

1. Introduction to Java Language

2. Java SDK & IDE

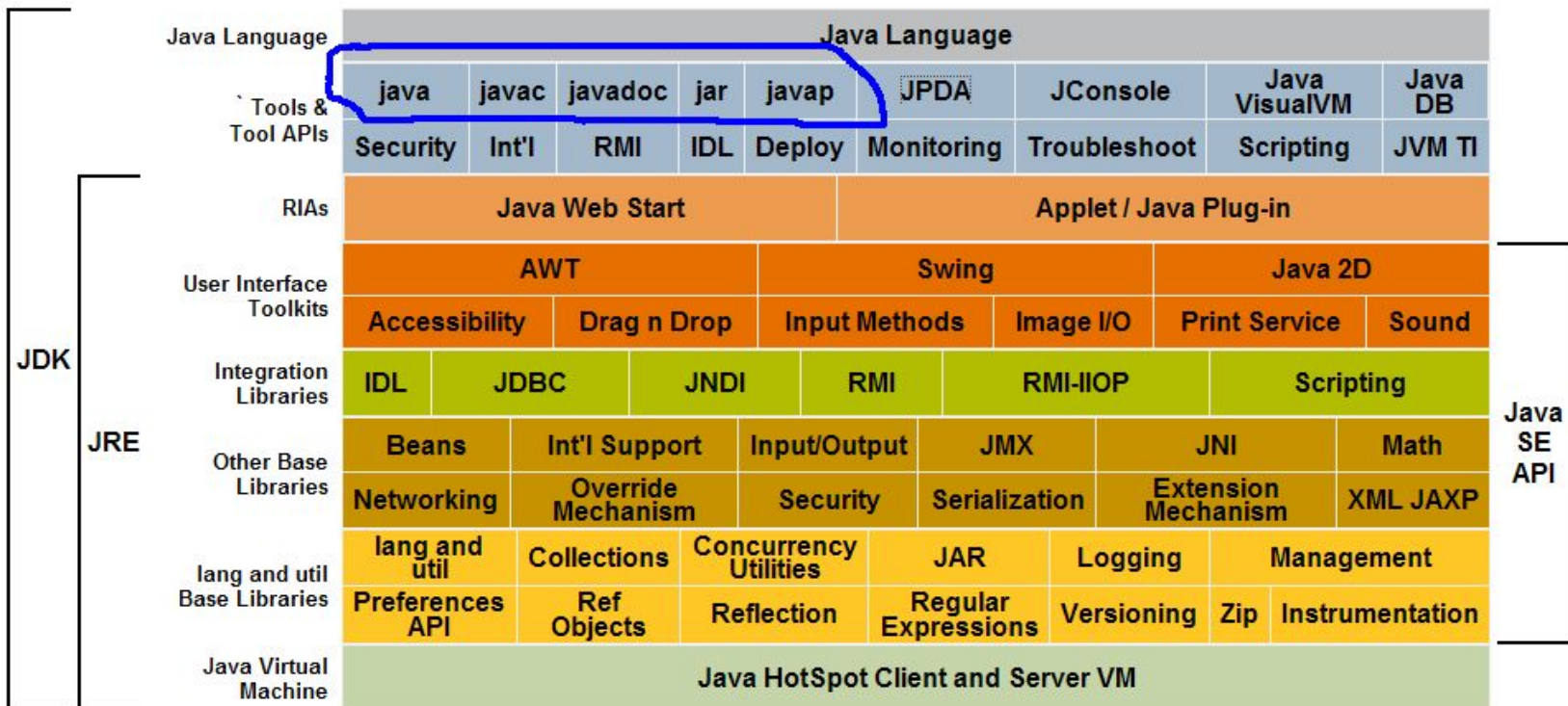
SDK

- A software development kit (**SDK**) is typically a set of software development tools that allows the creation of applications for a certain software package, software framework, hardware platform, operating system, etc.
- The Java Development Kit (**JDK**) is an Oracle Corporation product aimed at Java developers.

JDK contents

- **java** – the loader for Java applications.
- **javac** – the compiler, which converts source code into Java bytecode
- **javadoc** – the documentation generator
- **jar** – the archiver, which packages related class libraries into a single JAR file
- **javap** – the class file disassembler
- **jdb** – the debugger

JDK manuals



How to Use JDK

- **Create** NAME.java file with help of some text editor (e.g. notepad)
- **Compile** this file with help of javac:

```
javac NAME.java
```

NAME.class file with bytecode will be created
- **Execute** program with help of java:

```
java NAME
```

Don't use file extension in the previous command!!!

Recommendation

Don't use JDK directly!

IDE

- An integrated development environment (**IDE**) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of:
 - a source code editor
 - build automation tools
 - a debugger

Java IDE

Free

- NetBeans
- Eclipse
- IntelliJ IDEA
- Geany
- Greenfoot

Commercial

- IntelliJ IDEA
- JBuilder
- MyEclipse
- JCreator

Eclipse

- **Eclipse** is a multi-language software development environment comprising an IDE and an extensible plug-in system. It is written mostly in Java.
- It can be used to develop applications in Java and, by means of various plug-ins, other programming languages including C++, Perl, PHP and so on. It can also be used to develop packages for the software Mathematica.

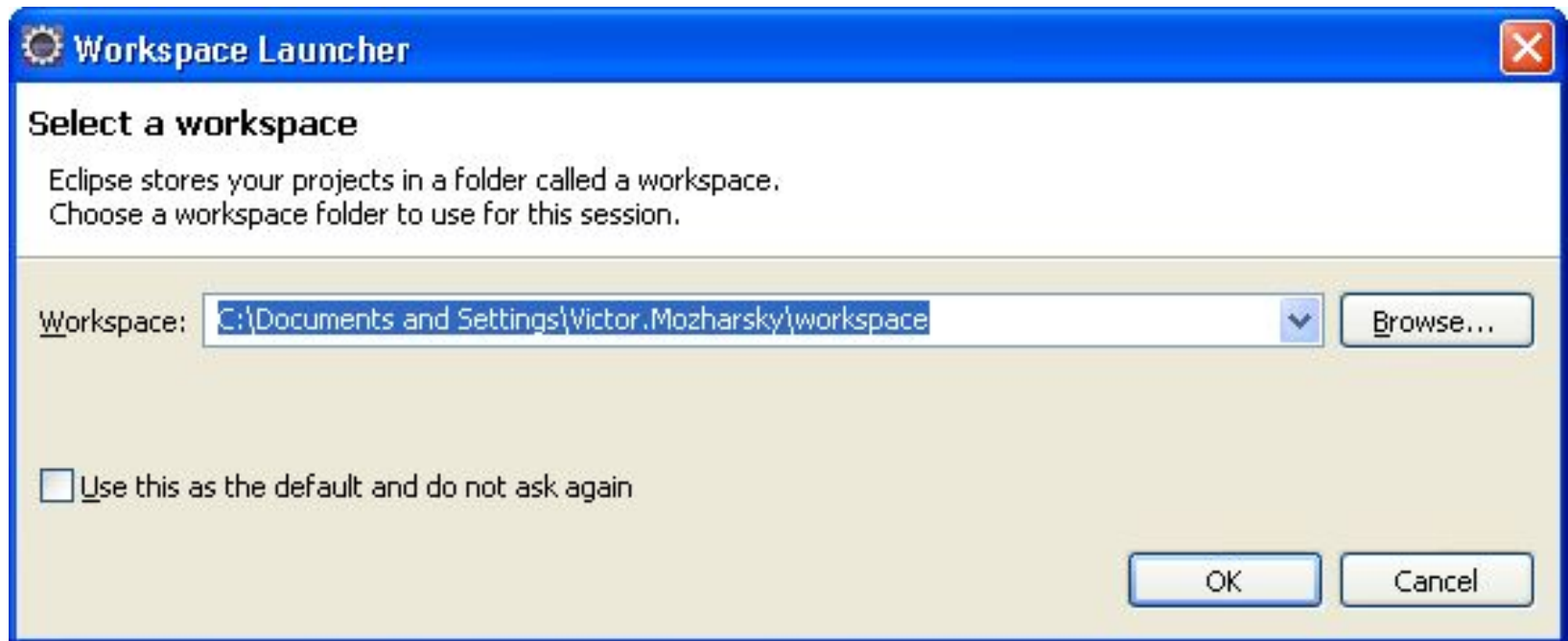
Eclipse Resources

- <http://www.eclipse.org/> - Eclipse Foundation's website
- <http://www.eclipse.org/downloads/><http://www.eclipse.org/downloads/> - Last Eclipse versions – Luna ([Eclipse IDE for Java EE Developers](http://www.eclipse.org/downloads/))
- <http://help.eclipse.org/luna/index.jsp> - Eclipse Luna Manual

Eclipse Installation

- eclipse-jee-luna-SR1a-win32-x86_64.zip
- Open *eclipse.ini* file and add the following (**use WordPad**):
 - vm
 - C:\Program Files\Java\jdk1.8.0\jre\bin\javaw.exe
 - Dfile.encoding=UTF-8
- Start *eclipse.exe*

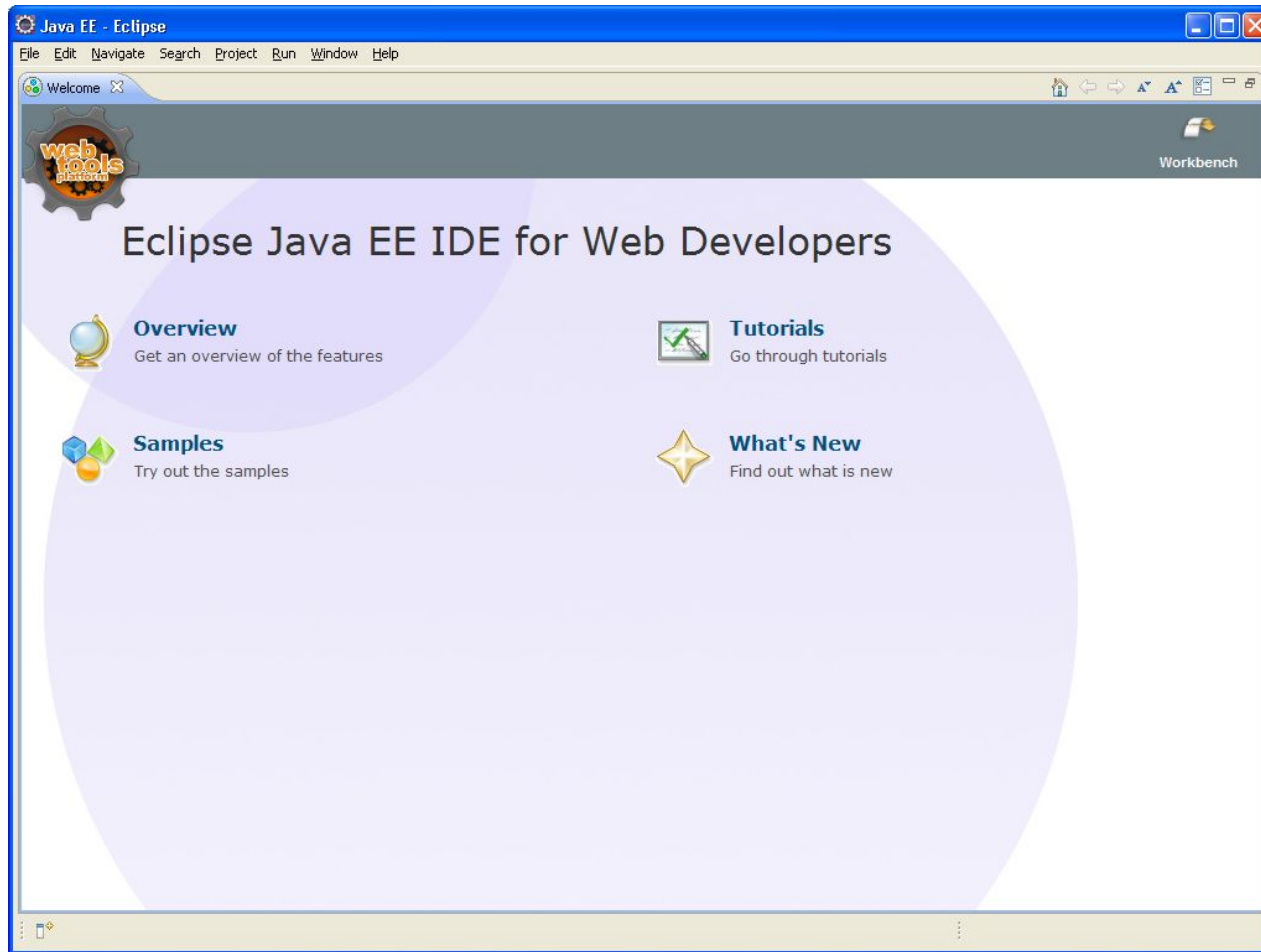
Eclipse Workspace Launcher



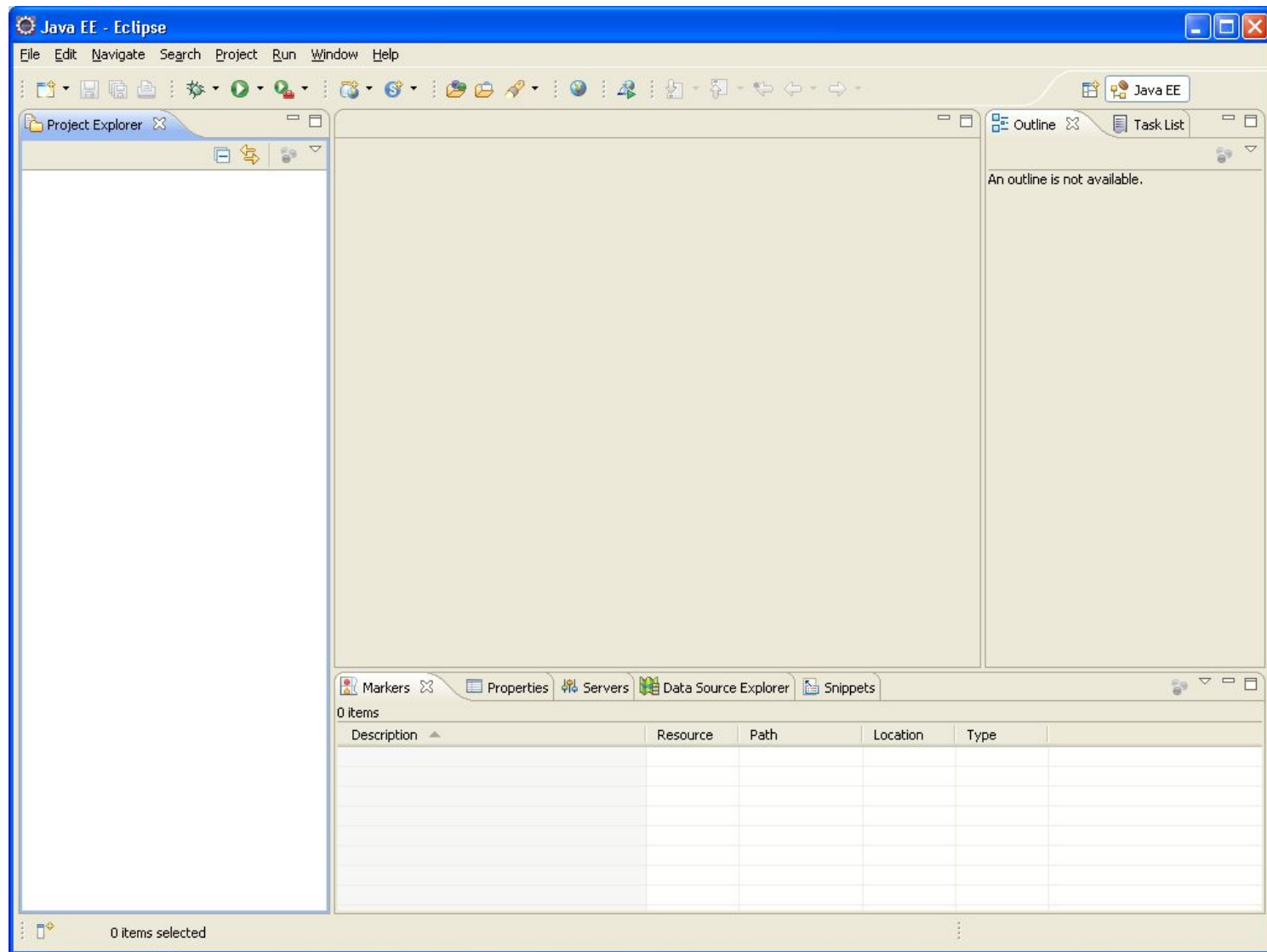
Eclipse Workspace

- The workspace contains a collection of resources: projects, folders, and files.
- A workspace can have any number of projects, each of which can be stored in a different location in some file system.
- Use Combo box or “Browse” button in Workspace Launcher to choose a workspace

Eclipse Welcome Page



Java EE Perspective



Open Java Perspective

- Select menu item Window / Open Perspective / Java
- Close Java EE perspective (right click / Close)

Create Project

- Select menu item File / New / Java Project
- Enter project name (e.g. Hello)
- Click “Finish” button

Create Package

- Select project in Package Explorer
- Click “New Java Package” button
- Enter package name (first letter in lower case)
- Click “Finish” button.

Create Class

- Select package in Package Explorer
- Click “New Java Class” button
- Enter class name (first letter in upper case)
- Check “public static void main(String[] args)” if necessary
- Click “Finish” button.

Code Editing

- Change **// TODO Auto-generated method stub** string to `System.out.println("Здравствуй, мур!");`;
- Click “Save” button
- Check “Problems” tab

Run Application

- Click “Run” button
- Check output in the Console tab.

- See [12Hello project](#) for the full text

How to Use Project Examples

- Download and unzip file with project example
- Open Eclipse and select workspace
- Select menu item File -> Import...
- Select an import source: General -> Existing Projects into Workspace and click Next
- Click Browse, select folder with project example, click Ok then Finish
- Enjoy project example