awt
- GraphicsConfigTemplate - java.awt
- GraphicsConfiguration - java.awt
- GraphicsDevice - java.awt
- GraphicsEnvironment - java.awt
- GraphiteMetricsExportAutoConfiguration - org.springframework.boot.actuate.metrics.graphite
- GraphiteProperties - org.springframework.boot.actuate.metrics.graphite
- GrayCompositeConverter - ch.qos.logback.core.pattern.GrayCompositeConverter



Postfix completion

Not available (no plugins) for Java (but for typescript / javascript there is a plugin)

But you can create a code snippet like creating code template

Auto complete



```
public class Demo {  
    public static void main(String[] args) {  
        System.  
    }  
}  
  
System class members:  
err  
in  
out  
.arraycopy(Object src, int srcPos, Object dest, int destPos, int length) void  
clearProperty(String key)  
console()  
currentTimeMillis()  
exit(int status)  
gc()  
getLogger(String name)  
getLogger(String name, ResourceBundle bundle)  
getProperties()  
getProperty(String key)  
getProperty(String key, String def)  
getSecurityManager()  
getenv()  
getenv(String name)
```



```
@RestController  
public class HelloController {  
  
    @RequestMapping("/")  
    public String index() {  
        final String greeting = "Greetings from Spring Boot!";  
        return greeting;  
    }  
}  
HelloController class members:  
greeting  
getClass()
```

Imported Items; Press 'Ctrl+SPACE' Again for All Items

Autocomplete on variable after click on ctrl + spacebar



Postfix completion

Still a JIRA ticket (feb 2018)

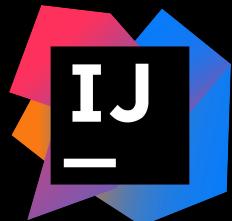
<https://issues.apache.org/jira/browse/NETBEANS-390>

But they say use if before (like code template)

```
public String index() {
    final String greeting = "Greetings from Spring Boot!";
    wait(timeout)
    wait(timeout, int nanos)
    finalize()
    Runnable r = new Runnable() {...}
    do { ...
        for (Map.Entry<KeyType, ValueType> entry : map.entrySet()) { ...
        for (Iterator it = col.iterator(); it.hasNext();) {...
    } for (StringTokenizer TOKENIZER = new StringTokenizer(STRING); TOKENIZER.hasMoreTokens()); {... forst
    for (Object elem : col) {...
        for (int i = 0; i < 10; i++) {...
        for (int idx = 0; idx < arr.length; idx++) {...
        for (int idx = 0; idx < lst.size(); idx++) {...
        for (int idx = 0; idx < vct.size(); idx++) {...
    if (exp) { ...| }
    if (exp) { ...| } else { ... }
    if (exp instanceof Object) {...
    printStackTrace();
}
```

Imported Items; Press 'Ctrl+SPACE' Again for All Items

If you want
the best features (debugging)



Debugging (minimal view)

The screenshot shows the IntelliJ IDEA debugger interface in a minimal view. The top navigation bar includes tabs for 'Debugger', 'Console', 'Threads', 'Variables', 'Watches', 'Memory', and 'Overhead'. The 'Debugger' tab is selected, displaying a stack trace for the current thread:

```
main@1 in group "main": RUNNING
getHello:37, HelloControllerIT (hello)
invoke:4, NativeMethodAccessorImpl (sun.reflect)
invoke:62, NativeMethodAccessorImpl (sun.reflect)
invoke:43, DelegatingMethodAccessorImpl (sun.reflect)
invoke:498, Method (java.lang.reflect)
runReflectiveCall:50, FrameworkMethod$1 (org.junit.runner.manipulation)
run:12, ReflectiveCallable (org.junit.internal.runners)
invokeExplosively:47, FrameworkMethod (org.junit.runners)
evaluate:17, InvokeMethod (org.junit.internal.runners)
evaluate:73, RunBeforeTestExecutionCallbacks (org.junit.runners)
```

The 'Variables' tab shows local variables:

- this = {HelloControllerIT@6353}
- template = {TestRestTemplate@6354}
- base = {URL@6355} "http://localhost:57272/"

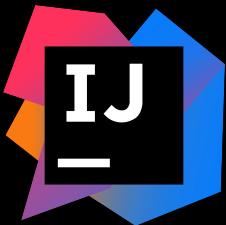
The 'Watches' tab shows 'No watches'.

The bottom part of the interface features a code editor with the following Java code:

```
19
20
21 @Override
22     public LocalDate deserialize(JsonParser jp, DeserializationContext ctxt) throws IOException, JsonProcessingException {
23
24         return LocalDate.parse(jp.readValueAs(String.class));
25     }

```

A red breakpoint is set on line 24. A tooltip at the bottom indicates: 'Method threw 'com.fasterxml.jackson.databind.exc.MismatchedInputException' exception.'



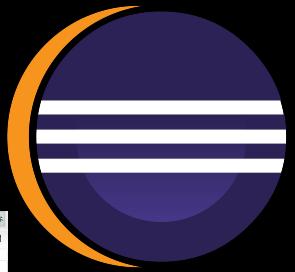
Debugging (handy features)

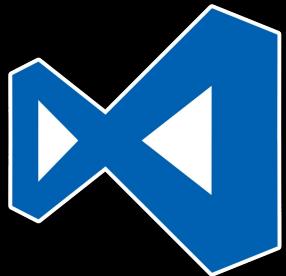
A screenshot of the IntelliJ IDEA code editor. The code shown is a Java method:

```
19  
20  
21 @Override  
22     public LocalDate deserialize(JsonParser jp, DeserializationContext ctxt)  jp: ReaderBasedJsonParser@11993  ctxt: DefaultDeserializationContext$Impl  
23             throws IOException, JsonProcessingException {  
24         return LocalDate.parse(jp.readValueAs(String.class));  jp: ReaderBasedJsonParser@11993  
25     }
```

The line 24 contains a breakpoint (red circle with a yellow dot). A tooltip at the bottom left of the editor window displays the message: "Method threw 'com.fasterxml.jackson.databind.exc.MismatchedInputException' exception." The code editor has a light green background for the first few lines and a light blue background for the rest. The status bar at the bottom shows line numbers 27 and 28.

Debugging (complete new view)





Debugging

The screenshot shows the Visual Studio Code interface with the following details:

- File:** HelloControllerIT.java
- Line:** Line 12 is highlighted, showing the code: `return greeting;`
- Breakpoint:** A red dot indicates a breakpoint is set on line 12.
- Variables:** The Local pane shows a variable `this: HelloController {1d-66}` with the value `greeting: "Greetings From Spring Boot!"`.
- Watch:** An empty pane.
- Call Stack:** Shows multiple threads running, including `Thread [http-nio-auto-1-ClientPoller-0]`, `Thread [http-nio-auto-1-exec-10]`, `Thread [http-nio-auto-1-exec-9]`, `Thread [http-nio-auto-1-exec-8]`, `Thread [http-nio-auto-1-exec-7]`, `Thread [http-nio-auto-1-exec-6]`, `Thread [http-nio-auto-1-exec-5]`, `Thread [http-nio-auto-1-exec-4]`, `Thread [http-nio-auto-1-exec-3]`, `Thread [http-nio-auto-1-exec-2]`, and `Thread [http-nio-auto-1-exec-1]`. The thread at index 1 is paused.
- Breakpoints:** The Breakpoints pane shows a single entry for `HelloController.java` at line 12.
- Output:** Shows "Running tests..."
- Terminal:** Shows "Source: Java Test Runner (Extension)"

Debugging

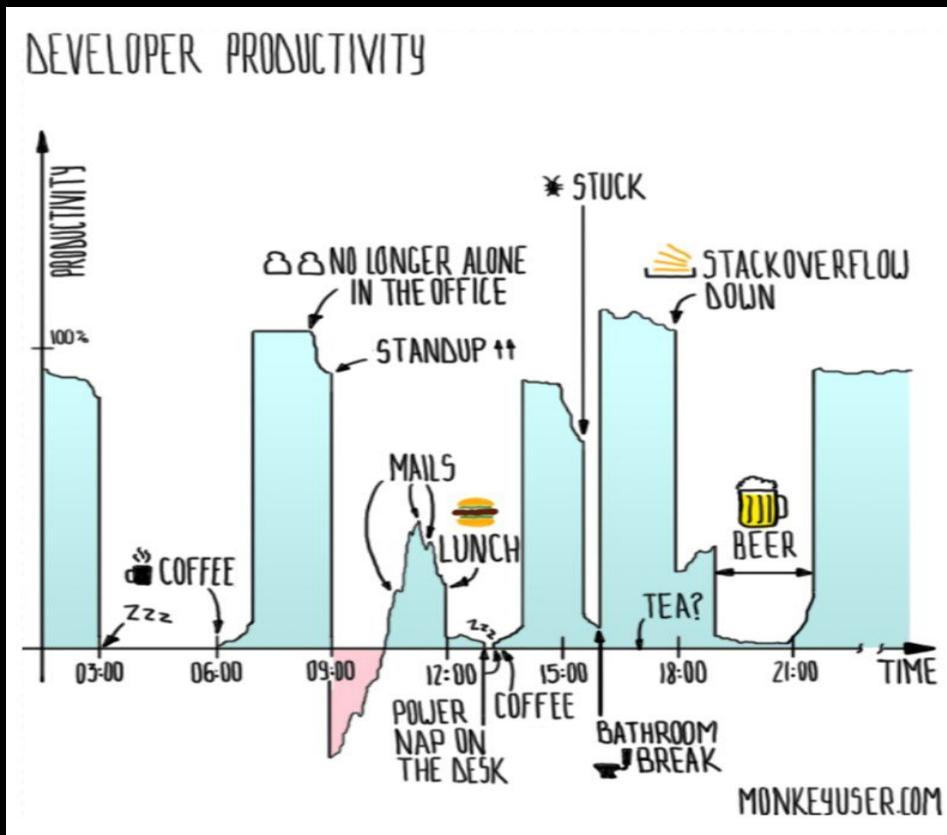


The screenshot shows an IDE interface with several windows open:

- Projects**: Shows a single project named "HelloController".
- Files**: Shows files like "HelloController.java" and "HelloControllerTest.java".
- Services**: Shows various service components.
- Debugging**: Shows a call stack with numerous entries, indicating a deep stack trace. The current line of code is highlighted in green:

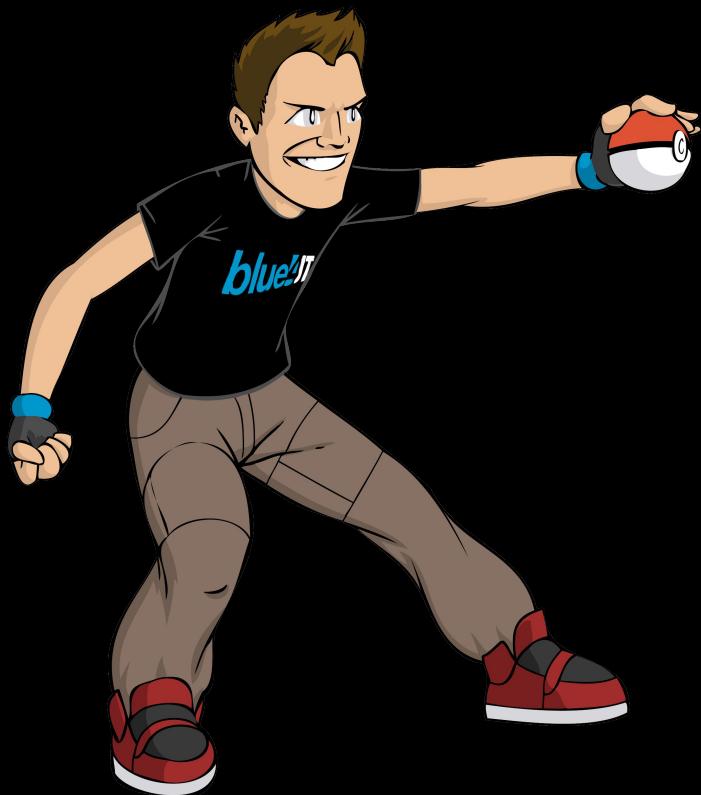
```
    @RequestMapping("/")
    public String index() {
        final String greeting = "Greetings from Spring Boot!";
        return greeting;
    }
}
```
- Source**: Shows the source code for "HelloController.java".
- History**: Shows a history of recent changes.
- Breakpoints**: Shows a list of breakpoints.
- Output**: Shows the output of the build process.
- Variables**: Shows the current values of variables: "this" (HelloController) and "greeting" (String) with value "#6263" and "Greetings from Spring Boot!" respectively.
- Breakpoints**: Shows the current state of breakpoints.
- Output**: Shows the output of the build process.
- Navigation**: Shows the navigation history.
- Members**: Shows the members of the "HelloController" class.
- Index**: Shows the index of the current file.

Try some other IDE!

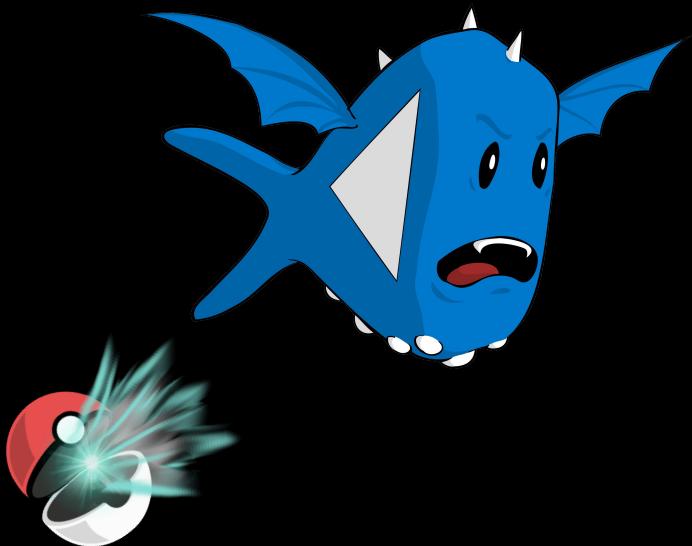


If you need to switch
which IDE will you choose?

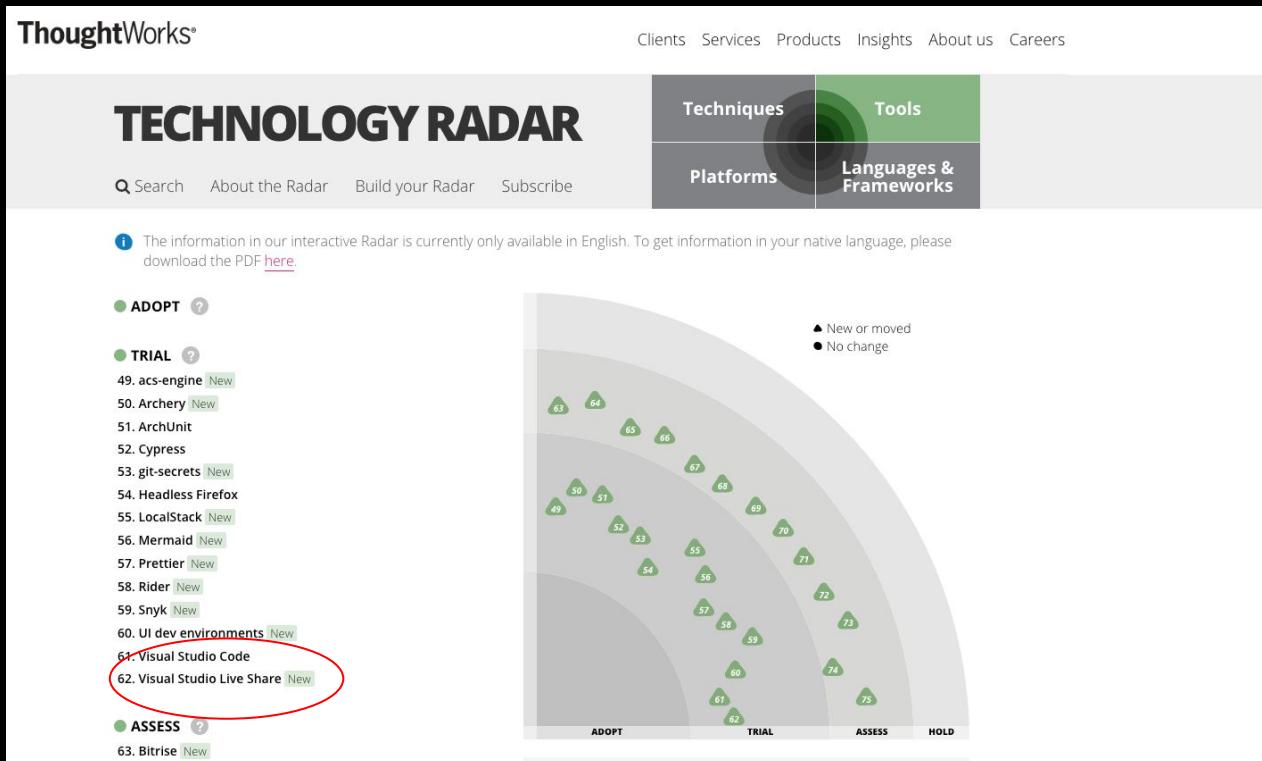
My pokémon



The Pokemon I want to catch



Because I follow ThoughWorks (tech radar)



Curious why people using Visual Studio Code



My experience in VSC

- install multiple plugins (java, maven, test, debug, lombok, etc)
- create maven task
 - command palette (looks like “find actions in IntelliJ IDEA”)
 - Will create a tasks.json
- Very strict to maven (for example when coding in Java 1.8)
Need to specify in pom.xml (otherwise you get errors when using lambda's)
- Missing documentation or issue solving in stack overflow

Positive about

- Quickly downloaded and installed
- Smoothly designed
- A lot of plugins are available (like IntelliJ Keybindings, dark theme)
- Nice source control (easily see what you changed)
- Grid Layout
- Java support since sep 2017 (initial commit)

People laugh at me because I'm different. I laugh at them because they're all the same.



Leadsinger / guitarist Nirvana

The Pokecards



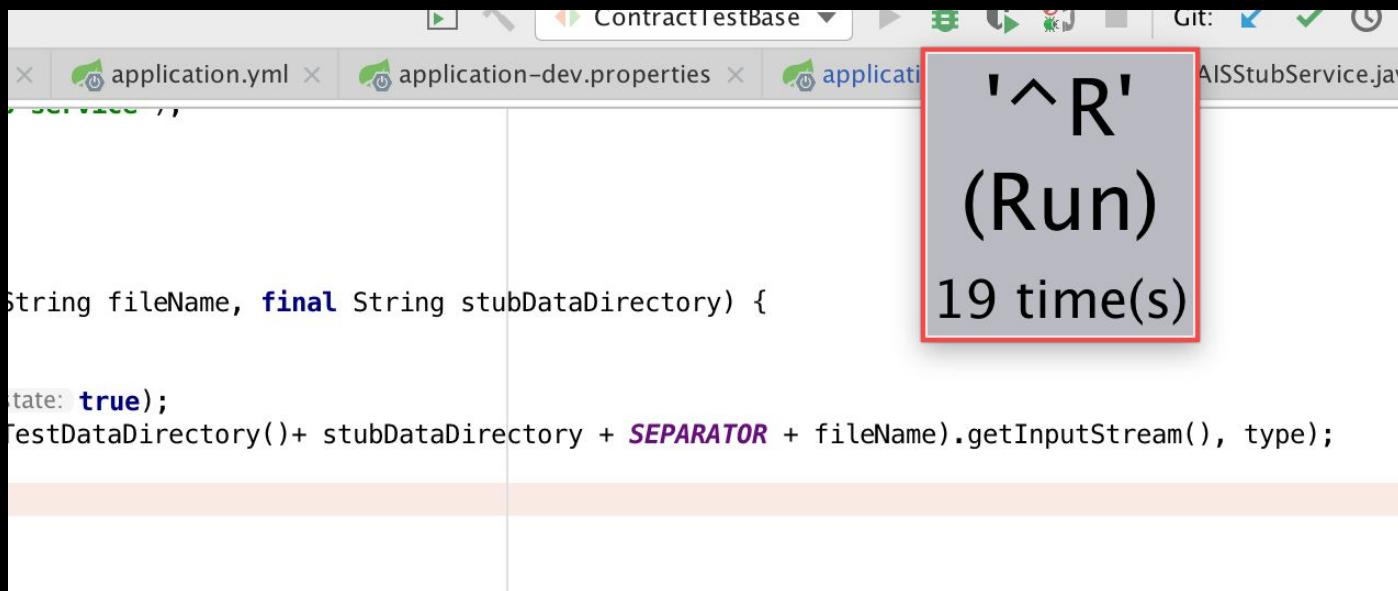
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SKILLCARD



Learn shortcuts! Use Key Promoter

Shows the user a popup with a command action!



Questions?

