



JAVA

Spring Boot Development Using Command Line Only



DEVELOPER

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Java Programming Using Command Line ...



Intro



So this one is mostly for fun, but I wanted to see how difficult it would be



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Tools

While its possible to get these tools set up in Windows, this walkthrough will be done using Ubuntu linux. This should work with other *nix based systems like OSX and BSD as well.

- **vim** - Text editor
- **tmux** - Terminal Multiplexer - allows multiple windows inside of a command line terminal.
- **curl** - Command line http client. Well, technically not just http, but thats what we'll be using it for.
- **unzip** - We'll use this to unzip the Spring Initilizr project.
- **jdk** - We'll use openjdk 11.

Install Packages

```
sudo apt update
```

```
#Install needed packages. Its possible that your system already has one to al  
sudo apt install vim tmux curl unzip openjdk-11-jdk
```

Generate Spring Boot Project Using cUrl

Alot of people are now familiar with the super useful website <https://start.spring.io>, which can easily generate a Spring Boot project for you with all the needed dependencies. But did you know that Pivotal also exposes a command line API with the same functionality?



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We'll do a very simple REST API and persist to a H2 database. My curl command to generate the project would look like the following:

```
curl https://start.spring.io/starter.zip -d dependencies=h2,data-jpa,data-rest
```

The command includes our three dependencies, specifies that we'll be using Java 11, and saves the contents to a file named 'demo.zip'.

Lets unzip this file and open up our project.

```
#Create directory for project:
mkdir myproject

#Move file to new directory and go into folder:
mv demo.zip myproject
cd myproject

#Extract:
unzip demo.zip
```

The project should look like the following:

```
.
./.gitignore
./src
./src/main
./src/main/java
```



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```
./src/test/java
./src/test/java/com
./src/test/java/com/example
./src/test/java/com/example/demo
./src/test/java/com/example/demo/DemoApplicationTests.java
./mvnw.cmd
./demo.zip
./mvnw
./pom.xml
./HELP.md
./mvn
./mvn/wrapper
./mvn/wrapper/MavenWrapperDownloader.java
./mvn/wrapper/maven-wrapper.properties
./mvn/wrapper/maven-wrapper.jar
```

vim Setup

There are a few options we need to add to our vim configuration. To do so, lets edit our .vimrc file:

```
#Open file
vim ~/.vimrc
```

Add the following to the bottom of the file:

```
set ts=4 sw=4
set path+=**
set wildmenu
```

- The ts and sw is simply to replace tabs with 4 spaces.
- 'path+=**' adds recursive partial search, so we can find a file while



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one for a command line terminal to execute commands while we develop.

tmux

tmux commands are a little odd, and use the initiator 'ctrl+b' followed by the particular key. So for example, ctrl+b, release, then double quote (") will open a new window panel below the current. It takes a couple of commands to get used to, but its not so bad.

Once in tmux, you can create a new window by using one of the following commands:

- Create new window below: ctrl+b "
- Create new window to the right: ctrl+b %
- Move between windows: ctrl+b then arrow in particular direction
- Resize current window: ctrl+b+arrow (keep holding ctrl+b while you click the arrow key)

I won't list all commands, but a good tmux cheat sheet can be found [here](#).

Example:

```
=====
Netrw Directory Listing                               (netrw v165)
/home/renan/demo
Sorted by      name
Sort sequence: [\\/]$, \<core%\%(\\.d|+|)\|=|>\\.h$, \.c$, \.cpp$, \-|=|*$, *, \.o$, \.obj$, \.info$, \.swp$, \.bak$, \-$
Quick Help: <F1>:help  - :go up dir  D:delete  R:rename  s:sort-by  x:special
=====
./
./
mvnw/
mvnw*
.gitignore
HELP.md
demo.zip
mvnw.cmd
pom.xml
" " is a directory
```



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only commands I know which have actually allowed me to do pretty much anything I want in my development career. While it won't make you a gray beard, memorize these and you should be fine editing anything.

- i - insert mode
- x - delete current character
- \$ - go to end of line
- o - go to beginning of line
- / - find something within the current file
- shift+g - go to end of file
- gg - go to beginning of file
- :q! - quit and ignore any changes
- :x - save + quit
- :w - save
- :find - find file recursively inside of current directory. For example, :find *.java will find all java files in directory.
- :ls - list open files in buffer
- :b - change to buffer with id bufferId
- :buffers - shows buffers and associated number id
- ctrl+6 - changes to previous change
- :edit . - Open directory manager in current directory
- :edit - Open file in buffer
- :f - show full filepath of current file



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After creating my classes, I am able to execute my application by using the following inside of the project root:

```
./mvnw spring-boot:run
```

In The End

I can then open a new tmux panel and execute my curl commands. In the end, you will have something like the below. Honestly, I knew that I wasn't going to convince myself to give away my IDEs anytime soon, but wanted to have a little command line fun.

```
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class DemoApplication {

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

Beer.java DemoApplication.java RestRepository.java
:find RestRepository.java

{
  "_embedded": {
    "beers": [ {
      "name": "Jai Alai",
      "abv": 7.5,
      "_links": {
        "self": {
          "href": "http://localhost:8080/beers/1"
        }
      }
    }
  ]
}

ion: [org.hibernate.engine.transaction.jta.platform.internal.NoJtaPlatform]
2020-05-07 23:57:08.178 INFO 7066 --- [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for
persistence unit 'default'
2020-05-07 23:57:09.283 WARN 7066 --- [main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by de
fault. Therefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warn
ing
2020-05-07 23:57:09.523 INFO 7066 --- [main] o.s.s.concurrent.ThreadPoolTaskExecutor : Initializing ExecutorService 'applicatio
nTaskExecutor'
2020-05-07 23:57:10.226 INFO 7066 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http) w
ith context path ''
2020-05-07 23:57:10.233 INFO 7066 --- [main] com.example.demo.DemoApplication : Started DemoApplication in 7.646 seconds
(JVM running for 8.393)

[0] 0:vi* "compaq" 23:57 07-May-20
```



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