

COMP 2718: Software Development Tools: ant: Part 1

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<http://www.cs.washington.edu/390a/>

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What about Java?

- **Example:** Example.java that uses a class MyValue in MyValue.java
 - Compile Example.java and run it
 - javac automatically found and compiled MyValue.java
 - Now, alter MyValue.java
 - Re-compile Example.java... does the change we made to MyValue propagate?
 - Yep! javac follows similar timestamping rules as the makefile dependencies. If it can find both a .java and a .class file, and the .java is newer than the .class, it will automatically recompile
- But, this is still a simplistic feature. Ant is a commonly used build tool for Java programs giving many more build options.

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Apache Ant

- Product of the Apache Software Foundation, a decentralized collection of open-source developers (similar to GNU)
- Created with similar objectives to make, but with the following differences:
 - Intended to be portable and not restricted to Unix-like OS's; Hence, it does not make use of shell commands (although they can be accessed)
 - Makefiles have their own particular format, ant's build files are based on XML
- Ant is written in Java and uses Java constructs, but could be used for C/C++ or any other language
- (make is similar in that it could be used for Java development)

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Ant

- Similar idea to Make, though Ant uses build.xml instead of Makefile:


```
<project>
  <target name="name">
    tasks
  </target>

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    tasks
  </target>
</project>
```
- Tasks can be things like:
 - <javac ... />
 - <mkdir ... />
 - <delete ... />
 - A whole lot more...<http://ant.apache.org/manual/tasksoverview.html>

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Ant Example

- Create an Ant file to compile our Example.java program
- Running ant (assuming build.xml in current directory):
\$ ant *targetname*

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Ant Example

- Create an Ant file to compile our Example.java program
- ```
<project>
 <target name="clean">
 <delete dir="build"/>
 </target>

 <target name="compile">
 <mkdir dir="build/classes"/>
 <javac srcdir="src" destdir="build/classes"/>
 </target>
</project>
```

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