

To-Do Date: Nov 12 at 11:59pm


Module 10: Aspect-Oriented Programming

Topic Preparation

Here is a list of materials you will need to read in preparation for the upcoming quiz and tutorial. Read everything carefully to make sure you understand the concepts presented here.

• Readings

- In the JBoss AOP - User Guide read:

-  [Chapter 1. What Is Aspect-Oriented Programming?](https://docs.jboss.org/aop/1.0/aspect-framework/userguide/en/html/what.html)
(<https://docs.jboss.org/aop/1.0/aspect-framework/userguide/en/html/what.html>)
-  [Chapter 2. Terms](https://docs.jboss.org/aop/1.0/aspect-framework/userguide/en/html/terms.html) (<https://docs.jboss.org/aop/1.0/aspect-framework/userguide/en/html/terms.html>)

OPTIONAL: Watch What is AOP - Aspect Oriented Programming

What is AOP - Aspect Oriented Programming



Transcript Forthcoming

Preparing to use Aspect-Oriented Programming

AOP can be implemented in a variety of ways. We will be using AspectJ. It is an extension of the Java programming language.

1. Install/verify **IntelliJ Ultimate Edition**

*The community Version of IntelliJ does **NOT** support the AspectJ compiler. You will need to install the IntelliJ Ultimate Edition to use it. **You can have multiple editions of IntelliJ installed at the same time**, so you will not need to uninstall or overwrite your current installation.*

1. Make sure you have an [@byu.edu e-mail alias](https://alias.byu.edu/) [\(https://alias.byu.edu/\)](https://alias.byu.edu/)
2. **Apply for the [Student IntelliJ Licenses](https://www.jetbrains.com/student/)** [\(https://www.jetbrains.com/student/\)](https://www.jetbrains.com/student/)
 1. After applying you will receive an e-mail from JetBrains, You will need to go to it and **confirm your e-mail**
 2. After confirming your e-mail you will be redirected to a page where you can sign-in to an existing IntelliJ account or create a new IntelliJ account
 1. **You will need an IntelliJ account** to access the Ultimate edition, so make sure to register for an account if you don't already have one.
 3. After logging in/registering you will be brought to a page showing your education license.
 4. Click Download -> **Click IntelliJ IDEA Ultimate. Download and install.**

2. Install IntelliJ AspectJ Plugin

1. Follow the steps given to install and enable the [AspectJ Plugin](https://www.jetbrains.com/help/idea/aspectj.html) [\(https://www.jetbrains.com/help/idea/aspectj.html\)](https://www.jetbrains.com/help/idea/aspectj.html)
 - Not installing this plugin will cause the AJC compiler to not appear in the list of available compilers

1 License

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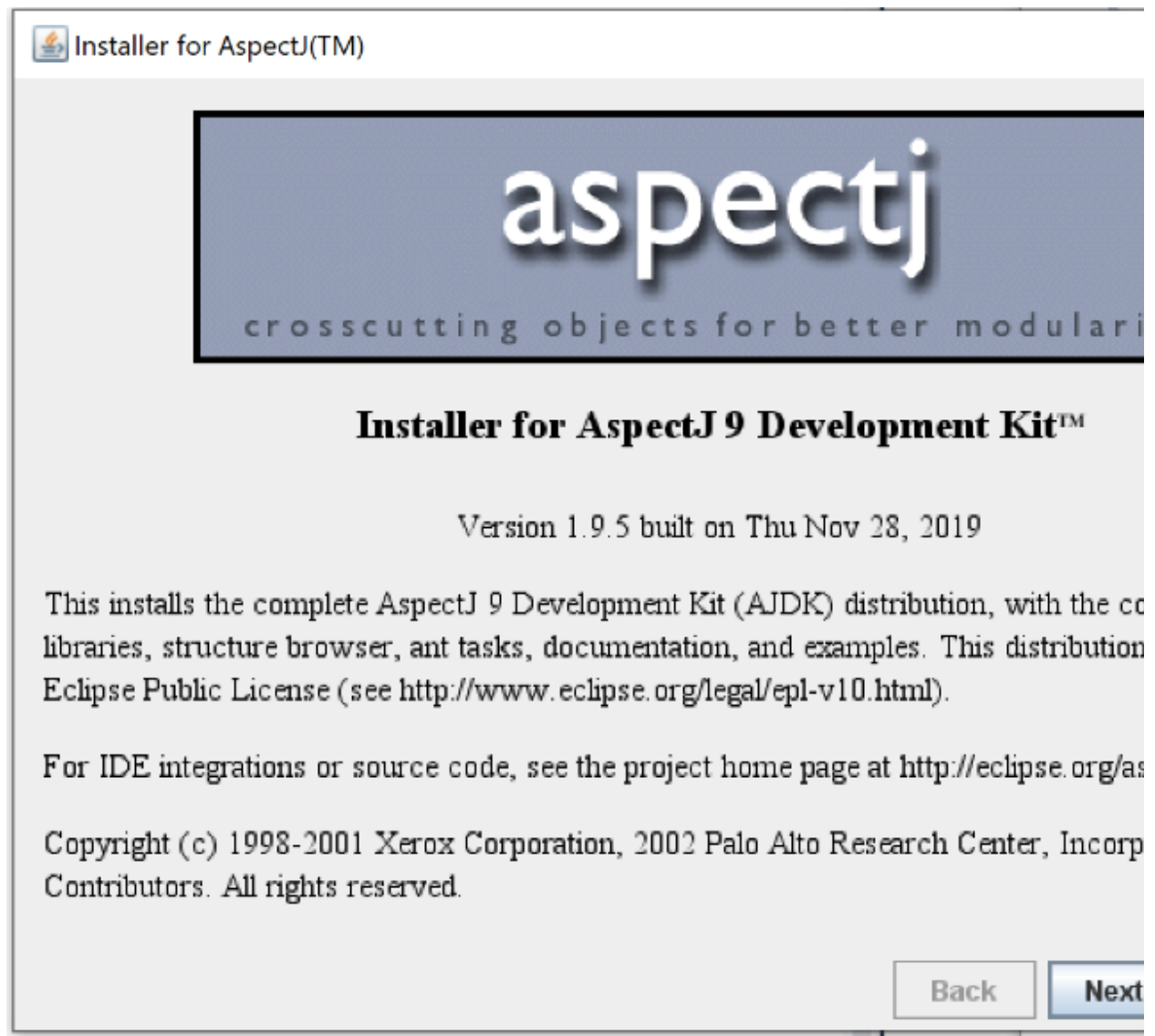
Using Aspect-Oriented Programming with AspectJ

AspectJ has its own compiler, ajc. It is an enhanced version of javac. It will compile normal java code as well as aspect code.

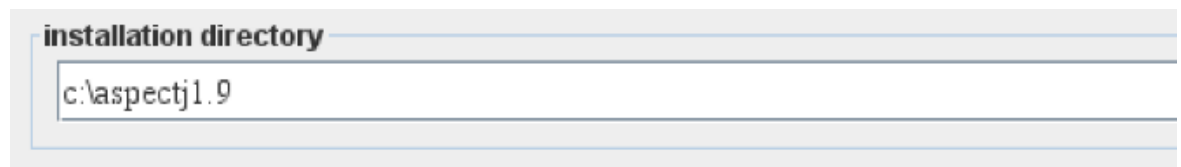
- Read the **first page** of [AspectJ and AOP – The black magic of programming](https://blog.jayway.com/2015/09/03/aspectj-and-aop-the-black-magic-of-programming/) (<https://blog.jayway.com/2015/09/03/aspectj-and-aop-the-black-magic-of-programming/>)

1. Download and Install AspectJ

1. **Download the latest Stable jar release of [AspectJ](https://www.eclipse.org/aspectj/downloads.php)**
(<https://www.eclipse.org/aspectj/downloads.php>)
2. **Run the AspectJ jar and run through the installation wizard**



1. **Note:** Make sure to take note of where you are installing AspectJ, you will need to access this folder later



2. SetUp AspectJ on an IntelliJ Project

1. Follow the guide, [Creating an IntelliJ Project for use in AspectJ](https://www.google.com/url?q=https://drive.google.com/open?id%3D1BnNSZ15zQUweNuswG2FQutKXKhUmX5M1qJxygSuLg70&sa=D&source=editors)
(<https://www.google.com/url?q=https://drive.google.com/open?id%3D1BnNSZ15zQUweNuswG2FQutKXKhUmX5M1qJxygSuLg70&sa=D&source=editors>)

<https://byu.instructure.com/courses/11344/modules/items/1023172>, and create an IntelliJ project that can use AspectJ

Advices

Note: If your aspects suddenly seem to have stopped working, your maven might not be compiling only the main.java file without weaving in the aspects you defined. A quick and dirty fix is to make a change in both files (a space or comment) before compiling so that both files are recompiled at the same time.



Finishing Up:



If you have an IntelliJ project that can run the example aspect, then you are finished and ready for the lab.




What to Learn



Study these concepts before taking the quiz:



- What is Aspect-Oriented Programming?
- What are the benefits of AOP?
- What concerns does AOP address?
- What is an aspect?
- What are the parts of an aspect?







 (<https://byu.instructure.com/courses/11344/modules/items/1023172>)



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