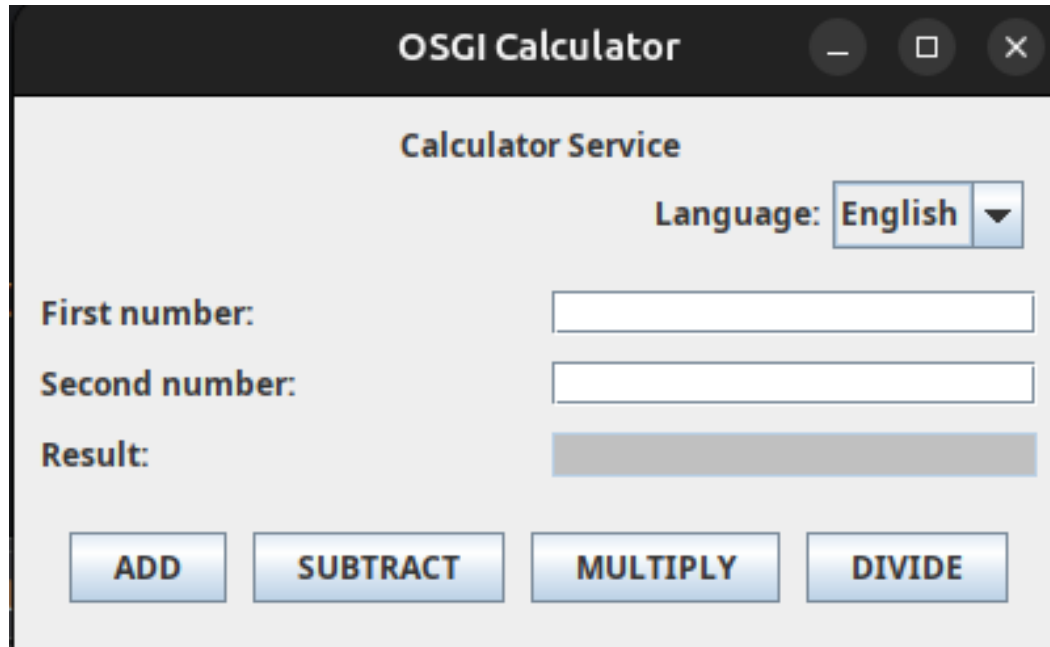


OSGI Calculator



The image shows a screenshot of a Java Swing window titled "OSGI Calculator". The window has a standard macOS-style title bar with minimize, maximize, and close buttons. The main content area is titled "Calculator Service". It features a "Language:" label followed by a dropdown menu currently set to "English". Below this are three input fields: "First number:", "Second number:", and "Result:". The "Result:" field is currently empty and has a grey background. At the bottom of the window, there are four buttons: "ADD", "SUBTRACT", "MULTIPLY", and "DIVIDE".

OSGI Calculator

Calculator Service

Language: English ▼

First number:

Second number:

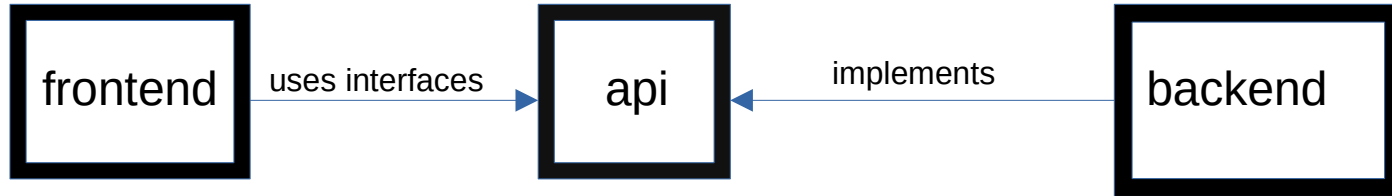
Result:

ADD SUBTRACT MULTIPLY DIVIDE

Can Beydoğan

High-Level Architecture

- Modules:
 - **api** → interfaces
 - **backend** → language logic & services
 - **frontend** → UI & user interaction



API Module (api)

- **No implementations**
- only interfaces
 - DataService
 - NumberLanguage
- Shared **dependency** for both backend and frontend

Backend Module (backend)

- An OSGi bundle that **implements** the interfaces from api
 - DataServiceImpl
- **language-specific** implementations
 - TurkishNumbers
 - EnglishNumbers
- **Map-driven** number logic
- Language rules **isolated** per class
 - **Easy to add new** languages

Frontend Module (frontend)

- **Purpose** : User interface & localization
- **Contents:**
 - MainWindow.java
 - UI.java
 - propeties
- **Responsibilities:**
 - UI rendering
 - Locale detection
- **Loacalization:**
 - messages_en.properties
 - messages_tr.properties
 - UI text separated from logic

Examples

OSGI Hesap Makinesi

Calculator Service

Dil: Türkçe ▼

Birinci sayı: iki yüz bir

İkinci sayı: on bir

Sonuç: iki bin iki yüz on bir

TOPLA ÇIKAR ÇARP BÖL

Default Language (tr)

OSGI Calculator

Calculator Service

Language: English ▼

First number: two hundred one

Second number: eleven

Result: two thousand two hundred eleven

ADD SUBTRACT MULTIPLY DIVIDE

Locale = "en"

Any Question