Vývoj Aplikácií s Viacvrstvovou Architektúrou

07. NIO.2 (IO)

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Čo nás čaká a neminie...

1. časť

- Úvod do Javy
- Štruktúra platformy
- Vývojové technológie
- Kolekcie
- Logovanie
- Lokalizácia

2. časť

- NIO.2, IO, XML
- Regulárne výrazy
- Modularita
- JDBC
- Bezpečnosť
- Prehľad JEE a .NET

Best practices | Faily | Fuckupy

3

	Java Language						
Java Language	Java Language						

Tools & Tool APIs	java	javac	javadoc	jar	javap	jdeps	Scripting
	Security	Monitoring	JConsole	VisualVM	JMC	JFR	
	JPDA	JVM TI	IDL	RMI	Java DB	Deployment	
	Internationalization		Web Services		Troubleshooting		

Deployment	Java Web Start	Applet / Java Plug-in

	JavaFX
User Interface Toolkits	

User Interface Toolkits	Swing	Java 2D	AWT	Accessibility
	Drag and Drop	Input Methods	Image I/O	Print Service / Sound

Integration Libraries	IDL	JDBC	JNDI	RMI	RMI-IIOP / Scripting

Other Base Libraries	Beans	Security	Serialization	Extension Mechanism
	JMX	XML JAXP	Networking	Override Mechanism
	JNI	Date and Time	Input/Output	Internationalization

	lang and util
lang and util Base Libraries	

lang and util Base Libraries	Math	Collections	Ref Objects	Regular Expressions	
	Logging	Management	Instrumentation	Concurrency Utilities	
	Reflection	Versioning	Preferences API	JAR	Zip

Java Virtual Machine	Java HotSpot Client and Server VM

JDK · JRE · Compact Profiles · Java SE API

Čo je NIO.2?

Non-blocking Input/Output API

- **java.nio version 2 API**
- Dokáže toho podstatne viac ako original java.io API
- **Interakcia** so **súbormi** a **adresármi**
- **Zložité operácie** so **súbormi** a **adresármi**
- Práca s atribútmi súborov
- **Intuitívnejšie API** s **bohatšími funkciami** na prácu so súbormi a adresármi
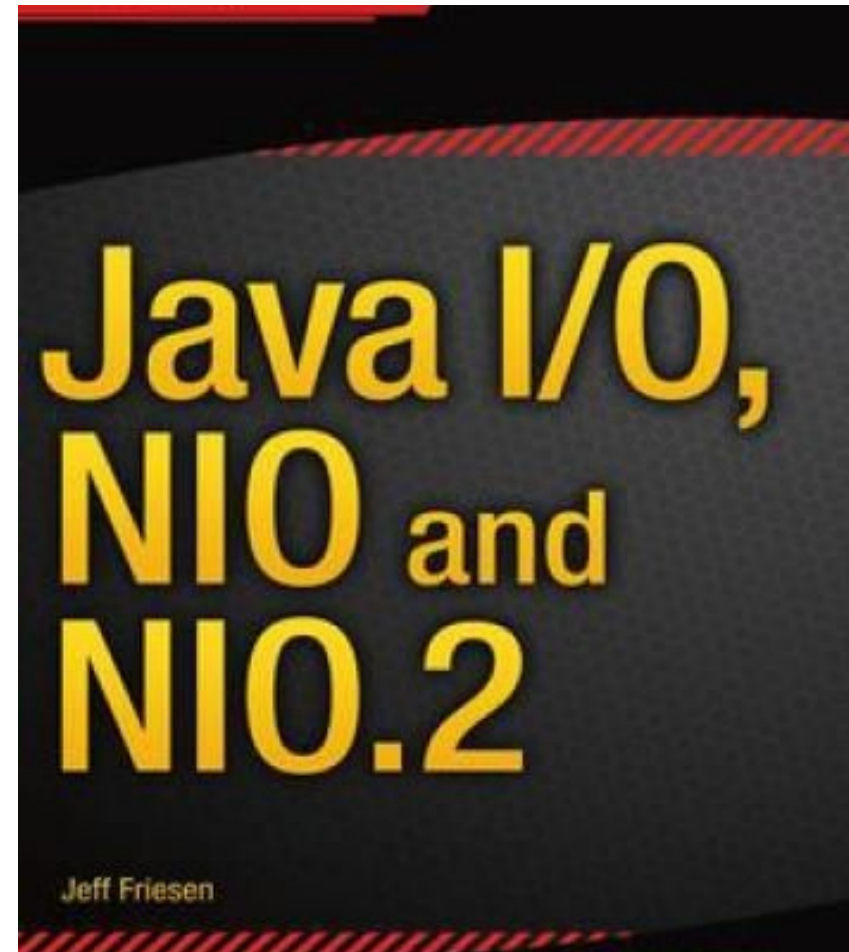
New I/O

Rozhranie Path

- **Inštancia Path** predstavuje **hierarchickú cestu** v úložnom systéme k **súboru** alebo **adresáru**

- Path si môžete predstaviť ako **náhradu** NIO.2 **za triedu java.io.File**, aj keď **spôsob**, akým ju **používame**, je **trochu odlišný**

- **Objekty java.io.File** aj **Path** môžu **odkazovať** na **absolútnu cestu** alebo **relatívnu cestu** v rámci systému súborov.

- Oba **môžu** oba **odkazovať** na **súbor** alebo **adresár**

- Na rozdiel od triedy java.io.File, rozhranie Path **obsahuje podporu pre symbolické odkazy**

New I/O
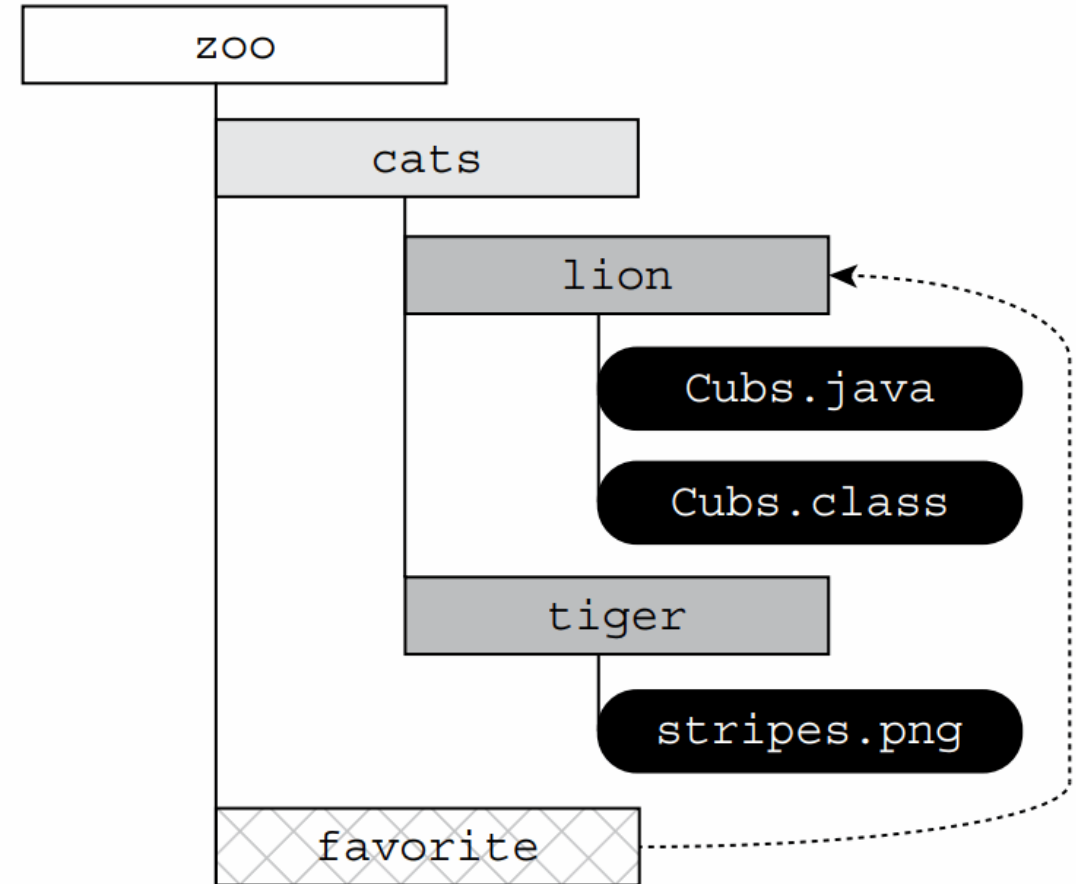
Prečo je Path rozhranie?

- Keďže Path je rozhranie, **nemôžeme vytvoriť inštanciu priamo**

- Rozhrania nemajú konštruktory

- Keď je vytvorená cesta, **JVM** vráti **implementáciu špecifickú** pre **súborový systém**, ako napríklad Windows alebo Unix Path triedu

- V drvivej väčšine okolností **chceme na Path vykonávať rovnaké operácie bez ohľadu na súborový systém**

- Poskytnutím Path ako rozhrania pomocou **továrenského vzoru** sa **vyhneme nutnosti písať zložitý** alebo **vlastný kód** pre **každý typ súborového systému**

File Systems, Paths, Files

In NIO.2, both files and directories are represented by a path, which is the relative or absolute location of the file or directory.

root node:
/ (Solaris)
C:\ (Windows)

labs

Documents and Settings

Admin

student

finance.xls

logfile.txt
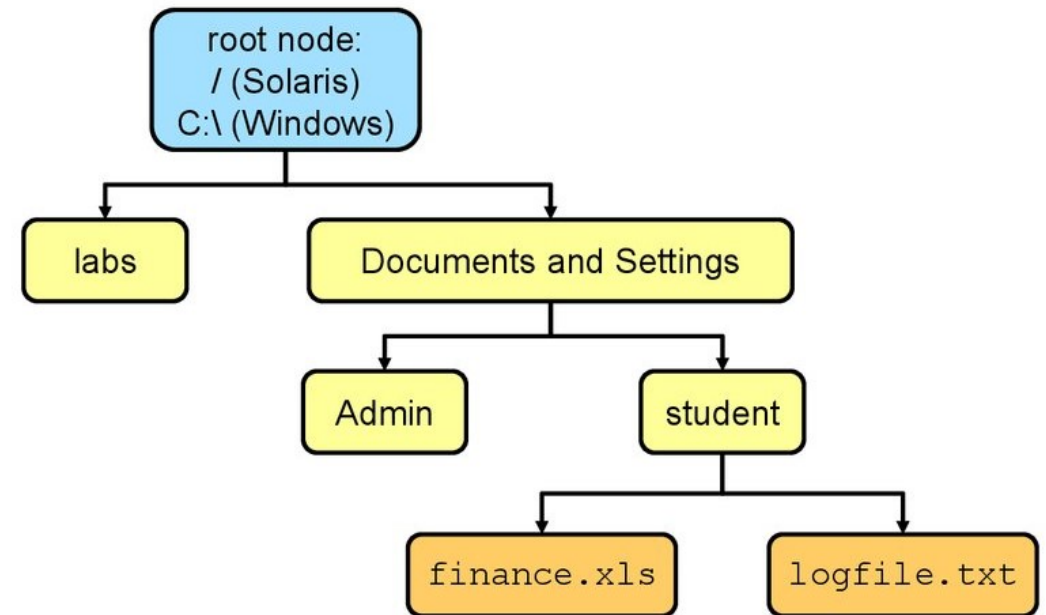
Factory

Porovnanie java.io.File and NIO.2 metód

- V NIO.2 je k dispozícii množstvo metód a funkcií, ktoré nie sú dostupné v staršom rozhraní API, ako napríklad podpora pre symbolické odkazy, nastavenie atribútov špecifických pre súborový systém atď.

- NIO.2 je vyvinutejšie, oveľa výkonnejšie API ako staršia trieda java.io.File

Legacy I/O *File* method	NIO.2 method
file.delete()	Files.delete(path)
file.exists()	Files.exists(path)
file.getAbsolutePath()	path.toAbsolutePath()
file.getName()	path.getFileName()
file.getParent()	path.getParent()
file.isDirectory()	Files.isDirectory(path)
file.isFile()	Files.isRegularFile(path)
file.lastModified()	Files.getLastModifiedTime(path)
file.length()	Files.size(path)
file.listFiles()	Files.list(path)
file.mkdir()	Files.createDirectory(path)
file.mkdirs()	Files.createDirectories(path)
file.renameTo(otherFile)	Files.move(path,otherPath)

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🧩 **Design Patterns**

What is a Pattern

Catalog

   Creational Patterns

→ Factory Method

    Abstract Factory

    Builder

    Prototype

    Singleton

   Structural Patterns

   Behavioral Patterns

Code Examples

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🏠 / Design Patterns / Creational Patterns

Factory Method

Also known as: Virtual Constructor

💬 Intent

Factory Method is a creational design pattern that provides an interface for creating objects in a superclass, but allows subclasses to alter the type of objects that will be created.

Dive Into
DESIGN
PATTERNS

Alexander Shvets
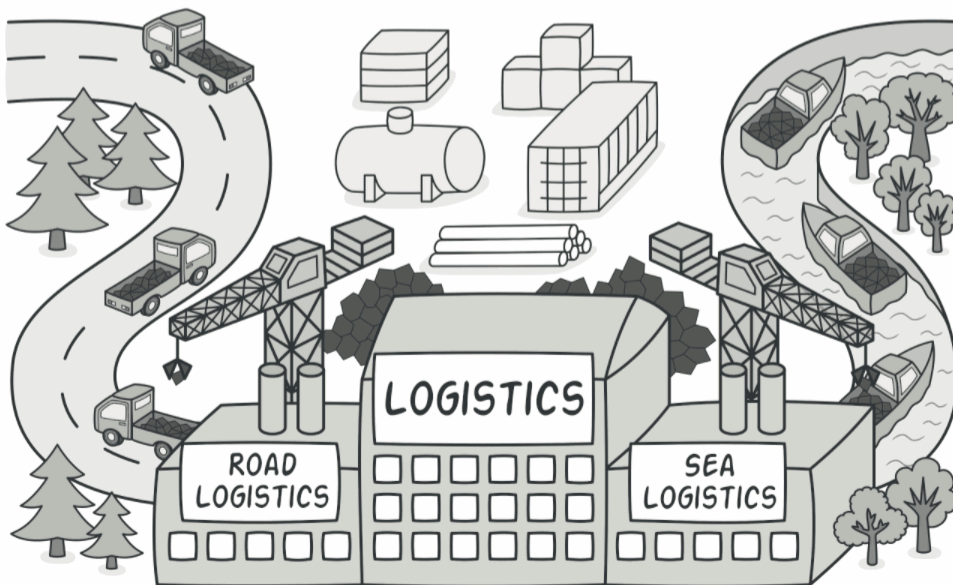
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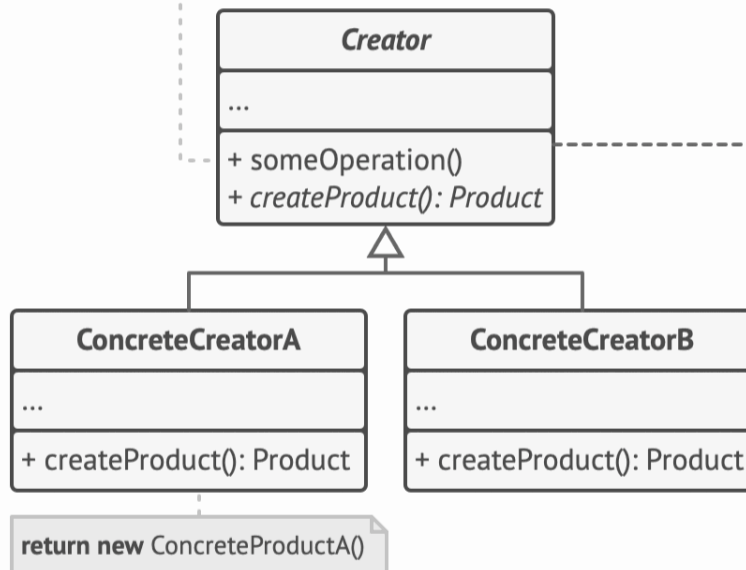
🧩 **Design Patterns**

🗂 Structure

3 The **Creator** class declares the factory method that returns new product objects. It's important that the return type of this method matches the product interface.

You can declare the factory method as abstract to force all subclasses to implement their own versions of the method. As an alternative, the base factory method can return some default product type.

Note, despite its name, product creation is **not** the primary responsibility of the creator. Usually, the creator class already has some core business logic related to products. The factory method helps to decouple this logic from the concrete product classes. Here is an analogy: a large software development company can have a training department for programmers. However, the primary function of the company as a whole is still writing code, not producing programmers.
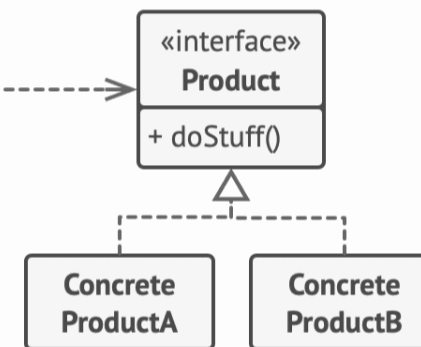
1 The **Product** declares the interface, which is common to all objects that can be produced by the creator and its subclasses.

```
Product p = createProduct()
p.doStuff()
```

Creator

...

+ someOperation()
+ createProduct(): Product

«interface»
Product

+ doStuff()

ConcreteCreatorA

...

+ createProduct(): Product

ConcreteCreatorB

...

+ createProduct(): Product

Concrete
ProductA

Concrete
ProductB

```
return new ConcreteProductA()
```

2 **Concrete Products** are different implementations of the product interface.

4 **Concrete Creators** override the base factory method so it returns a different type of product.

Note that the factory method doesn't have to **create** new instances all the time. It can also return existing objects from a cache, an object pool, or another source.

muCommander

The easy to use file manager

muCommander is an open source, dual-pane file manager available on all major operating systems

Features

- Copy, move, rename and batch rename, email files

- Multiple tabs

- Universal bookmarks

- Credentials manager

- Configurable keyboard shortcuts

- Cloud storage Dropbox, Google Drive

- Virtual filesystem with support for local volumes, FTP, SFTP, SMB, NFS, HTTP, Amazon S3, Hadoop HDFS and Bonjour

- Archives ZIP, RAR, 7z, TAR, GZip, BZip2, ISO/NRG, AR/Deb, LST

- Checksum calculation

- Fully customizable user interface, configurable toolbars and themes
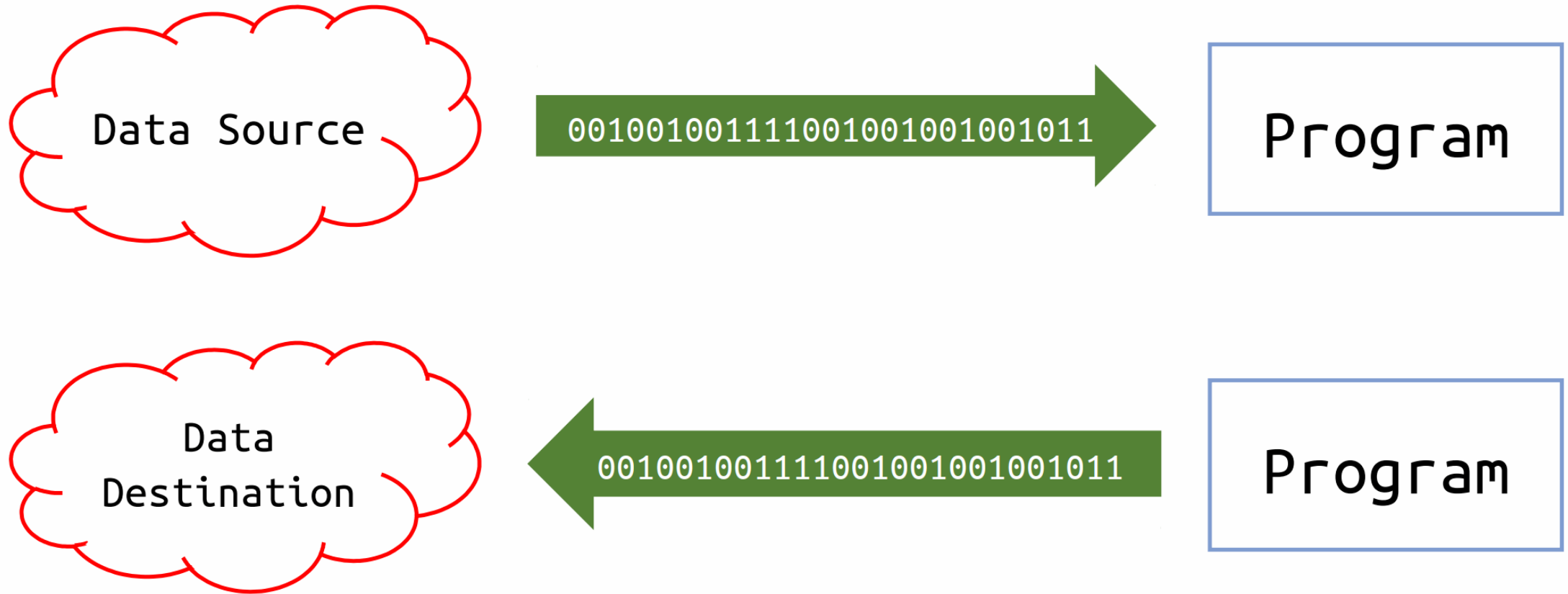
- Available in many languages

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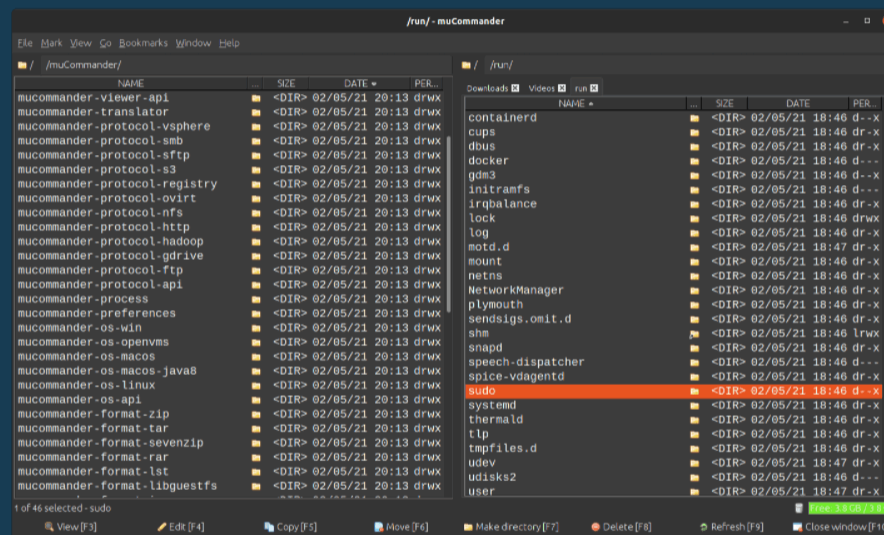
Java IO vs NIO

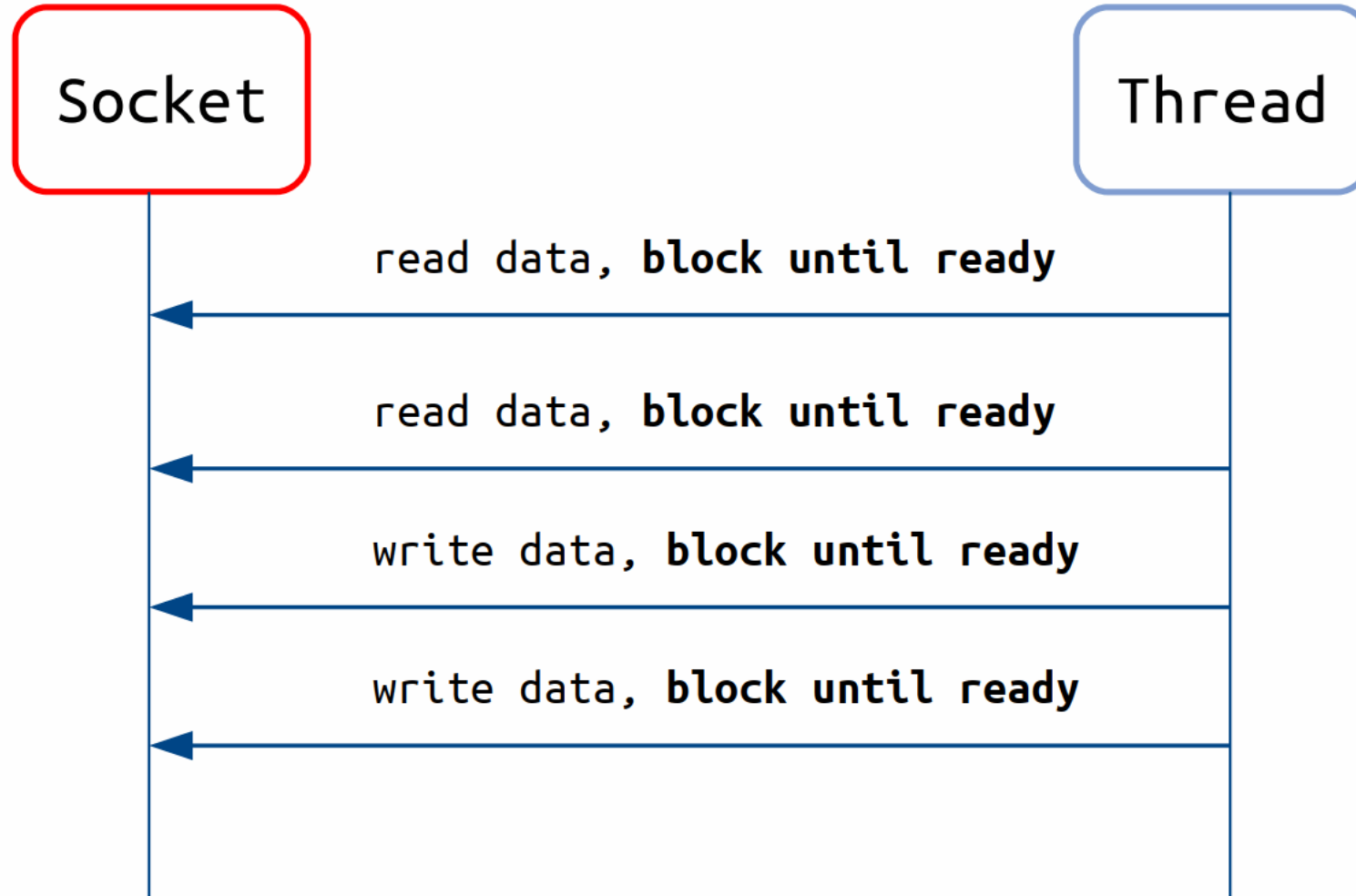| IO	NIO/NIO.2

IO

- Stream-oriented
- Blocking I/O

NIO/NIO.2

- Buffer-oriented
- Non-blocking I/O
- Selectors
- Channels

Java IO

Data Source → `001001001111001001001001011` → Program

Data Destination ← `001001001111001001001001011` ← Program

Java.IO - Blocking I/O

Java.IO - Classic IO server design
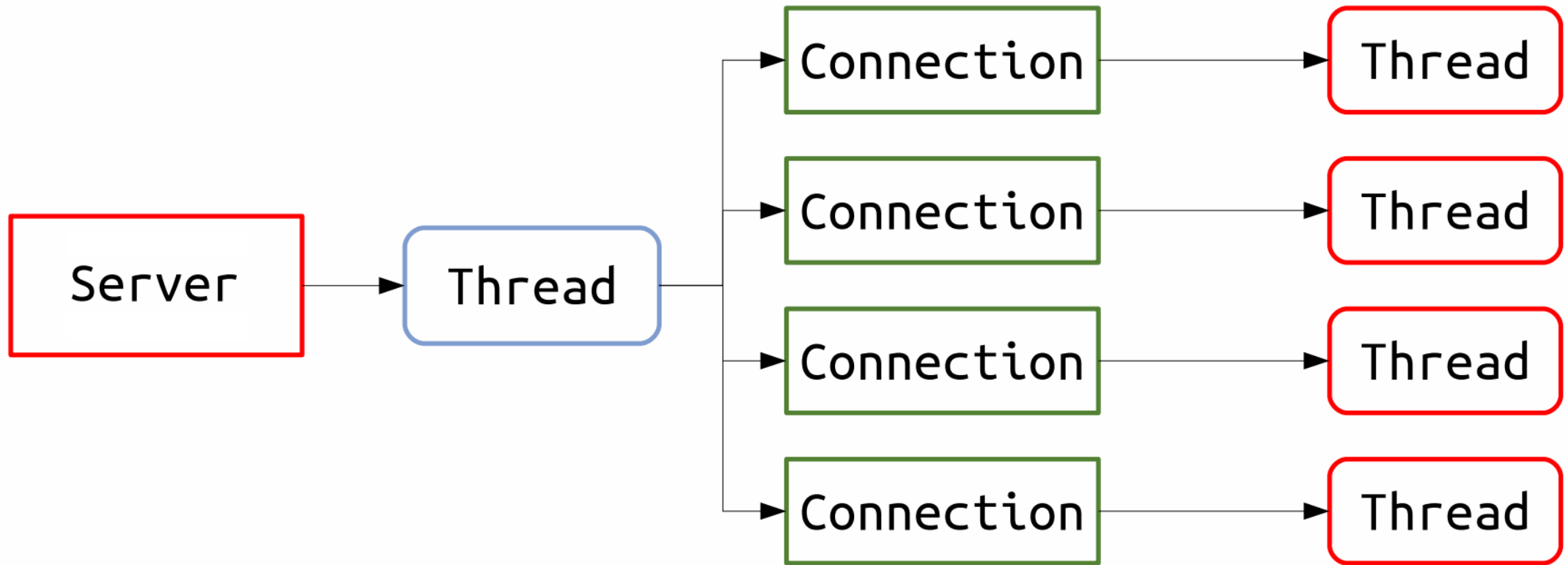
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Oracle a O'Reilly

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Miroslav **Domov** **Vytvoriť**

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👥 UK Manazment Externe...

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👥 Vytvoriť novú skupinu

ĎALŠIE KONTAKTY (82)

🔍 Hľadať ⚙️ 📝 👥

```
52    </div>
63    </body>
64    <script type="text/javascript">
65    <!--
166   var currentImage = "bigImage1";
167   var pages = Math.ceil(photos.length / 9);
168   updatePages();
169   updateAllImages();
170   // document.getElementById('bigImage0').src = 'images/wieksze/' + photos[page'*9];
171   // document.getElementById('bigImage0').style.display = '';
172   changePhotoDescription( '1' );
173
```
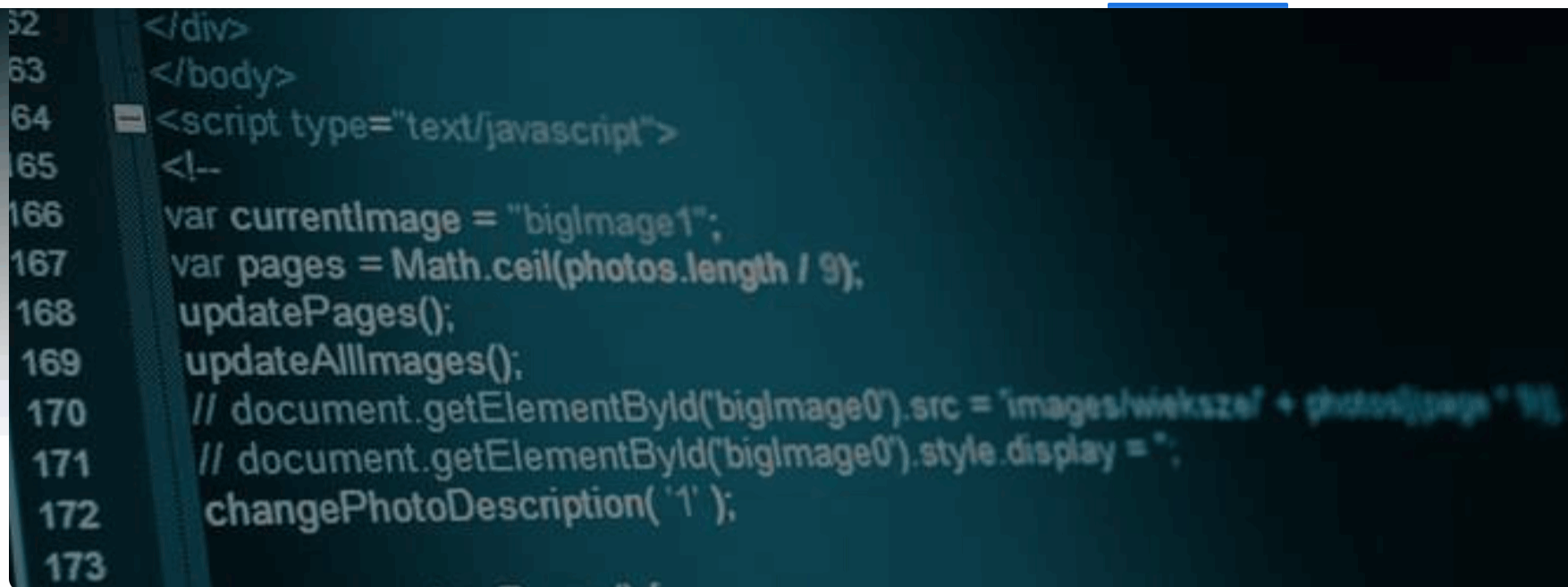
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🔍 java

Popular   Name   New

java

Java is a high-level object oriented programming language. Use this tag when you're having problems using or understanding the language itself. Thi...

1827413 questions   419 asked today, 2408 this week

javascript

For questions regarding programming in ECMAScript (JavaScript/JS) and its various dialects/implementations (excluding ActionScript). Note...

2335556 questions   779 asked today, 4877 this week

javafx

The JavaFX platform enables developers to create and deploy Graphical User Interface (GUI) applications that behave consistently...

36355 questions   6 asked today, 50 this week

java-8

for questions specific to Java 8 which is version 8 (internal number 1.8) of the Java platform, released on 18 March 2014. In most cases, you should also...

22076 questions   9 asked today, 40 this week

java-stream

for questions related to the use of the Stream API. It was introduced in Java 8 and supports functional-style operations on streams of values, such...

10293 questions   5 asked today, 26 this week

java-native-interface

The Java Native Interface (JNI) gives both the ability for JVM implementations to run system native code and the ability for native code t...

9404 questions   12 asked this week, 38 this month

rx-java

RxJava – Reactive Extensions for the JVM – a library for composing asynchronous and event-based programs using observable sequence...

6796 questions   6 asked this week, 27 this month

javascript-objects

for questions related to JavaScript objects.

6151 questions   20 asked this week, 118 this month

java.util.scanner

A simple text scanner in the JDK which can parse primitive types and strings using regular expressions.

javafx-8

JavaFX 8 (previously named JavaFX 3) introduces a new API for JavaFX technology. JavaFX 8 supports 3D and brings up a Retina-Display Support. It ...

java-me

Java Platform, Micro Edition, or Java ME, is a Java platform designed for embedded systems.

facebook-javascript-sdk

Facebook's JavaScript SDK provides a rich set of client-side functionality for accessing Facebook's server-side API calls. It can collaborate with any SDK...

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