Javocado

Learning Java made Easier in one App

iLS for Mobile App Programming 1 and Computer/Web Programming 3
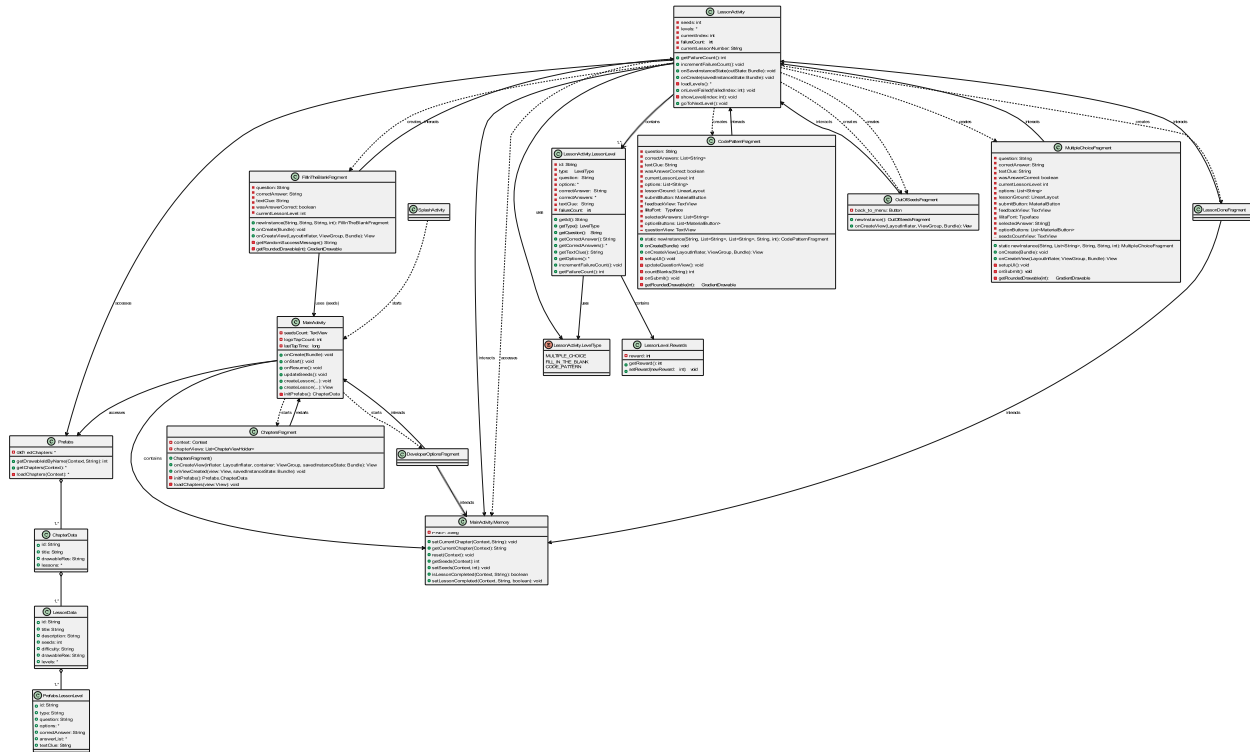
The Purpose of Javocado is to help Young and Inspired Programmers to Practice & Learn the Java Programming Language in a Gamified App.

2025

Documentation

Content:

1. MainActivity

- **Connections:**

  o Uses Prefabs to access chapter/lesson data.

  o Contains Memory as a static nested class.

  o Starts ChaptersFragment, DeveloperOptionsFragment, and is
    started by SplashActivity.

- **Description:**

  o Entry point of the app after splash screen.

- o Handles UI setup, seed updates, and dynamic lesson creation.

- o Maintains persistent app memory logic via nested Memory class.

2. **MainActivity.Memory**

Connections:

- Accessed by MainActivity, DeveloperOptionsFragment, LessonActivity, and LessonDoneFragment.
- Central storage interface for persistent data.

Description:

- Manages SharedPreferences: current chapter, seed count, lesson completion.

3. **LessonActivity**

Connections:

- Creates and interacts with all *Fragment classes related to lessons.

- Accesses Prefabs and Memory.

- Contains multiple LessonLevel instances and uses LevelType.

Description:

- Controls lesson flow: level loading, user progress, failure count.

- Navigates between question fragments and result fragments.

4. LessonActivity

Connections:

- Creates and interacts with all *Fragment classes related to lessons.

- Accesses Prefabs and Memory.

- Contains multiple LessonLevel instances and uses LevelType.

Description:

- Controls lesson flow: level loading, user progress, failure count.

- Navigates between question fragments and result fragments.

5. LessonActivity.LessonLevel

- **Connections:**

  - Contains Rewards, uses LevelType.

  - Accessed by all quiz-type fragments.

- **Description:**

  - Encapsulates data for individual levels: question, answers, clues, type.

  - Tracks user's performance (e.g., failure count).

6. LessonLevel.Rewards

- **Connections:**

  - Owned by LessonLevel.

- **Description:**

  - **Stores and provides access to the reward (e.g., seed count) of a level.**

7. ChaptersFragment

- **Connections:**

- Started by MainActivity, can restart it.

- Uses Prefabs to get ChapterData.

- **Description:**

  - Displays all chapters in a scrollable view.

  - Handles chapter click logic and progress visualization.

8. DeveloperOptionsFragment

- **Connections**:

  - Started by MainActivity, accesses Memory.

- **Description**:

  - Offers debug or developer settings.

  - May modify app state using Memory.

9. SplashActivity

- **Connections**:

  - Starts MainActivity.

- **Description**:

  - Initial screen shown to users before main app loads.

10. Prefabs

- **Connections**:

    - Provides chapter and lesson data to MainActivity, LessonActivity, and ChaptersFragment.

    - Owns multiple ChapterData.

- **Description**:

    - Central static utility for accessing predefined content structures.

    - Caches chapter data for reuse.

11. ChapterData

- **Connections**:

    o Owned by Prefabs, contains multiple LessonData.

- **Description**:

    o Represents a single chapter with metadata and associated lessons.

12. LessonData

- **Connections**:

- Belongs to ChapterData, contains multiple PrefabsLessonLevel.

- **Description**:

  - Encapsulates a lesson's metadata and list of levels.

13. Prefabs.LessonLevel

- **Connections**:

  - Used within LessonData as a prefab/template before being turned into runtime LessonActivity.LessonLevel.

- **Description**:

  - Raw level data from prefabs: includes answers, question, clue, and type.

14–18. Fragments for Levels

a. MultipleChoiceFragment

b. FillInTheBlankFragment

c. CodePatternFragment

- **Connections**:

- o Created by LessonActivity, interacts with it and LessonLevel.

- **Description**:

  - o Show specific quiz types, manage user input and answer validation.

d. OutOfSeedsFragment

- **Connections**:

  - o Created by LessonActivity, interacts with it.

- **Description**:

  - o Shown when the user runs out of seeds (energy).

e. LessonDoneFragment

- **Connections**:

  - o Created by LessonActivity, accesses Memory.

- **Description**:

  - o Final screen after lesson completion.

Advanced Concepts of Java:

Documentation

- **Object-Oriented Programming (OOP):** Use of classes, inheritance, encapsulation, and composition (e.g., inner classes, fragments, and data models).

- **Advanced Methods:** Overriding methods like onCreate, onCreateView, onSaveInstanceState, etc.

- **Inheritance:** Passing data between fragments and activities using arguments and bundles.

- **Custom Data Models:** Use of custom classes for chapters, lessons, and levels, including enums and nested classes.

- **Shared Preferences/State Management:** Managing persistent state via static methods and shared preferences (e.g., MainActivity.Memory).

- **UI Component Manipulation:** Dynamic interaction with UI elements (e.g., updating TextView, handling Button clicks).

- **Intent and Navigation:** Using Intent for activity navigation and controlling the back stack.

Documentation

- **Resource Management:** Accessing and managing resources (drawables, layouts, strings) programmatically.

- **Encapsulation and Access Modifiers:** Use of private fields and public methods for controlled access.

- **Collections and Generics:** Use of List<T> for managing groups of objects (e.g., lessons, options).

Javocado – Group 6

https://github.com/altxxr0/Javocado/

Member Contributions

1. Jovohn Antoine Merick P. Faulve

- Majority of the Java Code, XML animations, Transitions to activity_splash.xml to home.xml, Dropdown & Lessons Capsule.

2. Gene Kyrvic T. Soleta

- Logo of Javocado, Color Pallete of Javocado, Levels Design in Javocado, Splash Screen Design, Javocado Level Complete Design.

3. Rain Zeriel M. Fortaliza

- Dropdown Lesson Capsule Design, Home Layout Design, Side-Menu Design, Home Layout Gradient, Animations.

4. Gian Colobong

- Home Layout Toolbar Design, Chapter Capsule Design, Side-Menu Gradient Design, Level Design in Javocado, Javocado Fonts.

5. Jhayrald M. Tejada

- Present /w Contributions (The Login/Signup [Old]) Until 2nd Quarter 2nd Term, Absent on the 1st of 2nd Quarter 2nd Term