Core Java

Packages

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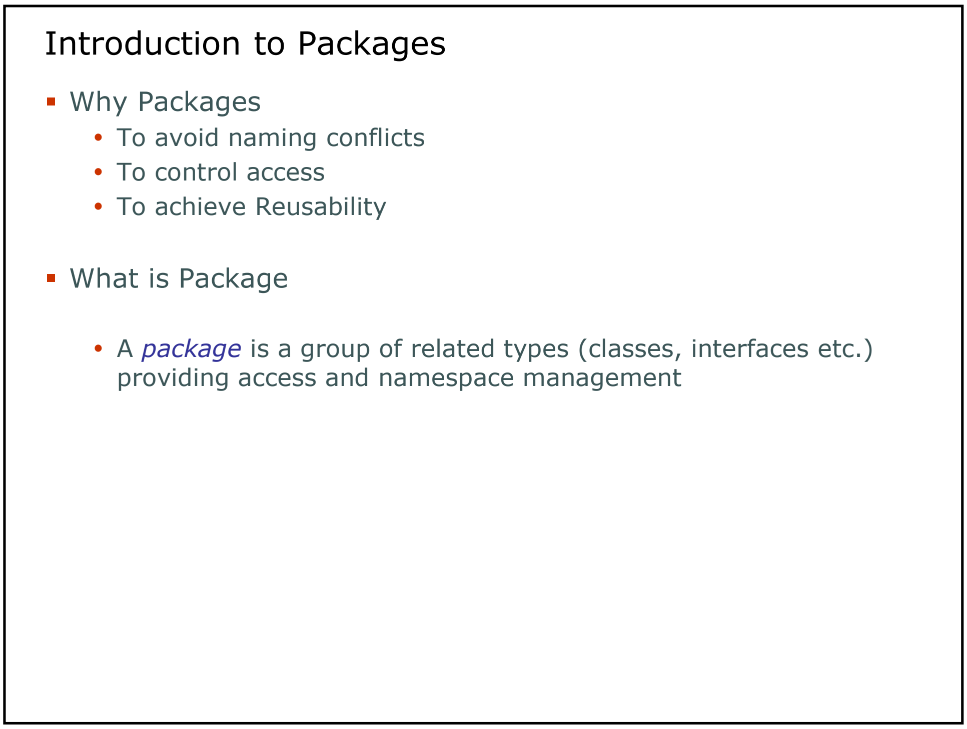

Introduction to Packages

- Why Packages
  - To avoid naming conflicts
  - To control access
  - To achieve Reusability
- What is Package
  - A *package* is a group of related types (classes, interfaces etc.) providing access and namespace management

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Predefined Packages

- Already defined in the Java API library & can be *imported* into user programs

- Examples of predefined packages:

Core packages

`java.lang.*;`	Frequently required Operations (By default, it is imported)
`java.util.*;`	Utility Operations
`java.sql.*;`	Database operations
`java.net.*;`	Networking operations
`java.io.*;`	File related operations
`java.awt.*;`	GUI operations

Extended Packages

`javax.sql.*;`	Database
`javax.servlets.*;`	Servlets

Creating Packages

- A *package* allows logical grouping of classes

```
package myPackage;
public class MyClass {
   MyClass()
   {
   }
}
```

- Strict file & directory naming conventions and organization

- All classes put into a package must reside in a directory with that package name

- Package name is strictly specified at the beginning of the java code

Class Member Access

Access Rights for different Elements

Class \ Has access to	Private Elements	Default Elements (*no modifier*)	Protected Elements	Public Elements
`own class (`**Base**`)`	yes	yes	yes	yes
`subclass - same package (`**SubA**`)`	no	yes	yes	yes
`class - same package (`**AnotherA**`)`	no	yes	yes	yes
`subclass - another package (`**SubB**`)`	no	no	yes	yes
`class - another package (`**AnotherB**`)`	no	no	no	yes

Working with CLASSPATH

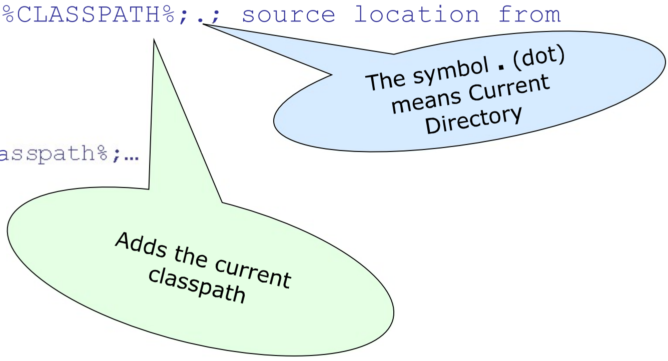
- An environment variable which tells the JVM and java compiler where to look for class files

- Class files are searched in the directories specified in the class path in the order specified

- `set CLASSPATH=%CLASSPATH%;.; source location from root folder;`

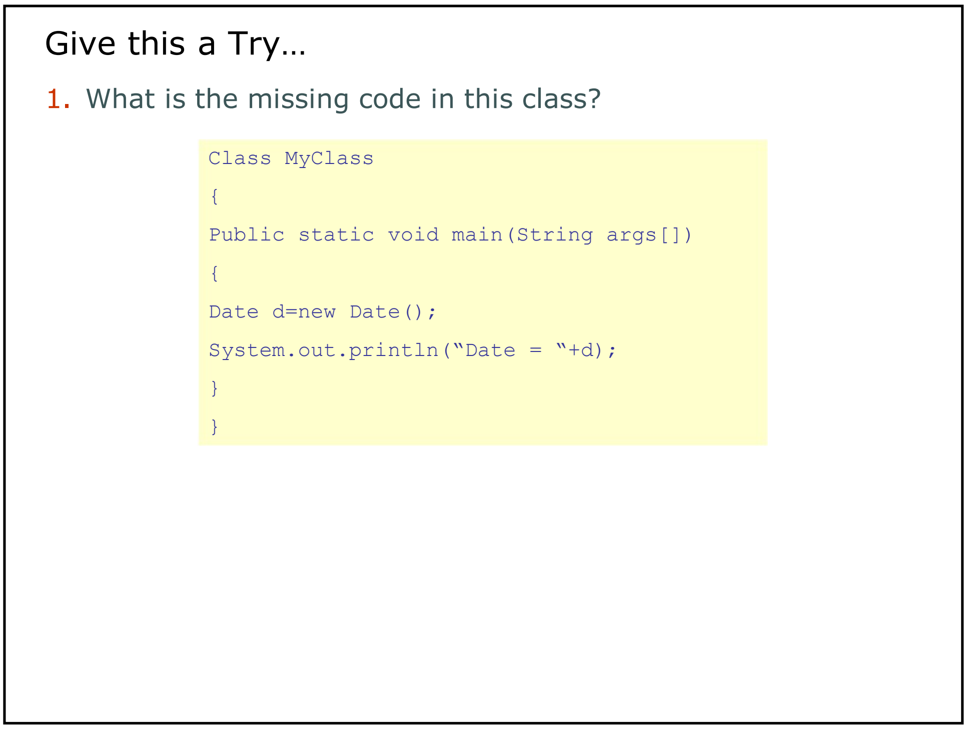
Example:

`set CLASSPATH=%classpath%;…`



The symbol . (dot) means Current Directory

Adds the current classpath



Give this a Try…

1. What is the missing code in this class?

```
Class MyClass
{
Public static void main(String args[])
{
Date d=new Date();
System.out.println(“Date = “+d);
}
}
```

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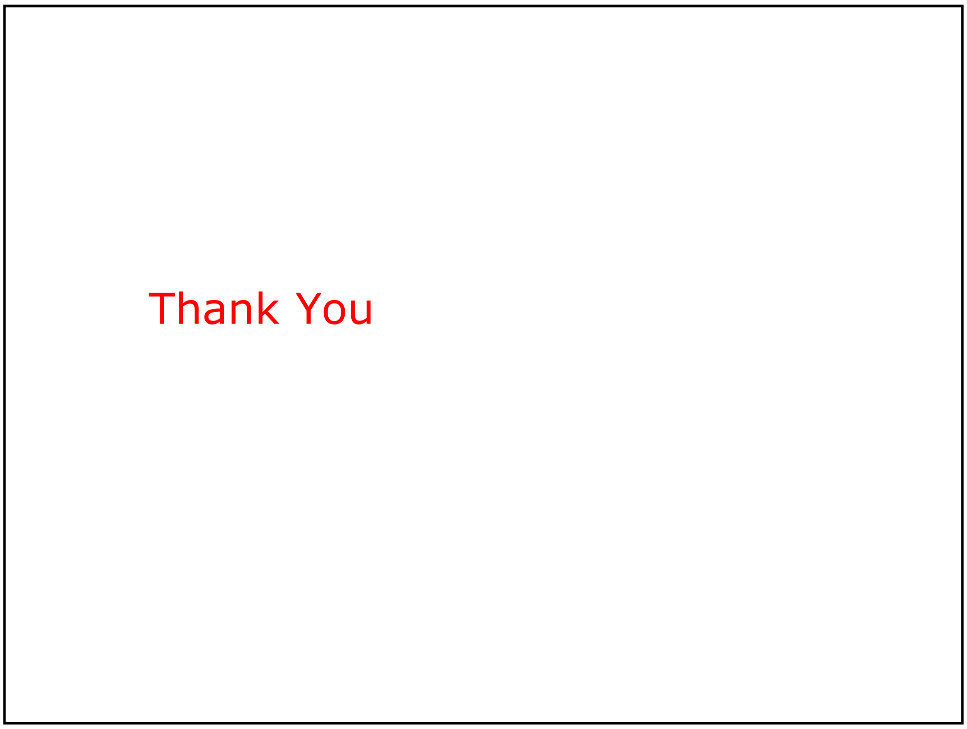

Thank You

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