Chapter number	Software required (With version)	Free/Proprietary	If proprietary, can code testing be performed using a trial version	If proprietary, then cost of the software	Download links to the software	Hardware specifications	OS required
All	Open JDK 8 or superior	Free			http://jdk.java.net/8/	Common System with 4GB RAM	Linux / MacOS / Windows
All	Maven 3.5	Free			http://maven.apache.org/download.cgi	Common System with 4GB RAM	Linux / MacOS / Windows
All	GlassFish 5	Free			http://download.oracle.com/glassfish/5.0/release/glassfish-5.0.zip	Common System with 4GB RAM	Linux / MacOS / Windows
11	Docker CE 18	Free			https://www.docker.com/community-edition	Common System with 4GB RAM	Linux / MacOS / Windows
All	Git SCM 2.16	Free			Mac: https://git-scm.com/download/mac Windows: https://git-scm.com/download/win Tar: https://www.kernel.org/pub/software/scm/git/	Common System with 4GB RAM	Linux / MacOS / Windows

Detailed installation steps (software-wise)

The steps should be listed in a way that it prepares the system environment to be able to test the codes of the book.

1. Open JDK 8
    1. Download at: http://jdk.java.net/8/
    2. For Windows distribution: execute the .exe downloaded file and follow its instructions;
    3. For MacOS distribution: execute the .dmg downloaded file and follow its instructions;
    4. For Debian and Ubuntu: on the command line type
        - sudo apt-get install openjdk-8-jdk
    5. For Fedora, Oracle Linux, Red Hat Enterprise Linux: on the command line type
        - su -c "yum install java-1.8.0-openjdk-devel"
2. Maven 3.5
    1. Steps taken from the official documentation at http://maven.apache.org/install.html
    2. The installation of Apache Maven is a simple process of extracting the archive and adding the bin folder with the mvn command to the PATH.
    3. Ensure JAVA_HOME environment variable is set and points to your

JDK installation

4. Extract distribution archive in any directory
5. Use your preferred archive extraction tool or command line:
   unzip apache-maven-3.5.3-bin.zip
   or
   tar xzvf apache-maven-3.5.3-bin.tar.gz
6. If your version is not 3.5.3, do the proper adjustments
7. Windows tips:
    1. Check environment variable
       echo %JAVA_HOME%
    2. Adding to PATH: Add the unpacked distribution's bin directory to your user PATH environment variable by opening up the system properties (WinKey + Pause), selecting the "Advanced" tab, and the "Environment Variables" button, then adding or selecting the PATH variable in the user variables with the value C:\Program Files\apache-maven-3.5.3\bin. The same dialog can be used to set JAVA_HOME to the location of your JDK
    3. Open a new command prompt (Winkey + R then type cmd) and run mvn -v to verify the installation.
8. Unix-based tips (Linux and MacOS):
    1. Check environment variable value
       echo $JAVA_HOME
    2. Adding to PATH
       export PATH=/opt/apache-maven-3.5.3/bin:$PATH

3. GlassFish 5
    1. Download
       at http://download.oracle.com/glassfish/5.0/release/glassfish-5.0.zip
    2. Use your preferred archive extraction tool or command line:
       unzip glassfish-5.0.zip
    3. For this book, we will only use GlassFish under the Netbeans 8.2. So you will:
        1. Open Netbeans 8.2
        2. Go to Services tab
        3. Right click on Servers node
        4. Select "GlassFish Server"
        5. Click Next

6. On "Installation Location", put the folder where you extracted the file
7. Let "Local Domain" selected
8. Click Next
9. Let the details as they are and click "Finish"

4. Git SCM
    1. Download at:
        1. Mac: https://git-scm.com/download/mac
        2. Windows: https://git-scm.com/download/win
        3. Tar: https://www.kernel.org/pub/software/scm/git/
    2. For Windows distribution: execute the .exe downloaded file and follow its instructions;
    3. For MacOS distribution: execute the .dmg downloaded file and follow its instructions;
    4. For Fedora, RHEL or CentOS:
        1. sudo dnf install git-all
    5. For Debian and Ubuntu:
        1. sudo apt install git-all

5. Docker CE 18
    1. Steps taken from the official documentation at https://docs.docker.com/install/
    2. For MacOS
        1. Download at https://download.docker.com/mac/stable/Docker.dmg
        2. Double-click Docker.dmg to open the installer, then drag Moby the whale to the Applications folder.
        3. Double-click Docker.app in the Applications folder to start Docker. (In the example below, the Applications folder is in “grid” view mode.)
        4. You are prompted to authorize Docker.app with your system password after you launch it. Privileged access is needed to install networking components and links to the Docker apps.
        5. The whale in the top status bar indicates that Docker is running, and accessible from a terminal.

6. If you just installed the app, you also get a success message with suggested next steps and a link to this documentation. Click the whale (whale menu) in the status bar to dismiss this popup.

3. For Windows 10
    1. Note: The current version of Docker for Windows runs on 64bit Windows 10 Pro, Enterprise and Education (1607 Anniversary Update, Build 14393 or later).
    2. Download at https://download.docker.com/win/stable/Docker%20for%20Windows%20Installer.exe
    3. Double-click Docker for Windows Installer.exe to run the installer.
    4. If you haven't already downloaded the installer (Docker for Windows Installer.exe), you can get it from download.docker.com. It typically downloads to your Downloads folder, or you can run it from the recent downloads bar at the bottom of your web browser.
    5. Follow the install wizard to accept the license, authorize the installer, and proceed with the install.
    6. You are asked to authorize Docker.app with your system password during the install process. Privileged access is needed to install networking components, links to the Docker apps, and manage the Hyper-V VMs.
    7. Click Finish on the setup complete dialog to launch Docker.
    8. Docker does not start automatically after installation. To start it, search for Docker, select Docker for Windows in the search results, and click it (or hit Enter).
    9. When the whale in the status bar stays steady, Docker is up-and-running, and accessible from any terminal window.
    10. If the whale is hidden in the Notifications area, click the up arrow on the taskbar to show it.
4. For Ubuntu
    1. Update the apt package index:
       sudo apt-get update

    2. Install packages to allow apt to use a repository over HTTPS:

       sudo apt-get install \

apt-transport-https \
ca-certificates \
curl \
software-properties-common

3. Add Docker's official GPG key:

   curl -fsSL https://download.docker.com/linux/ubuntu/gpg |
   sudo apt-key add -

4. Use the following command to set up the stable repository
   sudo add-apt-repository \
   "deb [arch=amd64]
   https://download.docker.com/linux/ubuntu \
   $(lsb_release -cs) \
   stable"

5. Update the apt package index.
   sudo apt-get update

6. Install the latest version of Docker CE:

   sudo apt-get install docker-ce

7. Verify that Docker CE is installed correctly by running the hello-world image.
   sudo docker run hello-world

5. For Fedora
   1. Install the dnf-plugins-core package which provides the commands to manage your DNF repositories from the command line.
      sudo dnf -y install dnf-plugins-core

   2. Use the following command to set up the stable repository. You always need the stable repository, even if you want to install builds from the edge or test repositories as well.

      sudo dnf config-manager \
      --add-repo \
      https://download.docker.com/linux/fedora/docker-ce.repo