Build Tools 2

COMS10012 Software Tools

Python

package manager: pip

```
$ pip install mistletoe
```

environment manager: v(irtual)env

distribution: conda

```
$ conda install numpy
```

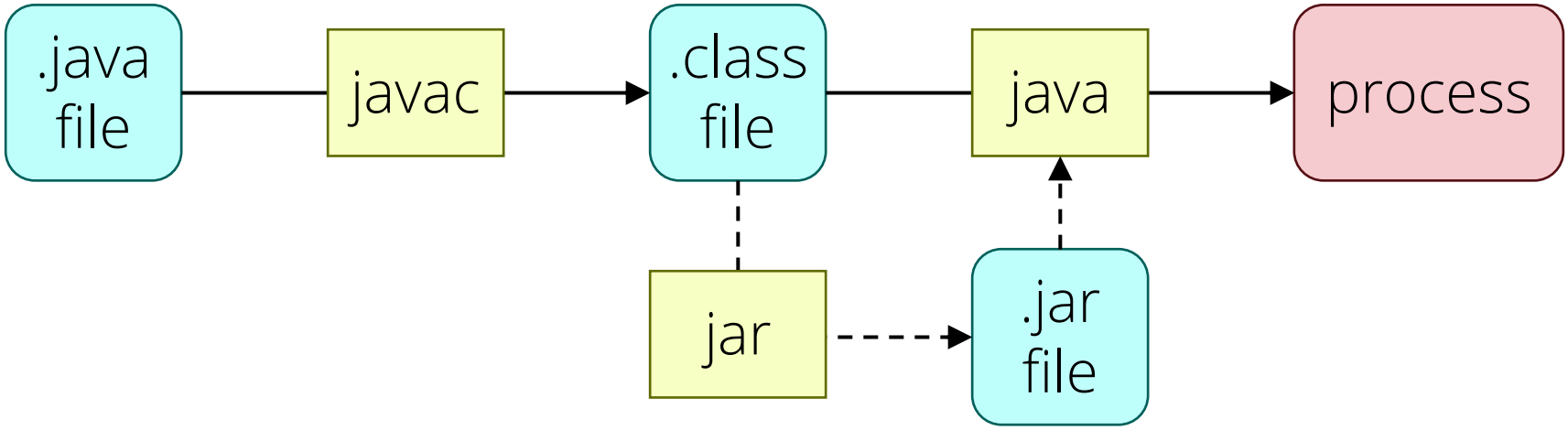
golang

```
$ go get github.com/joho/godotenv
```

Package manager, but decentralised: packages can just be loaded from URLs.

Java classpath

```
$ java -cp [list of JARs] MAINCLASS
```



Java / Maven

Repository: **mvnrepository.org**

```
<dependency>
  <groupId>org.mariadb.jdbc</groupId>
  <artifactId>mariadb-java-client</artifactId>
  <version>2.7.2</version>
</dependency>
```

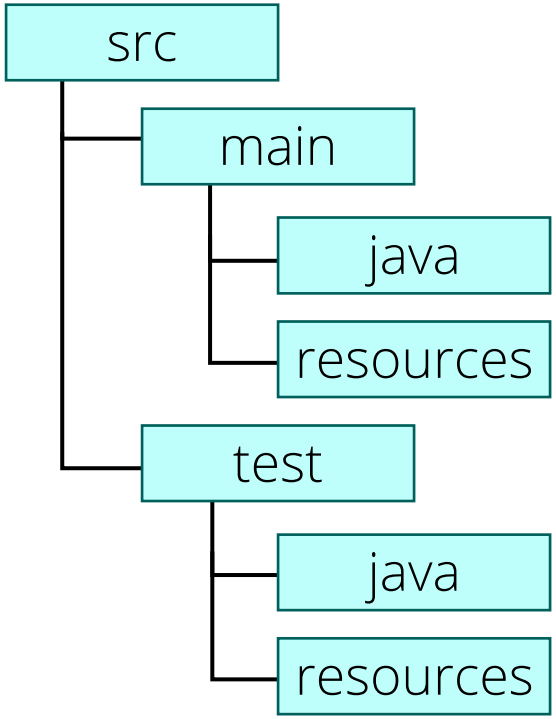
Maven

- Everything is an artifact with (groupId, artifactId, version).
- Artifacts can be hosted in repositories, see https://mvnrepository.org
- artifacts can have dependencies, maven resolves these (recursively)
- everything is downloaded to a cache (~/.m2/repository)

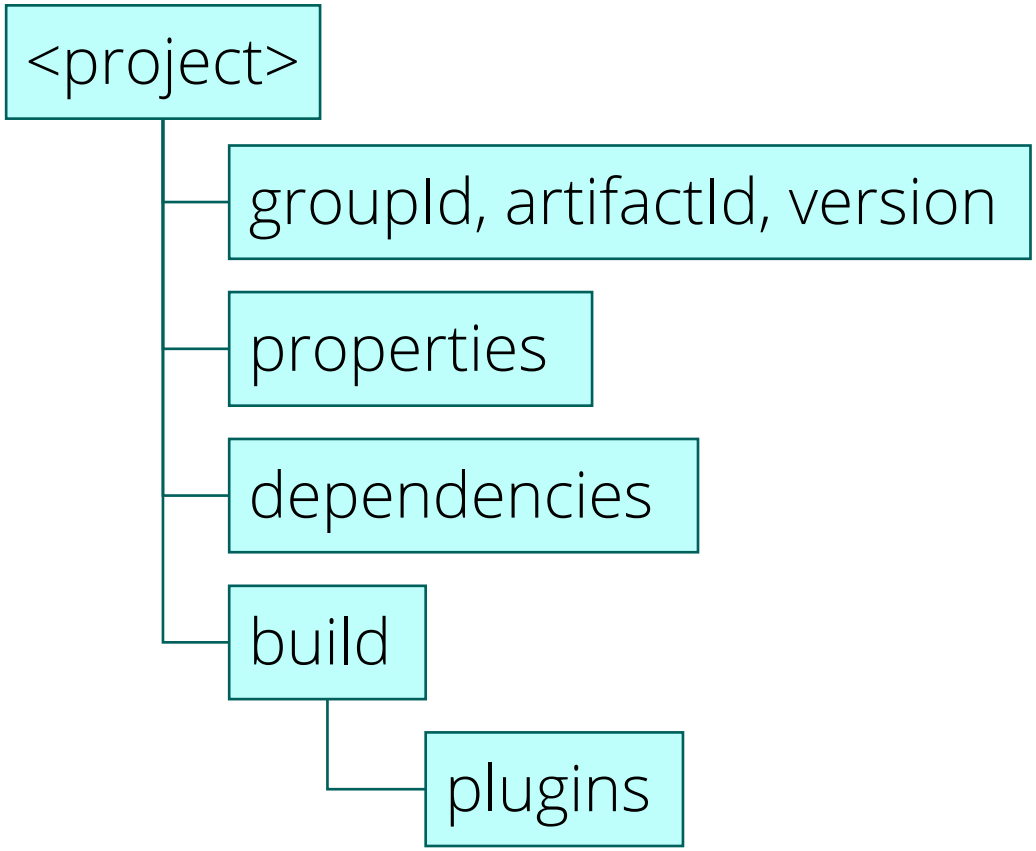
Maven

project folder: contains `pom.xml`

folder structure:



pom.xml


<project>
groupId, artifactId, version
properties
dependencies
build
plugins

exec plugin

```
<build>
    <plugins>
      <plugin>
        <groupId>org.codehaus.mojo</groupId>
        <artifactId>exec-maven-plugin</artifactId>
        <version>3.0.0</version>
        <configuration>
          <mainClass>org.example.Example</mainClass>
        </configuration>
       </plugin>
```

Maven

```
mvn archetype:generate

mvn compile
mvn clean
mvn test

mvn package
mvn exec:java
```