Eclipse: Introduction

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eclipse

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What is Eclipse?

- an Integrated Development Environment (IDE)

 provides tools for coding, building, running and
 debugging applications
- designed for Java, now supports many other languages
 good support for C, C++, Python, PHP, Ruby, etc...
- Eclipse can be downloaded from:
 - <u>http://www.eclipse.org/downloads/packages/</u>
- grab "Eclipse IDE for Java Developers": Eclipse comes bundled as a zip file (Windows) or a tarball (all other operating systems)

Eclipse How-To

- where are my files
- creating a new project
- set project's properties
- run configurations
- debugging

Where are my files?

- when launching Eclipse you need to choose the workspace
- the workspace identifies the root folder where all your projects will be saved

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| | • • | | | | Workspac | e Launcher | | | | | | × |
| | Select a wo | orksp | ace | | | | | | | | | |
| C | Eclipse store Choose a wo | | | | | | e. | | | | | |
| S 1 | Workspace: | /hom | ne/alema | re/works | bace | | | | ~ | E | Browse | |
| 1 | Use this | ; as th | e default | and do n | ot ask agai | 'n | | Cancel | | | ОК | |

Creating a New Project (I)

all code in Eclipse needs to live under a project
to create a project: File->New->Java->Project

| 🖨 Java - Eclipse P | latform | | | | | _ 🗆 🛛 |
|-----------------------------|---------------------|-----------------------|-----------|------------------|------|------------------------------|
| File Edit Source Re | efactor Navigate Se | earch Project Run Wir | ndow Help | | | |
| New | Alt+Shift+N | 🕨 / Java Project | | 1:如 - 祠 - や () - | | 😭 🐉 Java |
| Open File | | 🃬 Project | | | - 8) | |
| Close | Ctrl+W | 🖶 Package | | | | |
| Close All | Ctrl+Shift+W | Class | | | | 📫 😚 🔚 🕈 🏷 |
|] Save | Ctrl+S | 1 Interface | | | | Find: |
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| ੇ Save All | Ctrl+Shift+S | Annotation | | | | - oncoregonica |
| Revert | | Source Folder | | | | |
| Move | | ava Working Set | | | | |
| Rename | F2 | Folder | | | | |
| Refresh | F5 | 📑 File | | | | |
| Convert Line Delimi | ters To | Untitled Text File | | | | |
| 🖹 Print | Ctrl+P | 📑 JUnit Test Case | | | | |
| Print | Cultt | 📫 Task | | | | 🗄 Outline 🛛 👘 🗖 |
| Switch Workspace Restart | I | Example | | | | |
| Import | | 📑 Other | Ctrl+N | | | An outline is not available. |
| Export | | | | | | |
| Properties | Alt+Enter | | | | | |
| Exit | | | | | | |
| | | _ | | | | |

Creating a New Project (II)

- 1. enter a name for the project, then click Finish
- 2. the newly created project should then appear under the Package Explorer
- 3. verify that a new folder has been created in your workspace folder

| 🛢 Java - Eclipse Platform | × |
|---|-----------------|
| Elle Edit Source Refactor Navigate Search Project Run Window Help | |
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| Herarchy | Task List 🛛 🗆 🗆 |
| | 📫 🚳 🗄 🔹 🎽 |
| 🗑 📂 helo-world | Find: |
| | 🕞 Uncategorized |
| | |

| New Java Project | (1) | | | | | |
|--|---------------------------|-------------------|--|--|--|--|
| Create a Java Project Create a Java project in the workspace or in an external lo | | | | | | |
| | | | | | | |
| Project name: hello-world | | | | | | |
| Contents | | | | | | |
| Create new project in <u>w</u> orkspace | | | | | | |
| Create project from existing source | | | | | | |
| Directory: C:\Documents and Settings | Dan\workspace\hello-world | Browse | | | | |
| JRE | | | | | | |
| • Use default JRE (Currently 'jre1.6.0 | 05') | Configure JREs | | | | |
| ○ Use a project specific JRE: | jre1.6.0_05 | <u>~</u> | | | | |
| O Use an execution environment JRE: | JavaSE-1.6 | <u>~</u> | | | | |
| Project layout Use project folder as root for sources Oreate separate folders for sources Working sets Add project to working sets | | Configure default | | | | |
| Working sets; | | Select | | | | |
| | | | | | | |
| ? | <u>N</u> ext > <u>F</u> i | nish Cancel | | | | |

Project's properties

- find under Project -> Properties
- to add third-party libraries
- to set the correct Java library

| ype filter text 🛛 🗵 | Java Build Path | ← ▼ ⇒ ▼ |
|---|--|---------------------------|
| Resource Builders Java Build Path | Source Projects Libraries Order and Exp JARs and class folders on the build path: | port |
| Java Code Style | • djep-1.0.0.jar - p2p_example/lib | Add JARs |
| Java Compiler Java Editor | image: pep-2.3.0.jar - p2p_example/lib image: peersim-1.0.5.jar - p2p_example/lib | Add External JARs |
| Javadoc Location | JRE System Library [java-7-openjdk-amd64] | Add Variable |
| Project References Refactoring History | | Add Library |
| Run/Debug Settings | | Add Class Folder |
| Task Repository Task Tags | | Add External Class Folder |
| Validation WikiText | | Edit |
| WINIEAL | | Remove |
| | | Migrate JAR File |

Run configuration (I)

 advanced options for executing a program can be found by right clicking the class then clicking Run As -> Run Configurations

| 🚔 Java - hello-world/src/edu/umbc/dhood2/HelloWorld.java - Eclipse Platform 📃 🗖 🔀 | | | | | | | |
|---|-----------------------|--|--|--|--|--|--|
| File Edit Source Refactor Navigate Search Proje | ct Run Window Help | | | | | | |
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| B hello-world for the second s | public class HelloWor | rld (Find: ► All ► | | | | | |
| edu.umbc.dhood2 | | Ct Uncategorized | | | | | |
| HeloWorld.ja | j /** • | | | | | | |
| IRE System Library [] Open | F3 | | | | | | |
| Open With | • | 1 main(String[] args) { | | | | | |
| Open Type Hierard | hy F4 | ntln("Hello World!"); | | | | | |
| Show In | Alt+Shift+W | | | | | | |
| Сору | Ctrl+C | | | | | | |
| E Copy Qualified Nam | ne - | 🗄 Outline 🛛 🦳 🗖 | | | | | |
| 💼 Paste | Ctrl+V | | | | | | |
| 💢 Delete | Delete | edu.umbc.dhood2 | | | | | |
| | | □ ⊕ _▶ HelloWorld | | | | | |
| Build Path | • | . • • • • • • • • • • • • • • • • • • • | | | | | |
| Source | Alt+Shift+S | | | | | | |
| Refactor | Alt+Shift+T | - | | | | | |
| 🚵 Import | | | | | | | |
| Export | | | | | | | |
| References | • | | | | | | |
| Declarations | • | | | | | | |
| 🖑 Refresh | F5 | on 🗳 Console 🛛 🛛 📄 🗰 🙀 🖓 🚱 🥙 ピ 🖓 📬 🗖 | | | | | |
| Assign Working Set | s | n] C: \Program Files\Java\jre1.6.0_05\bin\javaw.exe (Aug 23, 2008 11:08:17 PM) | | | | | |
| Run As | • | 1 Java Application Alt+Shift+X, J | | | | | |
| Debug As | , | Run Configurations | | | | | |
| Validate Team | , | | | | | | |
| Compare With | • | | | | | | |
| Replace With | • | × × | | | | | |
| Restore from Local | History | | | | | | |
| edu.umbc.dhood2.# Properties | Alt+Enter | | | | | | |

Run configuration (II)

| Create, manage, and run con Run a Java application | figurations | |
|---|--|---|
| Image: Second | Name: [p2p_example G Main Or Arguments M JRE % Classpath % Source % Project: [p2p_example Main class: [peersim.Simulator] Include system librarities in rearching for a main class] Include inherited mains when searching for a main class] Stop in main | Environment) Common Browse Search |
| Filter 5 of 34 items | | Close Run |

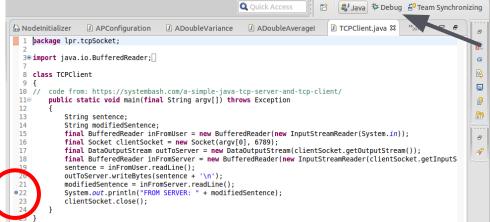
• set the main class

| | <u>N</u> ame: p2p_ex | ample | | |
|-------------------------|----------------------|---------------------------------|-----------------------------------|----------------|
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| 🗵 Java Applet | Program <u>a</u> rgu | iments: | | |
| Java Application | example.cfg | | | |
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| Iddtn generator | | | | |
| DimensionAppender | | | | |
| duckweed | | | | |
| EdgeHavingMoreThanOr | | | Var | iables |
| ExampleLauncher | | | | |
| 🗊 GeneratorNormal | Working dire | ctory: | | |
| 🗊 GiniIndex | O Default: | | | |
| 🗊 KendallTauCoefficient | Other: | \${workspace loc:p2p example/de | | |
| 🗾 lucaDini | | (themspace_techpp_etempte/a | | |
| 💴 p2p_example | | | Workspace <u>File System</u> Vari | abl <u>e</u> s |
| 🗊 ScenarioGenerator (1) | | | | |
| | | | | |
| 🗾 Test (1) | | | Apply | Revert |

- set program arguments
- set JVM arguments
- set the working directory

How to debug (I)

- breakpoints:
 - cause the thread of execution to suspend and return to the debugger
 - to set a breakpoint double-click the left margin
- open the debug perspective



How to debug (II)

- step into 🐟
- step over 👁
- watch variables

| 😣 🖻 🗊 Debug - lpr/src/lpr/tcpSocket/TCPClient.java - Eclipse | |
|---|--|
| <u>F</u> ile <u>E</u> dit <u>S</u> ource Refac <u>t</u> or <u>N</u> avigate Se <u>a</u> rch <u>P</u> roject <u>R</u> un <u>W</u> indo | w <u>H</u> elp |
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| 🏇 Debug 😫 🗏 Package Explorer 💲 Type Hierarchy 🛛 🗖 | 🕪 Variables 🕱 💁 Breakpoints 👘 🖘 🗖 🗖 |
| × 50 ▼ | Name V |
| ▼ J TCPClient [Java Application] | ▼ © argv S |
| ▼ | ▶ ▲ [0] |
| ▼ | |
| TCPClient.main(String[]) line: 15 | |
| 🎜 /usr/lib/jvm/java-7-openjdk-amd64/bin/java (17/feb/2015 15:54:30 | |
| | 127.0.0.1 |
| | |
| APConfiguration ADoubleVariance ADoubleAverage | 🖸 TCPClient.java 🎗 " 💁 🗖 📴 Outline 🎗 🗖 🗖 |
| 10 // code from: https://systembash.com/a-simple-java-tcp- | |
| 11⊖ public static void main(final String argv[]) throws | Exception |
| 13 String sentence; | |
| 14 String modifiedSentence; 215 final BufferedReader inFromUser = new BufferedRe | Ipr.tcpSocket |
| 16 final Socket clientSocket = new Socket(argv[0], | 6789) |
| 17 final DataOutputStream outToServer = new DataOut | |
| <pre>18 final BufferedReader inFromServer = new Buffered 19 sentence = inFromUser.readLine();</pre> | Reader(new inputstreamReader() |
| | |
| 🖳 Console 🛱 🖉 Tasks 🔗 Search | 🔳 🗙 🔌 📄 🗛 🖉 🕼 🛃 🗸 🗂 🗖 🗖 |

TCPClient [Java Application] /usr/lib/jvm/java-7-openjdk-amd64/bin/java (17/feb/2015 15:54:30)