

Apache ANT

- **Java Related tasks**

- Compilation
- Package
- Run a jar file

build.xml

```
<project name="test" default="run">

    <target name="clean">
        <delete dir="build" />
    </target>

    <target name="compile" depends="clean">
        <echo> Java Compile task </echo>
        <mkdir dir="build/classes" />
        <javac srcdir="src" destdir="build/classes" />
    </target>

    <target name="package" depends="compile">
        <echo> Java package task </echo>

        <jar basedir="build/classes"
            destfile="build/jar/Helloworld.jar">

            <manifest>
                <attribute name="Main-Class" value="Hello"/>
            </manifest>
        </jar>
    </target>

    <target name="run" depends="package">
        <echo>running jar file task </echo>
        <java jar="build/jar/Helloworld.jar" fork='true' />
    </target>

</project>
```

OUTPUT

```
E:\Ant\Ant Exercises\Exercise4>ant -buildfile JavaTest_2.xml
Buildfile: E:\Ant\Ant Exercises\Exercise4\JavaTest_2.xml

clean:
    [delete] Deleting directory E:\Ant\Ant Exercises\Exercise4\build

compile:
    [echo] Java Compile task
    [mkdir] Created dir: E:\Ant\Ant Exercises\Exercise4\build\classes
    [javac] E:\Ant\Ant Exercises\Exercise4\JavaTest_2.xml:10: warning: 'includea
ntruntime' was not set, defaulting to build.sysclasspath=last; set to false for
repeatable builds
    [javac] Compiling 1 source file to E:\Ant\Ant Exercises\Exercise4\build\clas
ses

package:
    [echo] Java package task
    [jar] Building jar: E:\Ant\Ant Exercises\Exercise4\build\jar\Helloworld.jar

run:
    [echo] running jar file task
    [java] Hello World

BUILD SUCCESSFUL
Total time: 3 seconds
```

- **Properties**

- it is variable in a programming language
- Ant uses the **Property** element which allows you to specify properties
- It allows the properties to be changed from one build to another or from one environment to another

Types of properties

1. Default properties
2. Defining variables inside the build.xml file
3. build.properties
4. Command line properties(-Dx=5)

1.Default Properties

- These properties are provided by Ant by default and they can be called within the build file itself.

build.xml

```
<?xml version="1.0"?>
<project name="Hello World Project" default="info">

    <target name="info">
        <echo>Apache Ant version is --- ${ant.version}</echo>
        <echo>Build File Location    --- ${ant.file}</echo>
        <echo>Base Directory        --- ${basedir}</echo>
        <echo>The Java Version      --- ${ant.java.version}</echo>
        <echo>The Project Name      --- ${ant.project.name}</echo>
        <echo>The Project Default Target ---
${ant.project.default-target}</echo>

        <echo>The Invoked Targets    --- ${ant.project.invoked-
targets}</echo>

        <echo>The Ant Core Library    --- ${ant.core.lib}</echo>
        <echo>The Ant Home Directory  --- ${ant.home}</echo>
        <echo>The Ant Library Directory --- ${ant.library.dir}
</echo>
    </target>

</project>
```

OUTPUT

```
E:\Ant\Ant Exercises\Exercise5>ant -buildfile Default_properties.xml
Buildfile: E:\Ant\Ant Exercises\Exercise5\Default_properties.xml

info:
[echo] Apache Ant version is --- Apache Ant(TM) version 1.9.7 compiled on
April 9 2016
[echo] Build File Location    --- E:\Ant\Ant Exercises\Exercise5\Default_pr
operties.xml
[echo] Base Directory        --- E:\Ant\Ant Exercises\Exercise5
[echo] The Java Version      --- 1.7
[echo] The Project Name      --- Hello World Project
[echo] The Project Default Target --- info
[echo] The Invoked Targets    --- info
[echo] The Ant Core Library    --- E:\apache-ant-1.9.7\lib\ant.jar
[echo] The Ant Home Directory  --- E:\apache-ant-1.9.7
[echo] The Ant Library Directory --- E:\apache-ant-1.9.7\lib

BUILD SUCCESSFUL
Total time: 0 seconds
```

2. Defining variables inside the build.xml file

- A variable is defined in build file which can be called across the file in any targets.

build.xml

```
<project name="test" default="test">

  <property name="x" value="Hello capital info solutions"/>

  <target name="test">
    <echo> x value is: ${x} </echo>
  </target>

</project>
```

OUTPUT

```
E:\Ant\Ant Exercises\Exercise6>ant -buildfile Inside_build.xml
Buildfile: E:\Ant\Ant Exercises\Exercise6\Inside_build.xml

test:
 [echo] x value is: Hello capital info solutions

BUILD SUCCESSFUL
Total time: 0 seconds
```

3. build.properties

- Setting properties directly in the build file is not recommended for large project, it makes sense to store the properties in separate file.
- Build properties file can be maintained separately for DEV, TEST, and PROD environments.
- There is no hard and fast rule, but typically the property file is named **build.properties** and is placed along-side the **build.xml** file.
- You could create multiple build property files based on the deployment environments such as **build.properties.dev** and **build.properties.test**.

Property file(Inside_properties.properties)

```
# The Site Name
siteName=http://www.capitalinfosol.com/
buildVersion=1.9.6
```

build.xml

```
<?xml version="1.0"?>
<project name="Hello World Project" default="info">

  <property file="Inside_properties.properties"/>

  <target name="info">
```

```
<echo>Apache Ant version is ${buildversion} - You are at
${sitename} </echo>

</target>

</project>
```

OUTPUT

```
E:\Ant\Ant Exercises\Exercise6\inside_properties>ant -buildfile Inside_properties.xml
Buildfile: E:\Ant\Ant Exercises\Exercise6\inside_properties\Inside_properties.xml
info:
[echo] Apache Ant version is 1.9.6 - You are at http://www.capitalinfosol.com/
BUILD SUCCESSFUL
Total time: 0 seconds
```

4. Command line properties

- Values to variables can be passed at runtime through command line (-Dx=5)

build.xml

```
<project name="test" default="test">

    <target name="test">
        <echo> x value is: ${x} </echo>
        <echo> y value is: ${y} </echo>
    </target>

</project>
```

OUTPUT

```
E:\Ant\Ant Exercises\Exercise6\inside_argument>ant -buildfile Property_Argument.xml -Dx=10 -Dy=20
Buildfile: E:\Ant\Ant Exercises\Exercise6\inside_argument\Property_Argument.xml
test:
[echo] x value is: 10
[echo] y value is: 20
BUILD SUCCESSFUL
Total time: 0 seconds
```