

CS 398: Application Development

Week 02 Lecture: Kotlin 1

Kotlin basics

Team Meetings

Team organization

- Team of two people that posted on Piazza — <https://piazza.com/class/kxkw2lud9cf5ah?cid=41>
- **Please let me know if your team changes!** No changes after today.

Lectures

- **Everyone is expected to attend ALL lectures** - general lectures plus team meetings.
 - Stay until the end of the class Mon/Wed, for the first 50 mins Fri.
 - You are welcome to stay longer if you want! (Jeff will often stick around longer when possible).
 - Take meeting minutes and store them in your GitLab project.
 - 5% of your grade for attending meetings.

Learning Kotlin

(Optional) Command-Line Installation

You need the Kotlin compiler and runtime. We'll run on the Java JVM.

1. Install Java 16 from adoptopenjdk.net (or another site of your choice).

2. Install Kotlin from kotlinlang.org

3. Check installation from shell:

```
jaffe@Bishop » java --version
openjdk 16.0.1 2021-04-20
OpenJDK Runtime Environment (build 16.0.1+9-24)
OpenJDK 64-Bit Server VM (build 16.0.1+9-24, mixed mode, sharing)

jaffe@Bishop » kotlinc -version
info: kotlinc-jvm 1.6.10 (JRE 16.0.1+9-24)
```

(Recommended) IDE Installation

We highly recommend installing and using IntelliJ IDEA in this course.

IDEs offer advanced features: debugging, profiling, code-completion, refactoring.

It can be installed from <https://www.jetbrains.com/idea/>

- Community Edition is fine
- Runs on macOS (Intel or Apple), Windows, Linux.
- Includes Kotlin and Java plugins.

A. Reference

Using GitLab

Version Control (Git)

Build Systems (Gradle)

IDE (IntelliJ IDEA)

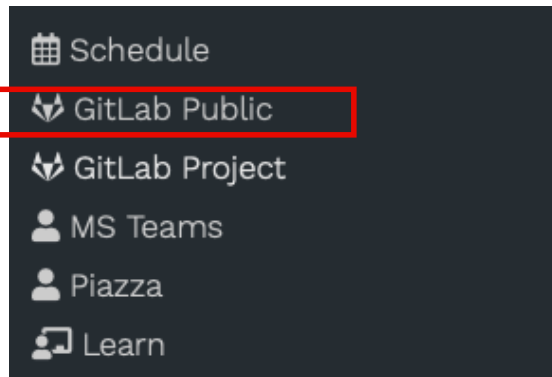


(Optional) Public Git Repo

We have some samples on GitLab.

Most code snippets are embedded in the course notes, but there's a few examples that are useful for testing.

<https://git.uwaterloo.ca/j2avery/cs346-public>



Learning Kotlin

Online

JetBrains. **Kotlin Documentation & Tutorials**. <https://kotlinlang.org>

JetBrains. **Get Started with Kotlin/JVM**. <https://kotlinlang.org/docs/jvm-get-started.html>



Books

Andrew Bailey, David Greenhalgh & Josh Skeen. 2021. **Kotlin Programming: The Big Nerd Ranch Guide**. 2nd Edition. Pearson. ISBN 978-0136891055.

Venkat Subramaniam. 2019. **Programming Kotlin**. Pragmatic Bookshelf. ISBN 978-1680506358.

Courses/Tutorials

JetBrains. **Kotlin Basics Track** (Free). <https://hyperskill.org/tracks/18>

JetBrains. **Kotlin Koans** (Free). <https://play.kotlinlang.org/koans/overview>

Bruce Eckel & Svetlana Isakova. 2020. **Atomic Kotlin**. Leanpub. — \$39 USD book + exercises

Activities

Your First Big Goal

- Design review in approx. 2 weeks.
- See the design review template!

TEMPLATES

Project Templates

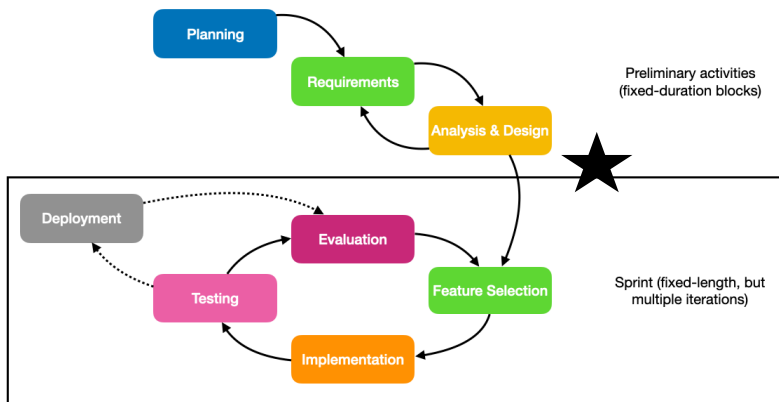
The following are blank templates that you can use to help structure your project. These are meant to suggest how you might structure this information, and what to include.

Documents are typically saved as PDF files. If you need some other editable format (e.g. MS Word, Pages) please [contact the instructor](#).

Deliverables

These are document templates that you can use to structure your deliverables.

- **Meeting Minutes** [pdf docx](#): sample minutes format for regular meetings.
- **Daily Standup Minutes** [pdf docx](#): sample minutes for sprint standup meetings.
- **Design Review Presentation** [pdf pptx](#): sample presentation for your design review.
- **Sprint Demo Presentation** [pdf pptx](#): sample presentation for sprint demos.
- **Final Submission** [pdf docx](#): sample report for your final submission.



Software Development Lifecycle (SDLC)

Activities for Today

Step 1: Pick users

- Decide which users you want to target. “Who are your users?”
 - e.g. Students, Developers, Teachers, (Other?) — pick what appeals to you

Step 2: Interview people that fall into your role

- Find 3-5 users that fit your target demographic. — **this can include course staff.**



Step 3: Create persona(s)

- Can be different types of users, or more nuanced - e.g. front-end developer, mobile developer.

Check-Ins!

- Course staff will drop into your meeting for about 5 mins.

