

CS 891: Scalable Microservices: Overview (Part 3)

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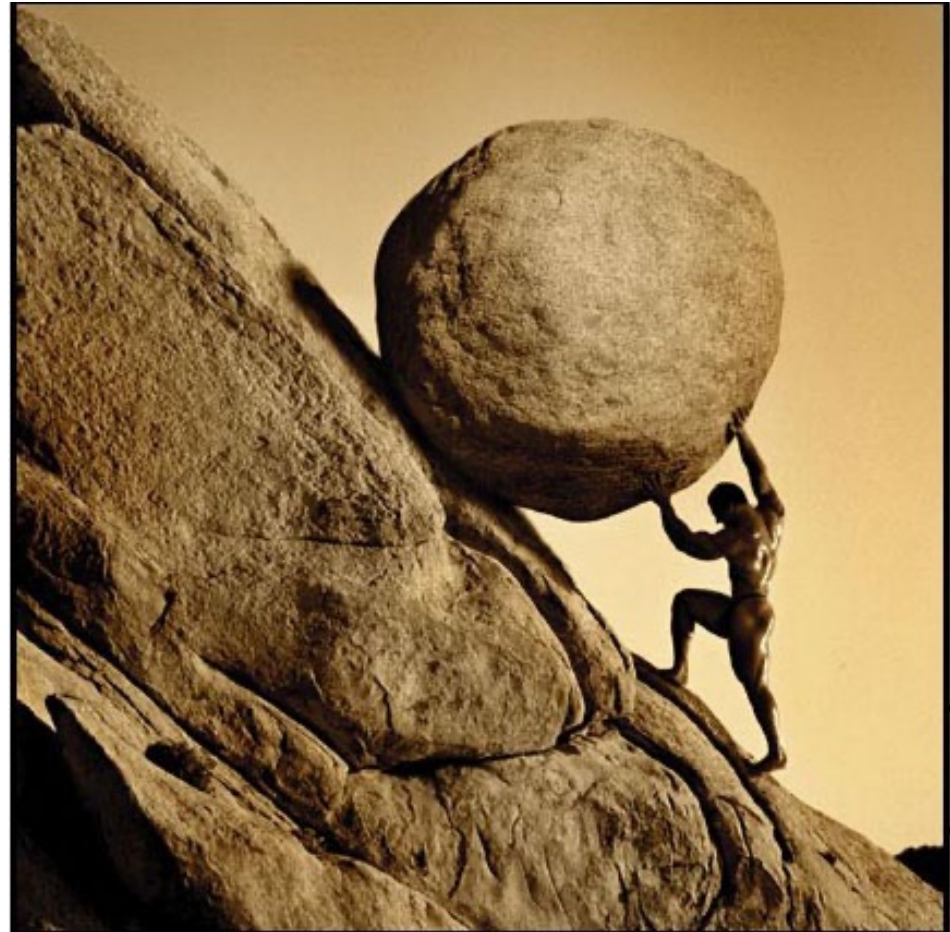
**Institute for Software
Integrated Systems**

**Vanderbilt University
Nashville, Tennessee, USA**



Learning Objectives in this Lesson

- Understand the course topics & logistics
 - Course philosophy
 - Course contents
 - Structure of the lecture material
 - Overview of the assignments & assessments
- Setting up Java & IntelliJ
- Setting up GitLab et al.
- Accessing Java 19 source code



Setting Up the Java IDE on IntelliJ

Installing Java & IntelliJ Developer Tools

- To use Java 19, you need to download & install the latest release of IntelliJ

Download IntelliJ IDEA

Windows

macOS

Linux

Ultimate

The Leading Java and Kotlin IDE

Download

.dmg ▼

Free 30-day trial available

Community Edition

The IDE for pure Java and Kotlin development

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Free, built on open source



Select an installer for Intel or Apple Silicon

See www.jetbrains.com/idea/download

Installing Java & IntelliJ Developer Tools

- Installation steps



Installing Java & IntelliJ Developer Tools

- Installation steps
 - Download & install the latest version of IntelliJ

Download IntelliJ IDEA

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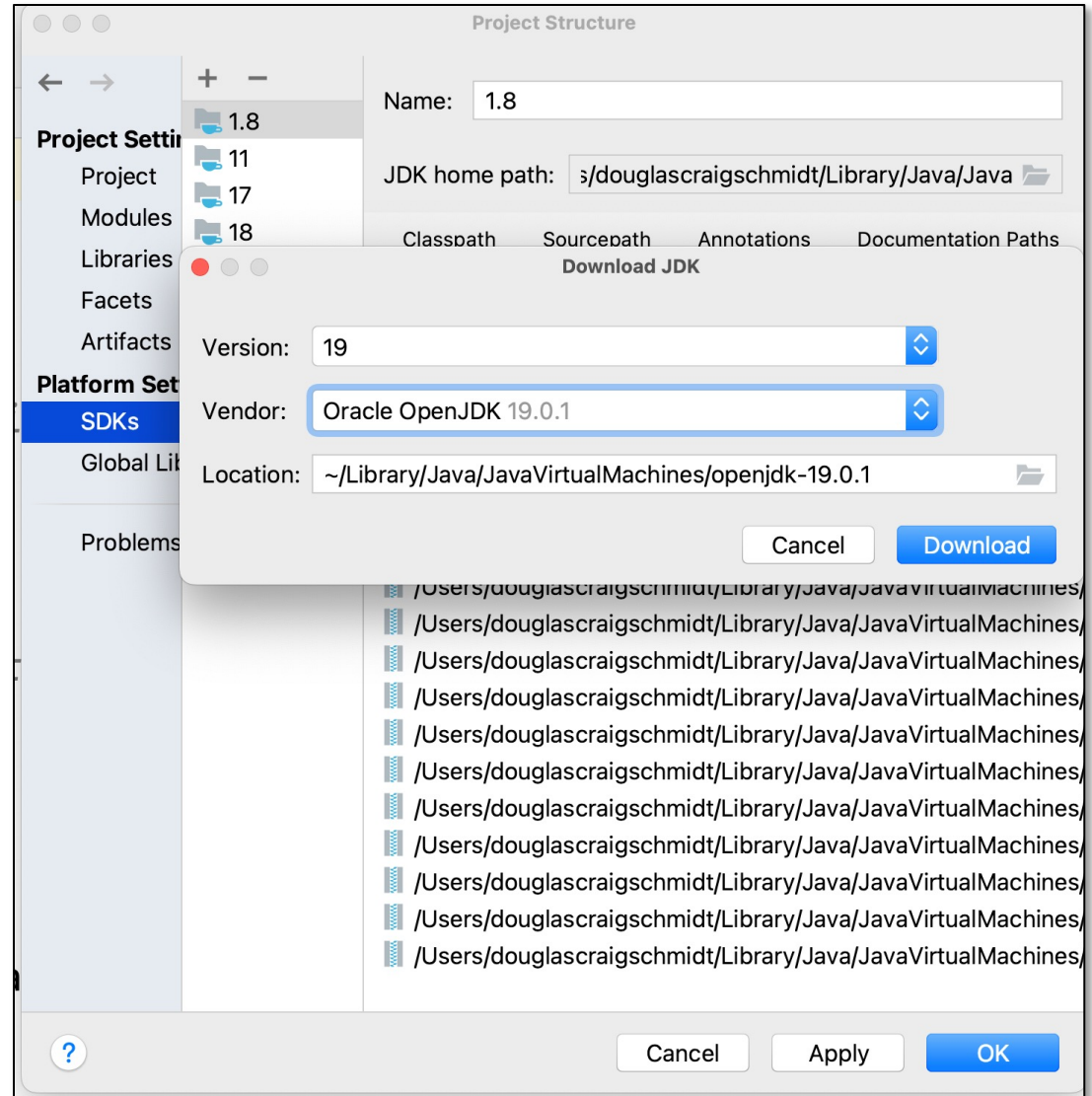
Free, built on open source

i Select an installer for Intel or Apple Silicon

See www.jetbrains.com/idea/download

Installing Java & IntelliJ Developer Tools

- Installation steps
 - Download & install the latest version of IntelliJ
 - Open the Project Settings & add the Java 19 SDK



Setting Up GitLab et al.

Setting Up GitLab et al.

The screenshot shows the GitLab.com dashboard. At the top, there is a navigation bar with the GitLab logo, a search bar, and various utility icons. Below the navigation bar, a promotional banner for a "Free Trial of GitLab.com Gold" is visible. The main content area is titled "Welcome to GitLab" with the tagline "Code, test, and deploy together". Four main action cards are displayed in a 2x2 grid:

- Create a project**: Projects are where you store your code, access issues, wiki and other features of GitLab. This card is highlighted with a red border.
- Create a group**: Groups are the best way to manage projects and members.
- Explore public projects**: There are 1,385,678 public projects on this server. Public projects are an easy way to allow everyone to have read-only access.
- Learn more about GitLab**: Take a look at the documentation to discover all of GitLab's capabilities.

Setting Up GitLab et al.

New Project · GitLab

gitlab.com/projects/new

Projects Groups Activity Milestones Snippets

New project

A project is where you house your files (repository), plan your work (issues), and publish your documentation (wiki), among other things.

All features are enabled for blank projects, from templates, or when importing, but you can disable them afterward in the project settings.

To only use CI/CD features for an external repository, choose **CI/CD for external repo**.

Information about additional Pages templates and how to install them can be found in our [Pages getting started guide](#).

Tip: You can also create a project from the command line. [Show command](#)

Blank project Create from template Import project CI/CD for external repo

Project name
CS-891-spring-2024

Project URL Project slug

Want to house several dependent projects under the same namespace? [Create a group](#).

Project description (optional)

Visibility Level ⓘ

Private
Project access must be granted explicitly to each user.

Public
The project can be accessed without any authentication.

Initialize repository with a README
Allows you to immediately clone this project's repository. Skip this if you plan to push up an existing repository.

Create project Cancel

Setting Up GitLab et al.

The screenshot shows the GitLab web interface in a browser. The address bar shows the URL `gitlab.com/lclfox/CS-891-fall-2022`. The page title is "Lindsey Fox / CS-891-fall-2022". The main content area displays a notification: "Project 'CS-891-fall-2022' was successfully created." Below this, the project details for "CS-891-spring-2024" are shown, including the Project ID "13944228" and a "Clone" button. The repository is currently empty, and the page provides instructions on how to create files or upload existing files. The sidebar on the left contains navigation links for Project, Details, Activity, Cycle Analytics, Issues, Merge Requests, CI / CD, Operations, Packages, Wiki, Snippets, and Settings.

You won't be able to pull or push project code via SSH until you **add an SSH key** to your profile [Don't show again](#) | [Remind later](#)

Lindsey Fox > CS-891-fall-2022 > Details

Project 'CS-891-fall-2022' was successfully created.

CS-891-spring-2024 Project ID: 13944228 🗑️ ☆ Star 0 Clone

[Add license](#)

The repository for this project is empty

You can create files directly in GitLab using one of the following options.

[New file](#) [Add README](#) [Add CHANGELOG](#) [Add CONTRIBUTING](#)

Command line instructions

You can also upload existing files from your computer using the instructions below.

Git global setup

```
git config --global user.name "Lindsey Fox"
git config --global user.email "lindsey.fox@vanderbilt.edu"
```

Create a new repository

```
git clone https://gitlab.com/lclfox/cs-891-fall-2019.git
cd cs-891-fall-2019
touch README.md
git add README.md
```

Setting Up GitLab et al.

Members · Lindsey Fox / CS-891- / project_members

gitlab.com/lclfox/CS-891-fall-2022/-/project_members

GitLab Projects Groups Activity Milestones Snippets

Search or jump to...

cs-891-fall-2019

Project

Issues 0

Merge Requests 0

CI / CD

Operations

Packages

Wiki

Snippets

Settings

General

Members

Integrations

Repository

CI / CD

Operations

Collapse sidebar

Lindsey Fox > CS-891-fall-2022 > Members

Project members

You can invite a new member to **CS-891-spring-2024** or invite another group.

Invite member Invite group

GitLab member or Email address

Douglas Craig Schmidt

Choose a role permission

Maintainer

[Read more about role permissions](#)

Access expiration date

Expiration date

Add to project Import

Existing members and groups

Members of **CS-891-spring-2024**

Find existing members by name Sort by Name, ascending

Lindsey Fox @lclfox It's you

Given access 2 minutes ago

Maintainer

Setting Up GitLab et al.

The screenshot shows the GitLab web interface. The browser address bar displays `gitlab.com/lclfox/CS-891-fall-2022/edit`. The GitLab navigation bar includes a search bar and various utility icons. The left sidebar shows the project structure, with 'Settings' selected and 'General' highlighted. The main content area is titled 'Lindsey Fox > CS-891-spring-2024 General Settings'. The 'Naming, topics, avatar' section is expanded, showing fields for 'Project name' (CS-891-spring-2024) and 'Project ID' (13944228). Below these are fields for 'Topics' and 'Project description (optional)'. The 'Project avatar' section shows a circular placeholder with the letter 'C' and a 'Choose file...' button. A 'Save changes' button is located at the bottom of this section. The 'Visibility, project features, permissions' section is also expanded, showing a 'Project visibility' dropdown menu set to 'Private'. Below this, a note states: 'The project is accessible only by members of the project. Access must be granted explicitly to each user.'

Setting Up GitLab et al.

2. Clone your GitLab repo

```
git clone git@gitlab.com:your-name/CS-891-spring-2024.git
```

1. Create Your GitLab Repo

`www.gitlab.com`



**Working Folder
(Student's)**

**GitLab Repo
(Student's)**

```
cd CS-891-spring-2024
```

3. Change Director into Your Working Folder

See docs.gitlab.com/ee/user/ssh.html for info on setting up an SSH key for GitLab

Setting Up GitLab et al.

4. Update from Read-Only GitHub Repo

```
git remote add skeletons
```

```
git@github.com:douglasraigschmidt/CS891.git
```

5. Get Current Version

```
git pull skeletons main
```

**Working Folder
(Student's)**

Assignment1a
...

6. Do work!

**Local Repo
(Student's)**

Assignment1a
...

**GitLab Repo
(Student's)**

Assignment1a
...

**GitHub Repo
(Instructor's)**

Assignment1a
Assignment1b
Assignment2a
Assignment2b
...

```
git commit
```

7. Commit Changes

```
git push origin main
```

8. Send Changes to GitLab Repo

See item #13 at github.com/douglasraigschmidt/CS891/wiki/CS-891-FAQ

Accessing Java 19 Source Code

Accessing Java 19 Source Code

- Java source code is available

- For browsing zgrepcode.com

JDK Project

The goal of this long-running Project is to produce a series of open-source reference implementations of the Java SE Platform, as specified by JSRs in the Java Community Process. The Project ships a feature release every six months according to a strict, time-based model, [as proposed](#).

Releases

- [21](#) (in development)
- [20](#) (in development)
- [19](#) (GA 2022/09/20)
- [18](#) (GA 2022/03/22)
- [17](#) (GA 2021/09/14)
- [16](#) (GA 2021/03/16)
- [15](#) (GA 2020/09/15)
- [14](#) (GA 2020/03/17)
- [13](#) (GA 2019/09/17)
- [12](#) (GA 2019/03/19)
- [11](#) (GA 2018/09/25)
- [10](#) (GA 2018/03/20)

Resources

- Development list: [jdk-dev](#)
- Main-line code repository: <https://github.com/openjdk/jdk/>

Accessing Java 19 Source Code

- Java source code is available

- For browsing zgrepcode.com

- For downloading openjdk.org/projects/jdk

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