



# IntelliJ Super Productivity in 45 Minutes

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# Why IntelliJ IDEA?

## ● My story

- Started with Borland JBuilder 1997
- Then used Eclipse for a year in 2002
- Needed something to work with horrible messy Java code
- Downloaded IntelliJ IDEA
  - No free version at the time
  - Used it for 30 days, then bought it
- Paid twice
  - Once for the license and then reduced hours worked
    - But work far more pleasant, less frustration, better life



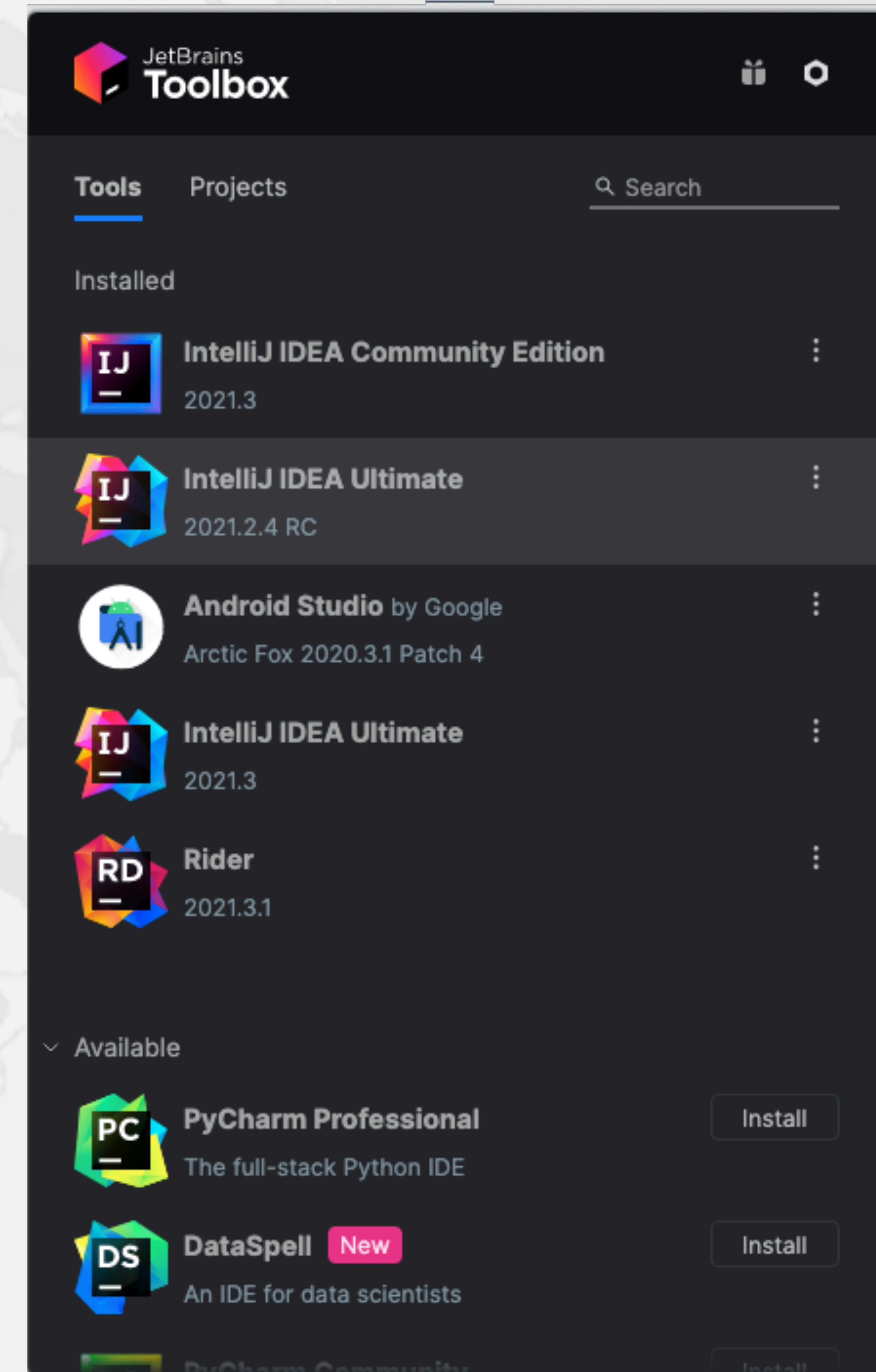
# Disclaimer

- **I do not work for JetBrains**
  - **Cannot speak on behalf of the company**
  - **Please do not ask about pricing and future plans**
    - **e.g. Why is AI Assistant not free? Why no free student version?**

# Download JetBrains Toolbox

- **Keeps the IDEs up to date**

- <https://www.jetbrains.com/toolbox-app/>





# Versions of IntelliJ

- **Ultimate Edition**

- Paid version, has many great features
- AI Assistant as extra subscription

- **Community Edition**

- Free version, excellent tool for editing Java code

# AI Assistant

- **Plugin available since 2024.1 for all versions**
  - Free 7 day trial for paid IDEs
  - [www.jetbrains.com/ai/#plans-and-pricing](https://www.jetbrains.com/ai/#plans-and-pricing)
- **Our code is not used for LLM training**
  - [www.jetbrains.com/help/ai/data-collection-and-use-policy.html](https://www.jetbrains.com/help/ai/data-collection-and-use-policy.html)
  - Soon they will have options for on-prem LLMs
- **More information here**
  - [www.jetbrains.com/ai/#general-faq](https://www.jetbrains.com/ai/#general-faq)



# Setting up IntelliJ IDEA

- **Appearance & Behavior**

- Darcula Scheme most popular, but errors harder to see
- Easy to switch between schemes with **Ctrl + `**

- **Keymap, Mac OS X**

- IntelliJ IDEA classic has more finger friendly shortcuts on the Mac

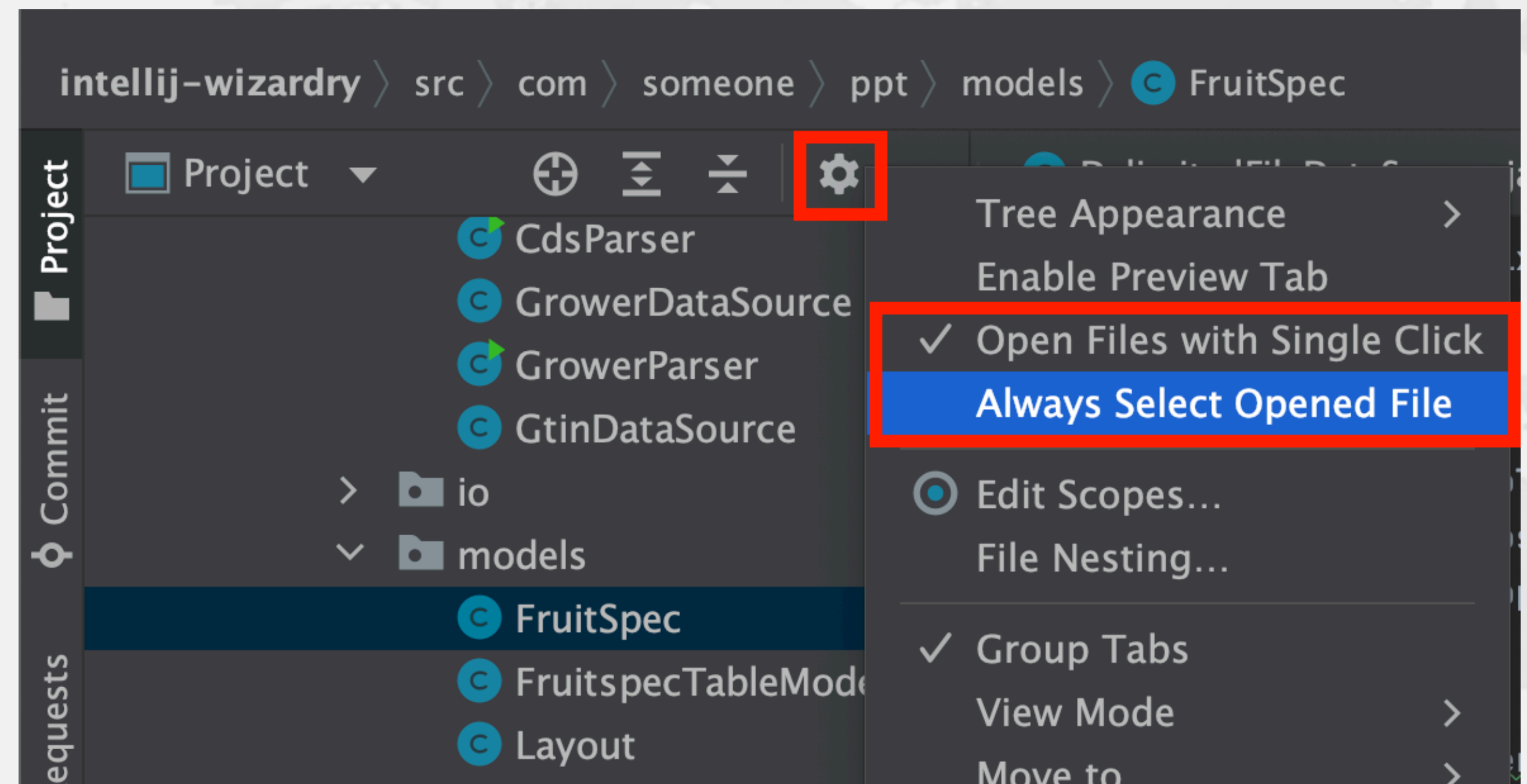
# Editor Settings

- **Editor →**
  - **General → Smart Keys: Select Use "CamelHumps" words**



# Autoscroll to/from source

- **Seems to be on by default now**
  - Lots of times saw programmers editing the wrong file
- **✓ Open Files with Single Click**
- **✓ Always Select Opened File**





# IntelliJ IDEA Philosophy



# IntelliJ IDEA Philosophy

- IntelliJ designed to be used mostly without mouse
- Hotkeys for almost everything
  - Print out Help → Keyboard Shortcuts PDF
  - Memorize one new shortcut per day  $\approx$  6 months

| IntelliJ IDEA                                                                                                                                                                                                                                                                                                            |                       |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--|
| Windows & Linux keymap                                                                                                                                                                                                                                                                                                   |                       |  |
|  jetbrains.com/idea  @intellijidea  blog.jetbrains.com/idea |                       |  |
| <b>REMEMBER THESE SHORTCUTS</b>                                                                                                                                                                                                                                                                                          |                       |  |
| Smart code completion                                                                                                                                                                                                                                                                                                    | Ctrl+Shift+Space      |  |
| Search everywhere                                                                                                                                                                                                                                                                                                        | Double Shift          |  |
| Show intention actions and quick-fixes                                                                                                                                                                                                                                                                                   | Alt+Enter             |  |
| Generate code                                                                                                                                                                                                                                                                                                            | Alt+Ins               |  |
| Parameter info                                                                                                                                                                                                                                                                                                           | Ctrl+P                |  |
| Extend selection                                                                                                                                                                                                                                                                                                         | Ctrl+W                |  |
| Shrink selection                                                                                                                                                                                                                                                                                                         | Ctrl+Shift+W          |  |
| Recent files popup                                                                                                                                                                                                                                                                                                       | Ctrl+E                |  |
| Rename                                                                                                                                                                                                                                                                                                                   | Shift+F6              |  |
| <b>GENERAL</b>                                                                                                                                                                                                                                                                                                           |                       |  |
| Open corresponding tool window                                                                                                                                                                                                                                                                                           | Alt+#[0-9]            |  |
| Save                                                                                                                                                                                                                                                                                                                     | Ctrl+S                |  |
| Synchronize                                                                                                                                                                                                                                                                                                              | Ctrl+Alt+Y            |  |
| Toggle maximizing editor                                                                                                                                                                                                                                                                                                 | Ctrl+Shift+F12        |  |
| Inspect current file with current profile                                                                                                                                                                                                                                                                                | Alt+Shift+I           |  |
| Quick switch current scheme                                                                                                                                                                                                                                                                                              | Ctrl+BackQuote (`)    |  |
| Open Settings dialog                                                                                                                                                                                                                                                                                                     | Ctrl+Alt+S            |  |
| Open Project Structure dialog                                                                                                                                                                                                                                                                                            | Ctrl+Alt+Shift+S      |  |
| Find Action                                                                                                                                                                                                                                                                                                              | Ctrl+Shift+A          |  |
| <b>DEBUGGING</b>                                                                                                                                                                                                                                                                                                         |                       |  |
| Step over/into                                                                                                                                                                                                                                                                                                           | F8 / F7               |  |
| Smart step into/Step out                                                                                                                                                                                                                                                                                                 | Shift+F7 / Shift+F8   |  |
| Run to cursor                                                                                                                                                                                                                                                                                                            | Alt+F9                |  |
| Evaluate expression                                                                                                                                                                                                                                                                                                      | Alt+F8                |  |
| Resume program                                                                                                                                                                                                                                                                                                           | F9                    |  |
| Toggle breakpoint                                                                                                                                                                                                                                                                                                        | Ctrl+F8               |  |
| Clear breakpoints                                                                                                                                                                                                                                                                                                        | Ctrl+Shift+F8         |  |
| <b>SEARCH / REPLACE</b>                                                                                                                                                                                                                                                                                                  |                       |  |
| Search everywhere                                                                                                                                                                                                                                                                                                        | Double Shift          |  |
| Find                                                                                                                                                                                                                                                                                                                     | Ctrl+F                |  |
| Find next / previous                                                                                                                                                                                                                                                                                                     | F3 / Shift+F3         |  |
| Replace                                                                                                                                                                                                                                                                                                                  | Ctrl+R                |  |
| Find in path                                                                                                                                                                                                                                                                                                             | Ctrl+Shift+F          |  |
| Replace in path                                                                                                                                                                                                                                                                                                          | Ctrl+Shift+R          |  |
| Select next occurrence                                                                                                                                                                                                                                                                                                   | Alt+J                 |  |
| Select all occurrences                                                                                                                                                                                                                                                                                                   | Ctrl+Alt+Shift+J      |  |
| Unselect occurrence                                                                                                                                                                                                                                                                                                      | Alt+Shift+J           |  |
| <b>EDITING</b>                                                                                                                                                                                                                                                                                                           |                       |  |
| Basic code completion                                                                                                                                                                                                                                                                                                    | Ctrl+Space            |  |
| Smart code completion                                                                                                                                                                                                                                                                                                    | Ctrl+Shift+Space      |  |
| Complete statement                                                                                                                                                                                                                                                                                                       | Ctrl+Shift+Enter      |  |
| Parameter info                                                                                                                                                                                                                                                                                                           | Ctrl+P                |  |
| Quick documentation lookup                                                                                                                                                                                                                                                                                               | Ctrl+Q                |  |
| External Doc                                                                                                                                                                                                                                                                                                             | Shift+F1              |  |
| Smart line                                                                                                                                                                                                                                                                                                               | Ctrl+mouse            |  |
| Show usages of symbol at caret                                                                                                                                                                                                                                                                                           | Ctrl+F1               |  |
| Generate code                                                                                                                                                                                                                                                                                                            | Alt+Insert            |  |
| Override method                                                                                                                                                                                                                                                                                                          | Ctrl+O                |  |
| Implement method                                                                                                                                                                                                                                                                                                         | Ctrl+I                |  |
| Surround with                                                                                                                                                                                                                                                                                                            | Ctrl+Alt+T            |  |
| Comment/Uncomment with line comment                                                                                                                                                                                                                                                                                      | Ctrl+ /               |  |
| Comment/Uncomment with block comment                                                                                                                                                                                                                                                                                     | Ctrl+Shift+ /         |  |
| Extend selection                                                                                                                                                                                                                                                                                                         | Ctrl+W                |  |
| Shrink selection                                                                                                                                                                                                                                                                                                         | Ctrl+Shift+W          |  |
| Context info                                                                                                                                                                                                                                                                                                             | Alt+Q                 |  |
| Show intention actions and quick-fixes                                                                                                                                                                                                                                                                                   | Alt+Enter             |  |
| Reformat code                                                                                                                                                                                                                                                                                                            | Ctrl+Alt+L            |  |
| Optimize imports                                                                                                                                                                                                                                                                                                         | Ctrl+Alt+O            |  |
| Extract method                                                                                                                                                                                                                                                                                                           | Ctrl+Alt+M            |  |
| Indent / unindent selected line                                                                                                                                                                                                                                                                                          | Tab / Shift+Tab       |  |
| Cut current line to clipboard                                                                                                                                                                                                                                                                                            | Ctrl+X, Shift+Delete  |  |
| Copy current line to clipboard                                                                                                                                                                                                                                                                                           | Ctrl+C, Ctrl+Insert   |  |
| Paste from clipboard                                                                                                                                                                                                                                                                                                     | Ctrl+V, Shift+Insert  |  |
| Paste from recent buffers                                                                                                                                                                                                                                                                                                | Ctrl+Shift+V          |  |
| Duplicate current line                                                                                                                                                                                                                                                                                                   | Ctrl+D                |  |
| Delete line at caret                                                                                                                                                                                                                                                                                                     | Ctrl+Y                |  |
| Smart line join                                                                                                                                                                                                                                                                                                          | Ctrl+Shift+J          |  |
| Smart line split                                                                                                                                                                                                                                                                                                         | Shift+Enter           |  |
| Start new line                                                                                                                                                                                                                                                                                                           | Shift+Enter           |  |
| Toggle case for word at caret or selected block                                                                                                                                                                                                                                                                          | Ctrl+Shift+U          |  |
| Select word / block end / start                                                                                                                                                                                                                                                                                          | Ctrl+Shift+J / [      |  |
| Delete to word end                                                                                                                                                                                                                                                                                                       | Ctrl+Delete           |  |
| Delete to word start                                                                                                                                                                                                                                                                                                     | Ctrl+Backspace        |  |
| Expand / collapse code block                                                                                                                                                                                                                                                                                             | Ctrl+NumPad+ / -      |  |
| Expand                                                                                                                                                                                                                                                                                                                   | Ctrl+Shift+NumPad+    |  |
| Collapse                                                                                                                                                                                                                                                                                                                 | Ctrl+Shift+NumPad-    |  |
| Close active editor tab                                                                                                                                                                                                                                                                                                  | Ctrl+F4               |  |
| <b>REFACTORING</b>                                                                                                                                                                                                                                                                                                       |                       |  |
| Copy                                                                                                                                                                                                                                                                                                                     | F5                    |  |
| Move                                                                                                                                                                                                                                                                                                                     | F6                    |  |
| Safe Delete                                                                                                                                                                                                                                                                                                              | Alt+Delete            |  |
| Rename                                                                                                                                                                                                                                                                                                                   | Shift+F6              |  |
| Refactor                                                                                                                                                                                                                                                                                                                 | Ctrl+Alt+Shift+T      |  |
| Change signature                                                                                                                                                                                                                                                                                                         | Ctrl+F6               |  |
| Inline                                                                                                                                                                                                                                                                                                                   | Ctrl+Alt+N            |  |
| Extract Method                                                                                                                                                                                                                                                                                                           | Ctrl+Alt+M            |  |
| Extract Variable                                                                                                                                                                                                                                                                                                         | Ctrl+Alt+V            |  |
| Extract Field                                                                                                                                                                                                                                                                                                            | Ctrl+Alt+F            |  |
| Extract Constant                                                                                                                                                                                                                                                                                                         | Ctrl+Alt+C            |  |
| Extract Parameter                                                                                                                                                                                                                                                                                                        | Ctrl+Alt+P            |  |
| <b>NAVIGATION</b>                                                                                                                                                                                                                                                                                                        |                       |  |
| Go to class                                                                                                                                                                                                                                                                                                              | Ctrl+N                |  |
| Go to symbol                                                                                                                                                                                                                                                                                                             | Ctrl+Shift+N          |  |
| Go to symbol                                                                                                                                                                                                                                                                                                             | Ctrl+Alt+Shift+N      |  |
| Go to next / previous editor tab                                                                                                                                                                                                                                                                                         | Alt+Right / Left      |  |
| Go back to previous tool window                                                                                                                                                                                                                                                                                          | F12                   |  |
| Go to editor (from tool window)                                                                                                                                                                                                                                                                                          | Esc                   |  |
| Hide active or last active window                                                                                                                                                                                                                                                                                        | Shift+Esc             |  |
| Go to line                                                                                                                                                                                                                                                                                                               | Ctrl+G                |  |
| Recent files popup                                                                                                                                                                                                                                                                                                       | Ctrl+E                |  |
| Recent locations popup                                                                                                                                                                                                                                                                                                   | Ctrl+Shift+E          |  |
| Navigate back / forward                                                                                                                                                                                                                                                                                                  | Ctrl+Alt+Left / Right |  |
| Navigate to last edit location                                                                                                                                                                                                                                                                                           | Ctrl+Shift+Backspace  |  |
| Select current line or symbol in any view                                                                                                                                                                                                                                                                                | Alt+F1                |  |
| Go to declaration                                                                                                                                                                                                                                                                                                        | Ctrl+B, Ctrl+Click    |  |
| Go to implementation                                                                                                                                                                                                                                                                                                     | Ctrl+Alt+B            |  |
| Open quick definition lookup                                                                                                                                                                                                                                                                                             | Ctrl+Shift+I          |  |
| Go to type declaration                                                                                                                                                                                                                                                                                                   | Ctrl+Shift+B          |  |
| Go to super-method / superclass                                                                                                                                                                                                                                                                                          | Ctrl+U                |  |
| Go to previous / next method                                                                                                                                                                                                                                                                                             | Alt+Up / Down         |  |
| Move to previous block end / start                                                                                                                                                                                                                                                                                       | Ctrl+J / [            |  |
| File structure popup                                                                                                                                                                                                                                                                                                     | Ctrl+F12              |  |
| Type hierarchy                                                                                                                                                                                                                                                                                                           | Ctrl+H                |  |
| Method hierarchy                                                                                                                                                                                                                                                                                                         | Ctrl+Shift+H          |  |
| Call hierarchy                                                                                                                                                                                                                                                                                                           | Ctrl+Alt+H            |  |
| Next / Previous highlighted error                                                                                                                                                                                                                                                                                        | F2 / Shift+F2         |  |
| Find usages / Find usages in file                                                                                                                                                                                                                                                                                        | F4 / Ctrl+Enter       |  |
| Show navigation pane                                                                                                                                                                                                                                                                                                     | Alt+Home              |  |
| Toggle bookmark                                                                                                                                                                                                                                                                                                          | F11                   |  |
| Toggle bookmark with mnemonic                                                                                                                                                                                                                                                                                            | Ctrl+F11              |  |
| Go to numbered bookmark                                                                                                                                                                                                                                                                                                  | Ctrl+#[0-9]           |  |
| Show bookmark                                                                                                                                                                                                                                                                                                            | Shift+F11             |  |
| <b>COMPILE AND RUN</b>                                                                                                                                                                                                                                                                                                   |                       |  |
| Build project                                                                                                                                                                                                                                                                                                            | Ctrl+F9               |  |
| Compile selected file / package or module                                                                                                                                                                                                                                                                                | Ctrl+Shift+F9         |  |
| Select configuration and run / debug                                                                                                                                                                                                                                                                                     | Alt+Shift+F10 / F9    |  |
| Run / Debug                                                                                                                                                                                                                                                                                                              | Shift+F10 / F9        |  |
| Run context configuration from editor                                                                                                                                                                                                                                                                                    | Ctrl+Shift+F10        |  |
| Run anything                                                                                                                                                                                                                                                                                                             | Double Ctrl           |  |
| <b>USAGE SEARCH</b>                                                                                                                                                                                                                                                                                                      |                       |  |
| Find usages                                                                                                                                                                                                                                                                                                              | Alt+F7 / Ctrl+F7      |  |
| Find usages in file                                                                                                                                                                                                                                                                                                      | Ctrl+Shift+F7         |  |
| Show usages                                                                                                                                                                                                                                                                                                              | Ctrl+Alt+F7           |  |
| <b>VCS / LOCAL HISTORY</b>                                                                                                                                                                                                                                                                                               |                       |  |
| Commit project to VCS                                                                                                                                                                                                                                                                                                    | Ctrl+K                |  |
| Update project from VCS                                                                                                                                                                                                                                                                                                  | Ctrl+T                |  |
| Queue commit                                                                                                                                                                                                                                                                                                             | Ctrl+Shift+K          |  |
| VCS quick popup                                                                                                                                                                                                                                                                                                          | Alt+BackQuote (`)     |  |
| <b>LIVE TEMPLATES</b>                                                                                                                                                                                                                                                                                                    |                       |  |
| Surround with Live Template                                                                                                                                                                                                                                                                                              | Ctrl+Alt+J            |  |
| Insert Live Template                                                                                                                                                                                                                                                                                                     | Ctrl+J                |  |



## REMEMBER THESE SHORTCUTS

|                                        |                  |
|----------------------------------------|------------------|
| Smart code completion                  | Ctrl+Shift+Space |
| Search everywhere                      | Double Shift     |
| Show intention actions and quick-fixes | Alt+Enter        |
| Generate code                          | Alt+Ins          |
| Parameter info                         | Ctrl+P           |
| Extend selection                       | Ctrl+W           |
| Shrink selection                       | Ctrl+Shift+W     |
| Recent files popup                     | Ctrl+E           |
| Rename                                 | Shift+F6         |

## GENERAL

|                                           |                    |
|-------------------------------------------|--------------------|
| Open corresponding tool window            | Alt+#[0-9]         |
| Save all                                  | Ctrl+S             |
| Synchronize                               | Ctrl+Alt+Y         |
| Toggle maximizing editor                  | Ctrl+Shift+F12     |
| Inspect current file with current profile | Alt+Shift+I        |
| Quick switch current scheme               | Ctrl+BackQuote (`) |
| Open Settings dialog                      | Ctrl+Alt+S         |
| Open Project Structure dialog             | Ctrl+Alt+Shift+S   |
| Find Action                               | Ctrl+Shift+A       |

## DEBUGGING

|                          |                     |
|--------------------------|---------------------|
| Step over/into           | F8 / F7             |
| Smart step into/Step out | Shift+F7 / Shift+F8 |
| Run to cursor            | Alt+F9              |
| Evaluate expression      | Alt+F8              |
| Resume program           | F9                  |
| Toggle breakpoint        | Ctrl+F8             |
| View breakpoints         | Ctrl+Shift+F8       |

## SEARCH / REPLACE

|                        |                  |
|------------------------|------------------|
| Search everywhere      | Double Shift     |
| Find                   | Ctrl+F           |
| Find next/previous     | F3 / Shift+F3    |
| Replace                | Ctrl+R           |
| Find in path           | Ctrl+Shift+F     |
| Replace in path        | Ctrl+Shift+R     |
| Select next occurrence | Alt+J            |
| Select all occurrences | Ctrl+Alt+Shift+J |
| Unselect occurrence    | Alt+Shift+J      |

## EDITING

|                                                 |                      |
|-------------------------------------------------|----------------------|
| Basic code completion                           | Ctrl+Space           |
| Smart code completion                           | Ctrl+Shift+Space     |
| Complete statement                              | Ctrl+Shift+Enter     |
| Parameter info                                  | Ctrl+P               |
| Quick documentation lookup                      | Ctrl+Q               |
| External Doc                                    | Shift+F1             |
| Brief info                                      | Ctrl+mouse           |
| Show descriptions of error at caret             | Ctrl+F1              |
| Generate code                                   | Alt+Insert           |
| Override methods                                | Ctrl+O               |
| Implement methods                               | Ctrl+I               |
| Surround with                                   | Ctrl+Alt+T           |
| Comment/uncomment with line comment             | Ctrl+ /              |
| Comment/uncomment with block comment            | Ctrl+Shift+ /        |
| Extend selection                                | Ctrl+W               |
| Shrink selection                                | Ctrl+Shift+W         |
| Context info                                    | Alt+Q                |
| Show intention actions and quick-fixes          | Alt+Enter            |
| Reformat code                                   | Ctrl+Alt+L           |
| Optimize imports                                | Ctrl+Alt+O           |
| Auto-indent line(s)                             | Ctrl+Alt+I           |
| Indent/unindent selected lines                  | Tab / Shift+Tab      |
| Cut current line to clipboard                   | Ctrl+X, Shift+Delete |
| Copy current line to clipboard                  | Ctrl+C, Ctrl+Insert  |
| Paste from clipboard                            | Ctrl+V, Shift+Insert |
| Paste from recent buffers                       | Ctrl+Shift+V         |
| Duplicate current line                          | Ctrl+D               |
| Delete line at caret                            | Ctrl+Y               |
| Smart line join                                 | Ctrl+Shift+J         |
| Smart line split                                | Ctrl+Enter           |
| Start new line                                  | Shift+Enter          |
| Toggle case for word at caret or selected block | Ctrl+Shift+U         |
| Select till code block end/start                | Ctrl+Shift+]/[       |
| Delete to word end                              | Ctrl+Delete          |
| Delete to word start                            | Ctrl+Backspace       |
| Expand/collapse code block                      | Ctrl+NumPad+/-       |
| Expand all                                      | Ctrl+Shift+NumPad+   |
| Collapse all                                    | Ctrl+Shift+NumPad-   |
| Close active editor tab                         | Ctrl+F4              |

## REFACTORING

|                   |                  |
|-------------------|------------------|
| Copy              | F5               |
| Move              | F6               |
| Safe Delete       | Alt+Delete       |
| Rename            | Shift+F6         |
| Refactor this     | Ctrl+Alt+Shift+T |
| Change Signature  | Ctrl+F6          |
| Inline            | Ctrl+Alt+N       |
| Extract Method    | Ctrl+Alt+M       |
| Extract Variable  | Ctrl+Alt+V       |
| Extract Field     | Ctrl+Alt+F       |
| Extract Constant  | Ctrl+Alt+C       |
| Extract Parameter | Ctrl+Alt+P       |

## NAVIGATION

|                                           |                       |
|-------------------------------------------|-----------------------|
| Go to class                               | Ctrl+N                |
| Go to file                                | Ctrl+Shift+N          |
| Go to symbol                              | Ctrl+Alt+Shift+N      |
| Go to next/previous editor tab            | Alt+Right / Left      |
| Go back to previous tool window           | F12                   |
| Go to editor (from tool window)           | Esc                   |
| Hide active or last active window         | Shift+Esc             |
| Go to line                                | Ctrl+G                |
| Recent files popup                        | Ctrl+E                |
| Recent locations popup                    | Ctrl+Shift+E          |
| Navigate back/forward                     | Ctrl+Alt+Left / Right |
| Navigate to last edit location            | Ctrl+Shift+Backspace  |
| Select current file or symbol in any view | Alt+F1                |
| Go to declaration                         | Ctrl+B, Ctrl+Click    |
| Go to implementation(s)                   | Ctrl+Alt+B            |
| Open quick definition lookup              | Ctrl+Shift+I          |
| Go to type declaration                    | Ctrl+Shift+B          |
| Go to super-method / super-class          | Ctrl+U                |
| Go to previous/next method                | Alt+Up / Down         |
| Move to code block end/start              | Ctrl+]/[              |
| File structure popup                      | Ctrl+F12              |
| Type hierarchy                            | Ctrl+H                |
| Method hierarchy                          | Ctrl+Shift+H          |
| Call hierarchy                            | Ctrl+Alt+H            |
| Next/Previous highlighted error           | F2 / Shift+F2         |
| Edit source/View source                   | F4 / Ctrl+Enter       |
| Show navigation bar                       | Alt+Home              |
| Toggle bookmark                           | F11                   |
| Toggle bookmark with mnemonic             | Ctrl+F11              |
| Go to numbered bookmark                   | Ctrl+#[0-9]           |
| Show bookmarks                            | Shift+F11             |

## COMPILE AND RUN

|                                          |                    |
|------------------------------------------|--------------------|
| Build project                            | Ctrl+F9            |
| Compile selected file, package or module | Ctrl+Shift+F9      |
| Select configuration and run/debug       | Alt+Shift+F10 / F9 |
| Run/Debug                                | Shift+F10 / F9     |
| Run context configuration from editor    | Ctrl+Shift+F10     |
| Run anything                             | Double Ctrl        |

## USAGE SEARCH

|                                   |                  |
|-----------------------------------|------------------|
| Find usages / Find usages in file | Alt+F7 / Ctrl+F7 |
| Highlight usages in file          | Ctrl+Shift+F7    |
| Show usages                       | Ctrl+Alt+F7      |

## VCS / LOCAL HISTORY

|                         |                   |
|-------------------------|-------------------|
| Commit project to VCS   | Ctrl+K            |
| Update project from VCS | Ctrl+T            |
| Push commits            | Ctrl+Shift+K      |
| VCS' quick popup        | Alt+BackQuote (`) |

## LIVE TEMPLATES

|                             |            |
|-----------------------------|------------|
| Surround with Live Template | Ctrl+Alt+J |
| Insert Live Template        | Ctrl+J     |



# Help → My Productivity

- Track progress in how productive you have become

Productivity Guide

IntelliJ IDEA uptime: 1 day, 4 hr, idle time: 2 sec, 804 ms

Code completion has saved you from typing at least 802,0K characters since 2014/01/09 (~611 per working day)

Quick fixes have saved you from 18,906 possible bugs since 2014/01/12 (~15 per working day)

| Feature                  | Group           | Used ▼        | Last Used    |
|--------------------------|-----------------|---------------|--------------|
| Syntax aware selection   | Code Editing    | 167,508 times | 16 hours ago |
| Variable name completion | Code Completion | 144,269 times | 16 hours ago |
| Basic code completion    | Code Completion | 88,357 times  | 16 hours ago |

To expand selection, press ⌘W. Each time you press ⌘W, the selection expands to other areas of code. For example, the selection expands from a method name to the expression calling this method, then to the whole statement, then to the containing block, and so on.

?

Close



# Searching

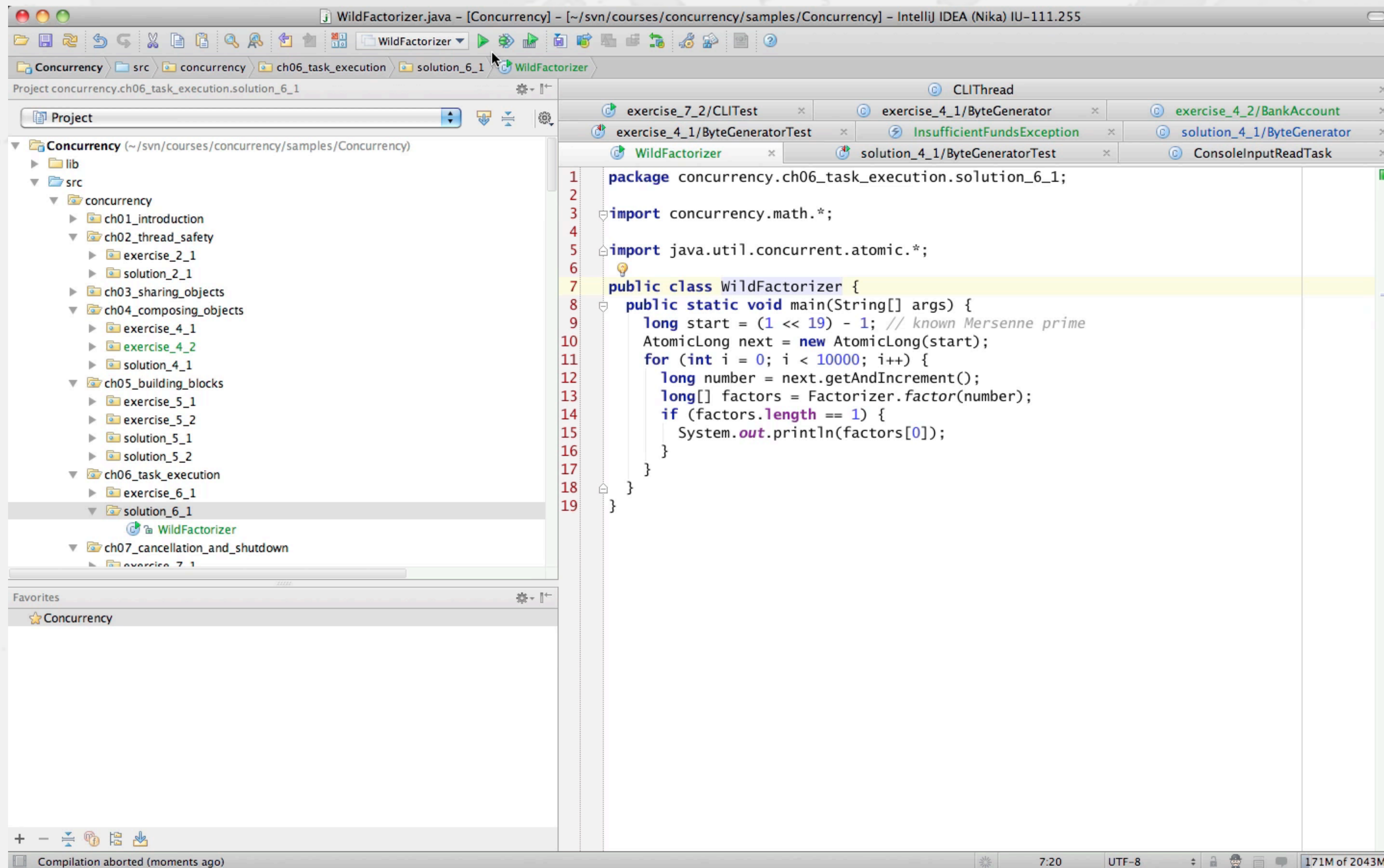
- **"Search Everywhere"**
  - Windows/Linux: Double Shift
  - Mac OS X: ⇧ ⇧
- **"Search Everywhere and Include non-project items"**
  - Windows/Linux: Quadruple Shift
  - Mac OS X: ⇧ ⇧ ⇧ ⇧
- **Kept on hitting this by mistake when pressing ↑**



# When IntelliJ IDEA Hangs Up



# Livelock from Corrupt Local Files

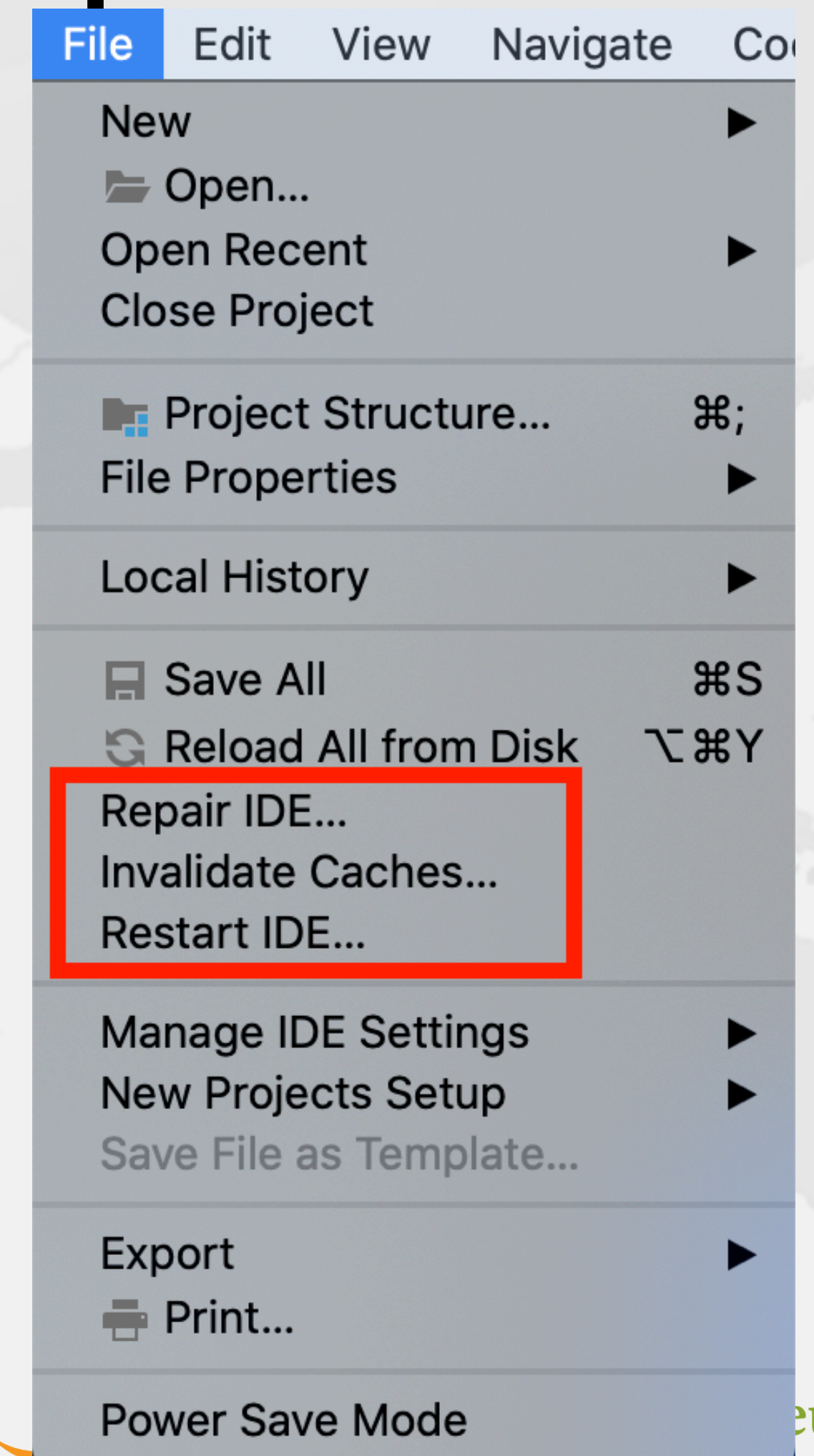




# Recovering from Broken Indexes

- **IntelliJ gets into a bad state if indexes are corrupted**

- **File → Repair IDE...**
  - **Try this first, stepping through until everything works**
- **File → Invalidate Caches...**
  - **Usually takes a while to reindex**
    - **But solves most of the problems**
    - **Try to not lose local history**





## Opening old projects

- **Modern versions of IntelliJ IDEA might go into infinite loops**
  - Need to kill with -9
- **Create new project with existing sources and overwrite old project files**



# Essential Shortcuts



# Superkey for fixing almost anything

- **"Show intention actions and quick-fixes"**

- Windows/Linux: **Alt + Enter**

- Mac OS X: **⌘↵**

# Generate new code

- **"Generate Code"**

- Windows/Linux: **Alt + Ins**
- Mac OS X (Official): **⌘N**
- Mac OS X (Heinz): **^↵** or **^N**

- **Quick demo creating playground.Person**

- Add final field, show difference between **^↵** and **⌘↵**



## Before we continue ...

- **Get our Data Structures in Java Course here**

- **[tinyurl.com/wjax2024-b](https://tinyurl.com/wjax2024-b)**
- **Coupon expires today at 13:00**
  - **You have life-time access to course**

- **For those watching the recording**

- **Sign up to The Java Specialists' Newsletter**
  - **[www.javaspecialists.eu](http://www.javaspecialists.eu)**
  - **Reply to the welcome mail that you would like this course**



# Live Templates

- **We can generate code quickly with live templates**

- **psvm or main: Main method**
- **sout, soutv, soutm, soutp: Output**
- **iter, fori, itco, itar: Iteration**

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# Navigation

- **"Go to declaration"**

- Windows/Linux: **Ctrl + B** or **Ctrl + Click**
- Mac OS X: **⌘B** or **⌘Click**

- **"Navigate back / forward"**

- Windows/Linux: **Ctrl + Alt + Left / Right**
- Mac OS X: **⌘⌘← / ⌘⌘→**

[tinyurl.com/wjax2024-b](https://tinyurl.com/wjax2024-b)



# Should you throw away your mouse?

- **Everything can be done with keyboard in IDEA**
  - It is useful to learn to touch type
  - I usually have left hand on keyboard and right on mouse
    - Easy enough to find the correct keys - index fingers on F & J
  - Change to US keyboard instead of German - the ; is better placed
    - Or use Kotlin :-)
- **For navigating, I find the mouse faster**
  - Hold down Ctrl or ⌘ and everything becomes a hyperlink
  - Scrolling with mouse or touchpad smoother



# Bookmarks

- **Quick navigation between locations in project**
- **Set with**
  - Windows/Linux: **Ctrl + Shift + #[0-9]**
  - Mac OS X: **⌘ ⇧ 0 ... ⌘ ⇧ 9**
- **Navigate with**
  - Windows/Linux: **Ctrl + #[0-9]**
  - Mac OS X: **⌘ 0 ... ⌘ 9**



# Syntax Aware Selection

## ● "Extend Selection"

- Windows/Linux: **Ctrl + W**
- Mac OS X (Official): **⌘↑**
- Mac OS X (Heinz): **⌘W**
  - Closes windows in other Mac OS X programs

| Feature                  | Group           | Used ▼        |
|--------------------------|-----------------|---------------|
| Syntax aware selection   | Code Editing    | 167,508 times |
| Variable name completion | Code Completion | 144,269 times |
| Basic code completion    | Code Completion | 88,357 times  |

## ● "Shrink Selection"

- Windows/Linux: **Ctrl + Shift + W**
- Mac OS X (Official): **⌘↓**
- Mac OS X (Heinz): **⌘⇧W**





## Move code up / down

- **"Move Code Up"**

- Windows/Linux: **Ctrl + Shift + Up**
- Mac OS X: **⌘⇧↑**

- **"Move Code Down"**

- Windows/Linux: **Ctrl + Shift + Down**
- Mac OS X: **⌘⇧↓**

- **Note: If nothing is selected, current line is selected**



# Turbo-boosted Productivity



# Surround with Live Template

- "Surround with Live Template"

- Windows/Linux: Ctrl + Alt + J

- Mac OS X: ⌘⌥J

- Again context aware, for example with Java

- C. Surround with Callable

- RL. Surround with ReadWriteLock.readLock

- WL. Surround with ReadWriteLock.writeLock

- I. Iterate Iterable or array

- Demo: changing main(String[]) to main(String...)

# Define your own Live Templates

- **Preferences -> Editor -> Live Templates**

- **e.g. Wrap code in System.nanoTime()**

- **Fantastic for demos, use JMH for serious benchmarks**

Abbreviation: `nanotime`

Description: `System.nanoTime()`

Template text:

```
long $TIME$ = System.nanoTime();
try {
    $SELECTION$
} finally {
    $TIME$ = System.nanoTime() - $TIME$;
    System.out.printf("$TIME$ = %dms%n",
        ($TIME$/1_000_000));
}
```



# Column Select Editing

- **With the mouse**

- Windows/Linux: Alt + Drag Mouse
- Mac OS X:  $\text{⌘}$ +drag mouse

- **With keyboard toggle column selection mode**

- Windows/Linux: Alt + Shift + Insert
- Mac OS X (Official):  $\text{⌘}$   $\text{⇧}$  8
- Mac OS X (Heinz):  $\text{⌘}$   $\text{^}$   $\text{⇧}$  C
- Make sure to turn column selection mode off afterwards

# Demo

- Inside the FruitSpec, create an enum that holds all the fields

```
public enum Field {  
    BARCODE("BarCode"),  
    RUNNUMBER("RunNumber"),  
    PUC("PUC"),  
    /* etc. ... */  
    GTIN("GTIN");  
    private final String name;  
  
    Field(String name) {  
        this.name = name;  
    }  
}
```



# AI Assistant

- **Let's try with the AI Assistant**



# Tips for Speakers



# Assign shortcut for Presentation Mode

- I used **Command + Option P**, same as for Keynote
- Change fonts or zoom level for presentation mode in
  - Appearance & Behavior -> Appearance -> Presentation Mode

# Define different Color Schemes for Resolutions

- **E.g. Darcula Talks 1080p, Darcula Talks 720p, etc.**
  - **Fonts should be easily readable when watching on a smart phone**
- **Might need to use white background with bad projector**
- **Switch quickly with Control + `**





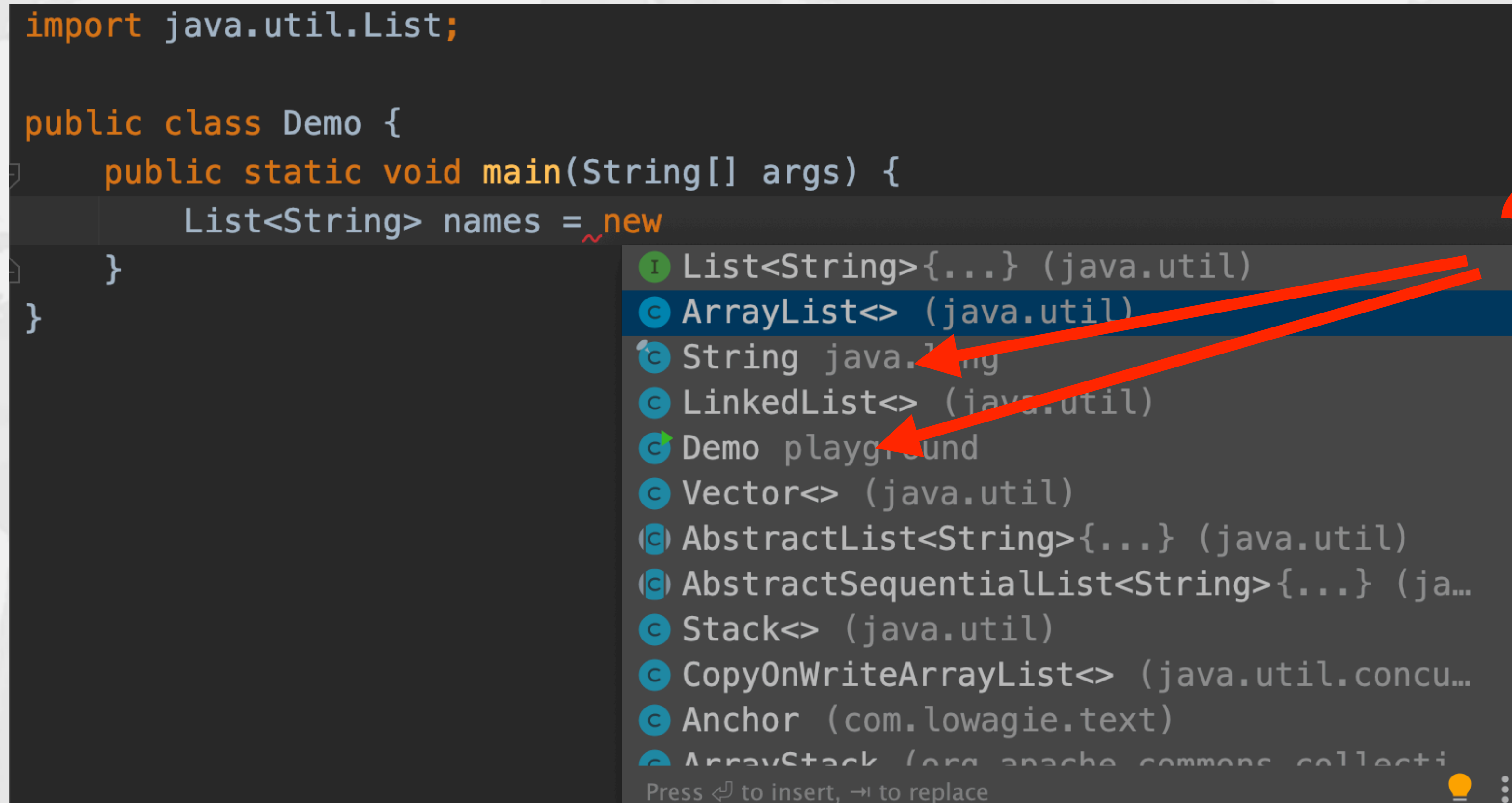
# Code Completion

# Basic Code Completion

- Code completion traditionally uses Ctrl+Space
  - Windows/Linux: Ctrl + Space
  - Mac OS X: ^Space

```
import java.util.List;

public class Demo {
    public static void main(String[] args) {
        List<String> names = new
    }
}
```



- List<String>{...} (java.util)
- ArrayList<> (java.util)
- String java.lang
- LinkedList<> (java.util)
- Demo playground
- Vector<> (java.util)
- AbstractList<String>{...} (java.util)
- AbstractSequentialList<String>{...} (ja...
- Stack<> (java.util)
- CopyOnWriteArrayList<> (java.util.concu...
- Anchor (com.lowagie.text)
- ArrayStack (org.apache.commons.collecti...

Press ↵ to insert, ⇧ to replace



# Smart Code Completion

- This gives much better result - I always use this
  - Windows/Linux: Ctrl + Shift + Space
  - Mac OS X: ^⇧Space

```
import java.util.List;
```

```
public class Demo {
```

```
    public static void main(String[] args) {
```

```
        List<String> names = new |
```

```
    }
```

```
}
```

1 List<String>{...} (java.util)

2 Anchor (com.lowagie.text)

3 ArrayList<> (java.util)

4 LinkedList<> (java.util)

5 AbstractList<String>{...} (java.util)

6 Vector<> (java.util)

7 AbstractSequentialList<String>{...} (ja...

8 Stack<> (java.util)

9 Phrase (com.lowagie.text)

10 CopyOnWriteArrayList<> (java.util.concu...

11 ArrayStack (org.apache.commons.collecti...

12 Chapter (com.lowagie.text)

Press ⇐ to insert, → to replace

# Commenting Out Code

- **"Comment / uncomment with line comment"**

- Windows/Linux: Ctrl + /

- Mac OS X: ⌘ /

- **By default, puts the // at the beginning of line**

- Change in Settings → Editor →

- Code Style → Java →

- Code Generation →

## Comment Code

☐ Line comment at first column

☒ Add a space at line comment start

☒ Enforce on reformat

☒ Block comment at first column

☐ Add spaces around block comments





# Refactoring

# Alter Class / Field / Method

- **"Move"**

- Windows/Linux: F6
- Mac OS X: F6

- **"Rename ..."**

- Windows/Linux: Shift + F6
- Mac OS X: ⌘F6

- **"Change Signature" - applies to methods**

- Windows/Linux: Ctrl + F6
- Mac OS X: ⌘F6



# Extract Method

- **Select a block of code and "Extract Method"**
  - Windows/Linux: Ctrl + Alt + M
  - Mac OS X: ⌘ + M
- **Some restrictions**
  - Cannot have more than one return value
  - Block must represent a set of statements or expressions
- **Additional benefits**
  - Extracting a method can discover other, similar, code

# Demo

- **generatePcdRemarks() method in PcdGenerator**

```
String remark = resultSet.getString("Remark1");
```

```
if (!"".equals(remark)) {  
    remarks.put(remark, remark);  
}
```

```
remark = resultSet.getString("Remark2");
```

```
if (!"".equals(remark)) {  
    remarks.put(remark, remark);  
}
```

```
remark = resultSet.getString("Remark3");
```

```
if (!"".equals(remark)) {  
    remarks.put(remark, remark);  
}
```



# Inline Code

- **Applies to methods, fields, local variables**
- **"Inline"**
  - Windows/Linux: **Ctrl + Alt + N**
  - Mac OS X: **⌘⇧N**
- **Conveniently close to "Extract Method" shortcut**

# Postfix Completion

- **Write a postfix after your expression and press tab**
  - **!** - Negates a boolean expression
  - **nn** - Adds a check verifying that an expression is not null
  - **null** - Adds a check verifying that an expression is null
  - **try** - Inserts a statement in a try-catch block
  - **var** - Introduces a local variable for an expression
- **Demo**





# Analyzer

# Analyzer

- **IntelliJ shines with its code analyzer and refactoring**
- **Code → Inspect Code ...**
  - Whole project
    - Or: Right-click in project → Analyze → Inspect Code ...
  - Inspection profile: Default IDE
- **It checks for the most glaring code inconsistencies**
  - Let's try it out together



# Java Language Migration Aids

## ● Demos

- Use enhanced switch in
  - `CdsGenerator#generateCfg()`
  - `PcdGenerator#generatePcdTemplate()`
- Use pattern variable in `ElegantTable#initGui()`
- Use try-with-resource in `LineSocket#receiveFile()`



# Conclusion



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# Conclusion IntelliJ Super Productivity

- **Many more keystrokes and features to learn**
- **One new one per day**
- **Happy coding!**