



Build automation



Dario Campagna



Agenda



Build automation

Gradle

Gradle usage example

Other build automation tools

Software build

Includes a number of tasks

- Compiling source code
- Running automated tests
- Copying resources
- Packaging the application
- ...

These tasks are...

- ...repetitive
- ...run multiple times a day
- ...expected to be as fast as possible
- ...expected to work on different machines
- ...ideal candidate for automation

Build automation is the process of automating the creation of a software build and the associated processes

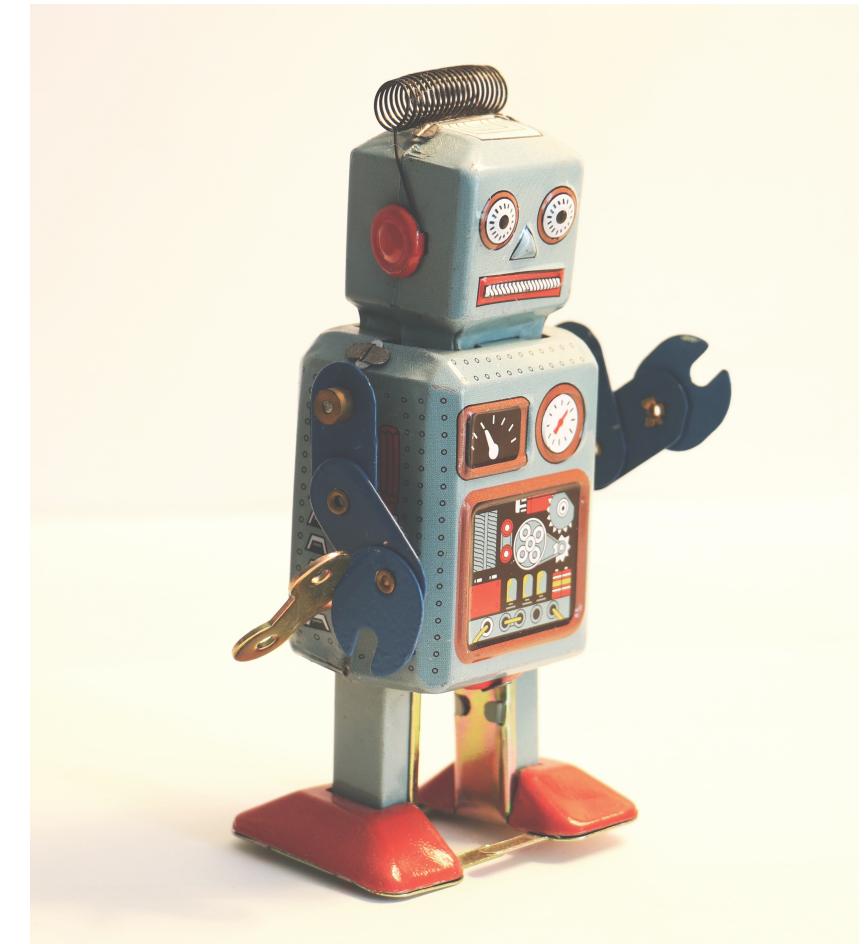
From https://en.wikipedia.org/wiki/Build_automation



Build automation

Build automation can bring a number of advantages.

- Accelerate compile and link processing
- Eliminate redundant tasks
- Minimize “bad builds”
- Save time and money



Gradle

Open-source build automation tool.

- Flexibility
- Performance
- Support for many popular languages and technologies



Some Gradle features

Gradle is designed to be flexible enough to build almost any type of software.

- High performance
- JVM foundations
- Extensibility
- IDE support

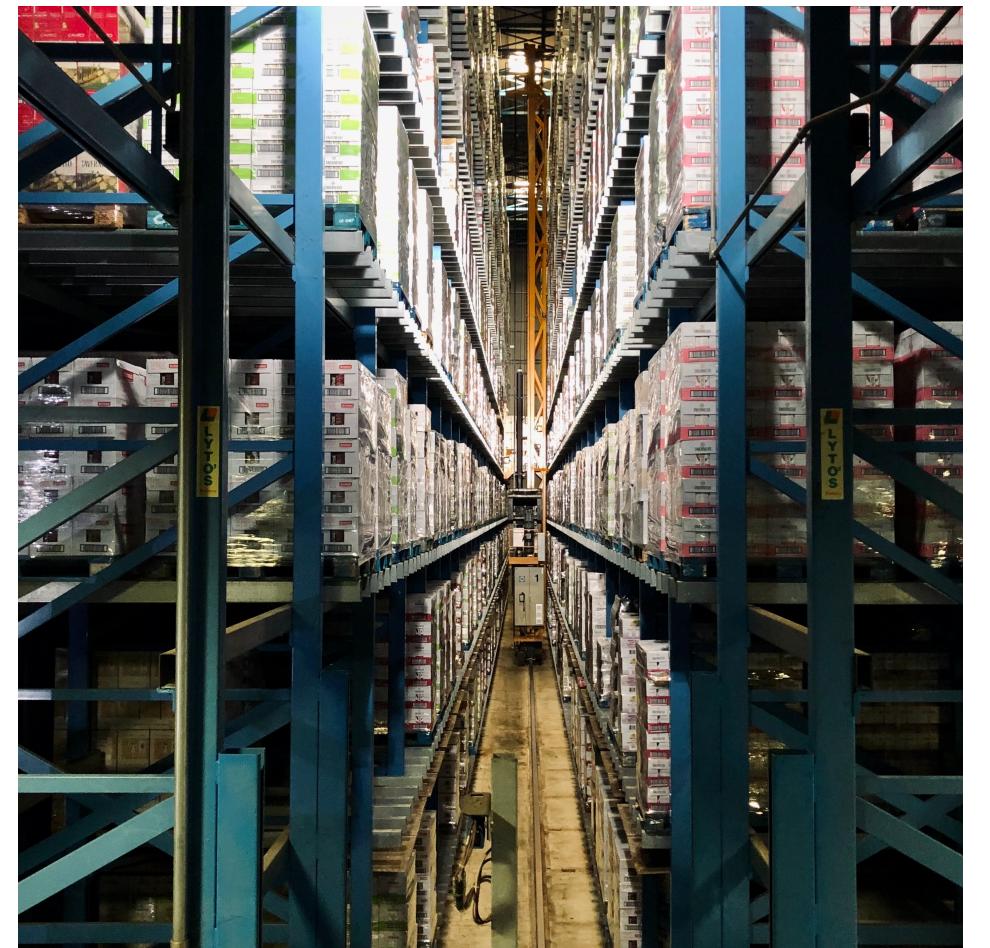


Picture from <https://gradle.org>

Dependency management

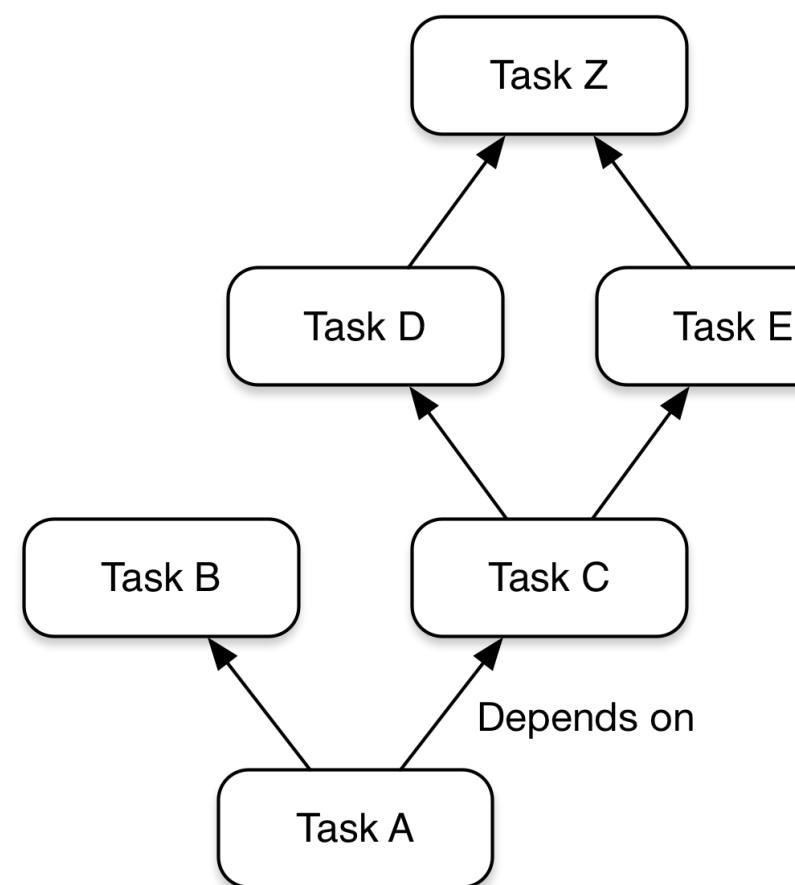
Gradle most notable restriction.

- Maven repositories
- Ivy repositories
- Filesystem

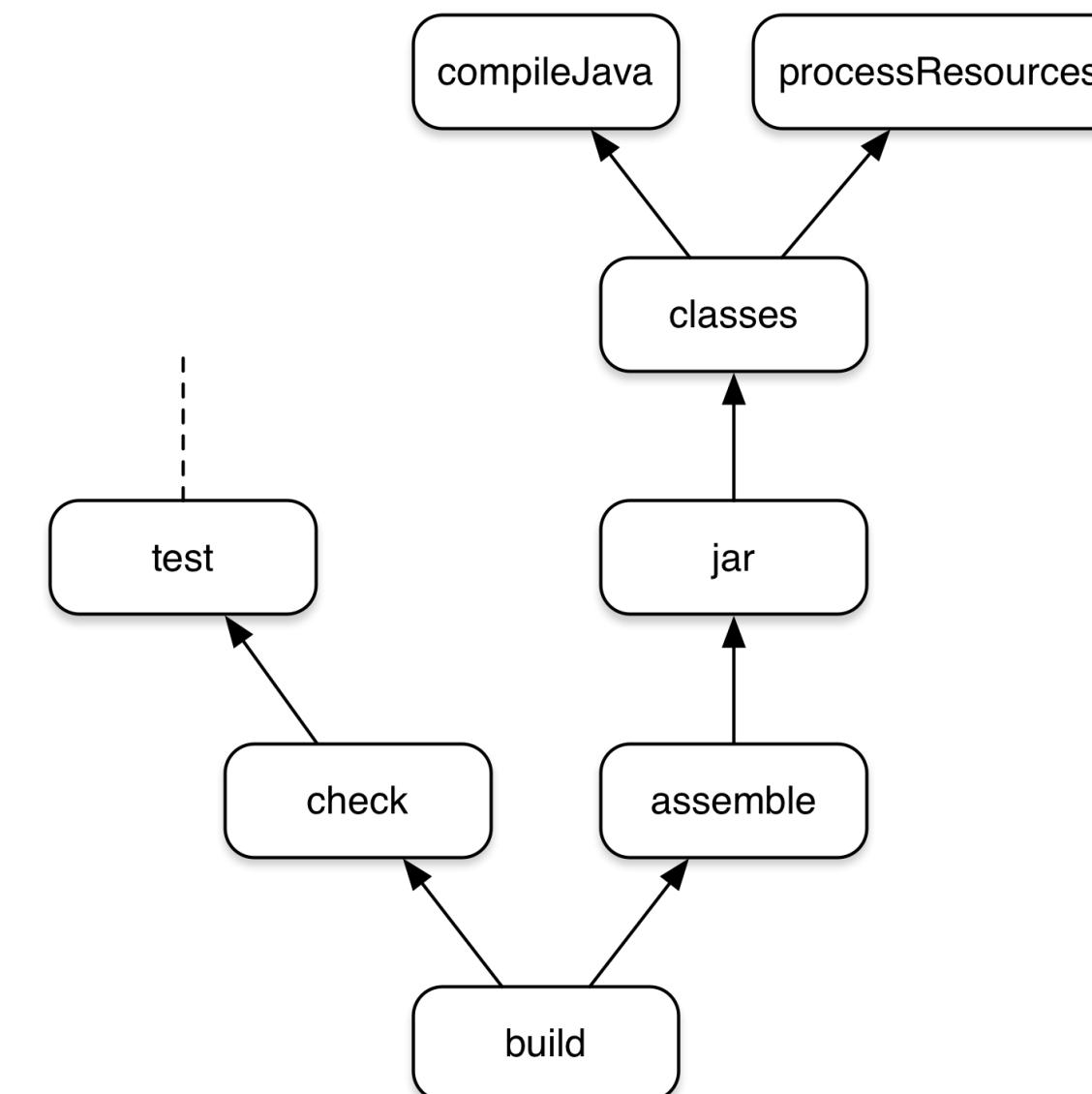


Tasks

Generic task graph



Partial task graph for a standard Java build



Picture from https://docs.gradle.org/current/userguide/what_is_gradle.html

Let's try Gradle

Write a Java program that prints on the standard output the string “Hello *name*!”, where *name* is the first program argument, or “Hello stranger!” when no argument is provided.

- Create a new Java project using IntelliJ Gradle plugin
- Look at the project structure and files
- Write the program
- Run some tasks



Other build automation tools

Gradle is only one of the available tools for build automation.

- make
 - MSBuild
 - Apache Ant
 - Apache Maven
 - ...

```
Installing package  
ge: android-sdk 26.1.1-1 (Mon Feb 12 11:00:00 UTC 2018)  
ntime dependencies...  
ldtime dependencies...  
ources...  
) sdk-tools-linux-4333796.zip...  
Received % Xferd Average Speed Ti  
Dload Upload To: 0:00  
147M 0 0 4682k 0 0:00  
old-sdk.sh  
old-sdk.csh  
old-sdk.conf  
nse.html  
source files with sha1sums...  
inux-4333796.zip ... Passed  
.sh ... Passed  
.csh ... Passed  
.conf ... Passed  
do with bs10981 568 ZOOG  
saikiran 231 ZOOG  
saikiran 1 ZOOG  
saikiran 380 ZOOG  
saikiran 472 ZOOG  
saikiran 902 ZOOG  
saikiran 22651 ZOOG  
saikiran 31208 ZOOG  
saikiran 21853 ZOOG  
saikiran 1 ZOOG  
saikiran 231 ZOOG  
saikiran 568 ZOOG
```

References



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https://en.wikipedia.org/wiki/Build_automation

What is Gradle?

https://docs.gradle.org/current/userguide/what_is_gradle.html

Gradle User Manual

<https://docs.gradle.org/current/userguide/userguide.html>



esteco.com



Go automate!

