

## **IT & Computer Science**

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**Section:** SE (GREEN)

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## **Software Construction and Development**

## **Final Semester Project Report**

### 01. GitHub Repository Link:

<https://github.com/abuzarkhanse/Github-Snippets-Search-Engine-Java/>

### 02. Design Pattern Used:

Design Pattern	Where used
Singleton Pattern	In RestTemplate inside GitHubService (Spring internally uses Singleton Beans)
Service Layer Pattern	You created GitHubService.java to separate business logic from Controller
MVC Pattern	Full project: Model, View, Controller separation

### 03. Design Pattern Implementation (Explanation)

#### ➤ Singleton Pattern:

RestTemplate in Spring is a **singleton bean**. Spring ensures only one instance is created and shared across.

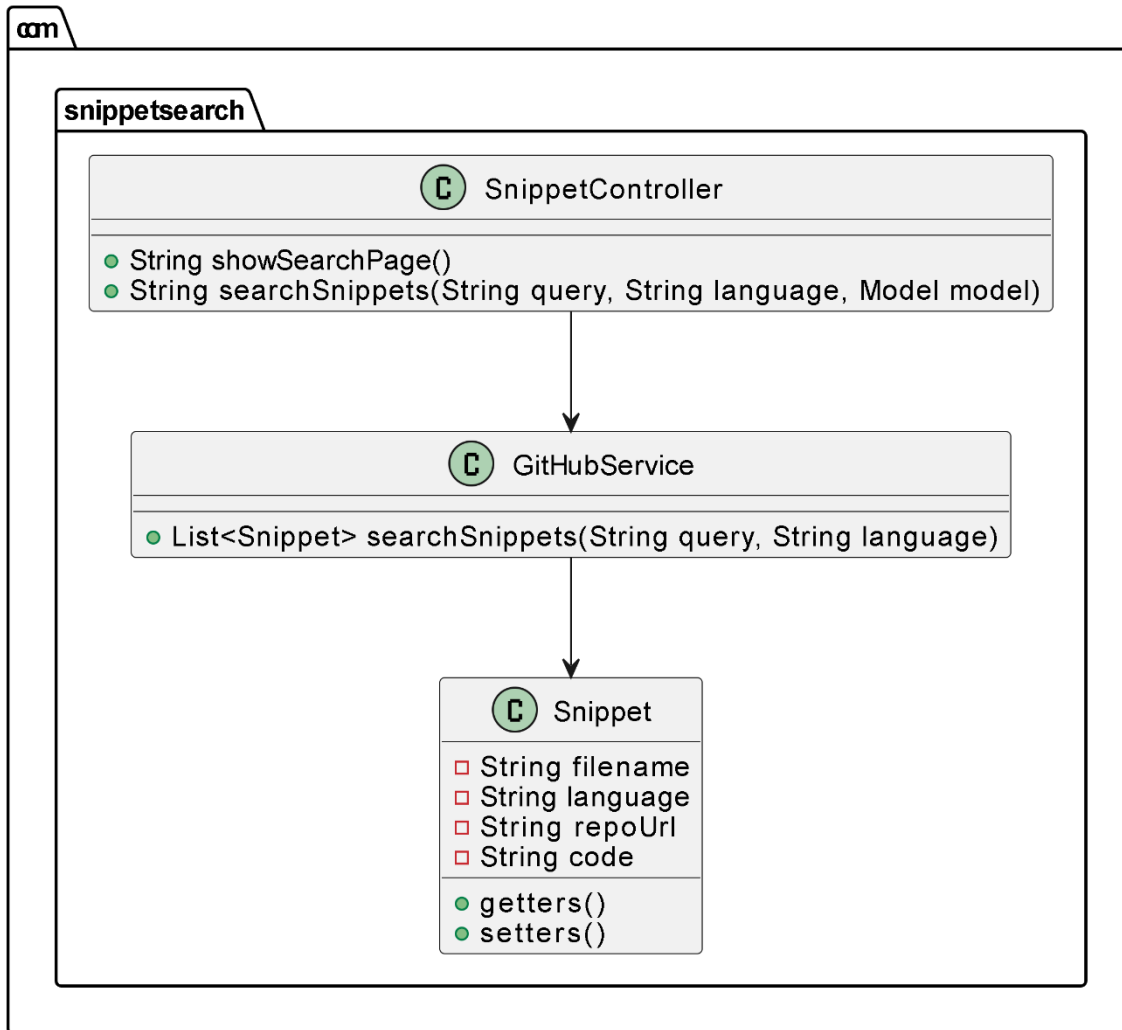
#### ➤ Service Layer Pattern:

GitHubService.java acts as a **service layer** to handle communication with GitHub API. This makes the Controller simple and focused on handling web requests.

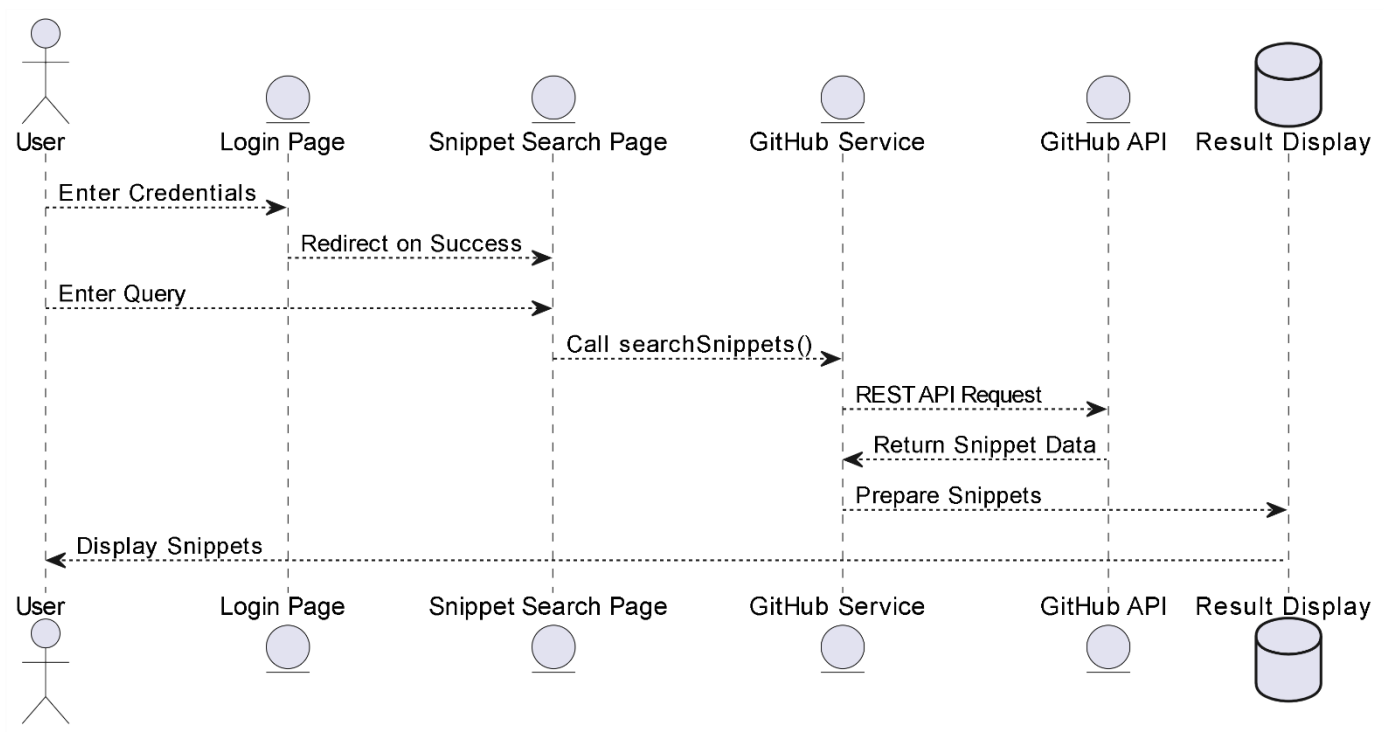
#### ➤ MVC Pattern:

- ✓ **Model:** Snippet.java holds data (filename, language, repo URL).
- ✓ **View:** templates/ folder contains the HTML pages
- ✓ **Controller:** SnippetController.java processes user requests.

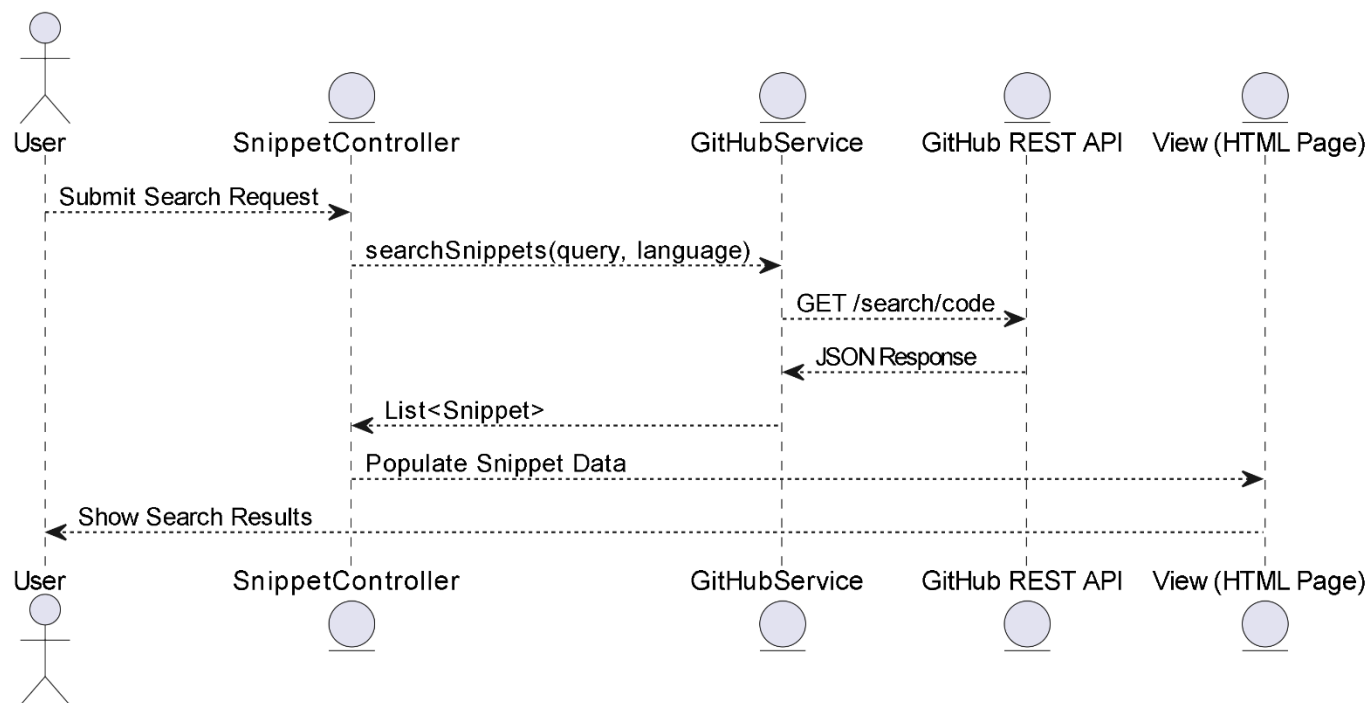
#### 04. Class Diagram:



05. Data Flow Diagram Leve 0:

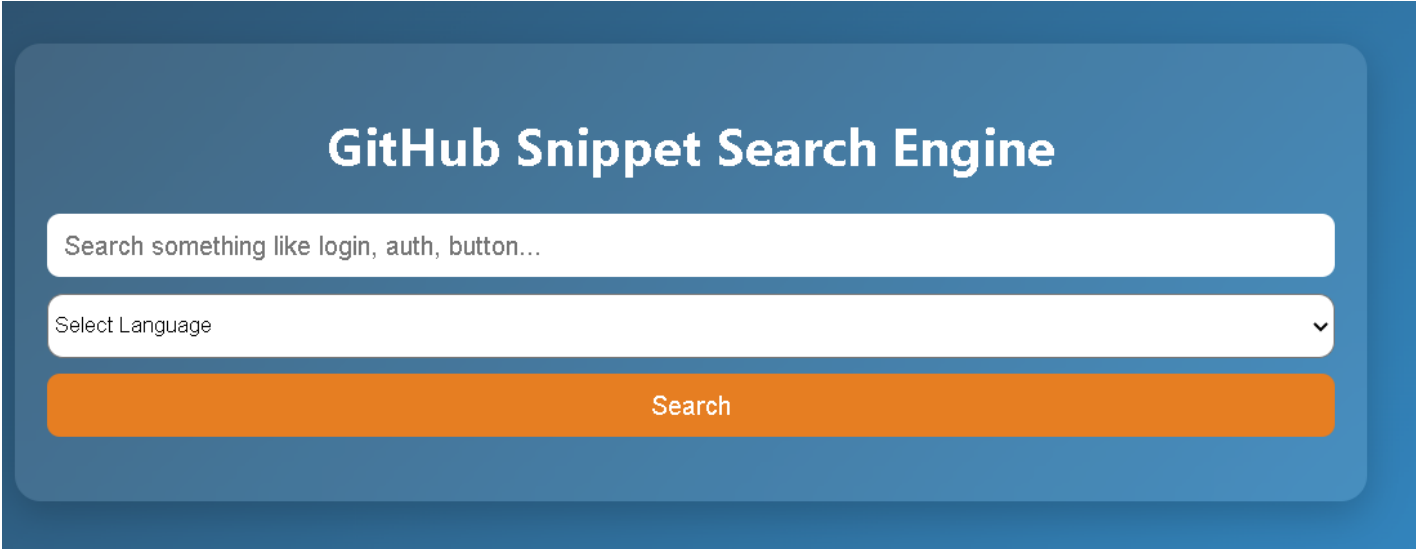


06. Data Flow Diagram Level 1:



07. UI Screenshots:

Landing Page:



Below is Screenshot where i search Code Snippet for Login Page having language filter CSS:

## GitHub Snippet Search Engine

Login Page

CSS

Search

### Instagram -Login-Page

// Click 'View on GitHub' to see full code

[View on GitHub](#)

### Discord-Login-Page

// Click 'View on GitHub' to see full code

[View on GitHub](#)

### instagram-clone-login-page

// Click 'View on GitHub' to see full code

Another test for another language: JS

## GitHub Snippet Search Engine

Search

**pwa-theme-woocommerce**

// Click 'View on GitHub' to see full code

[View on GitHub](#)

**django-react-ecommerce**

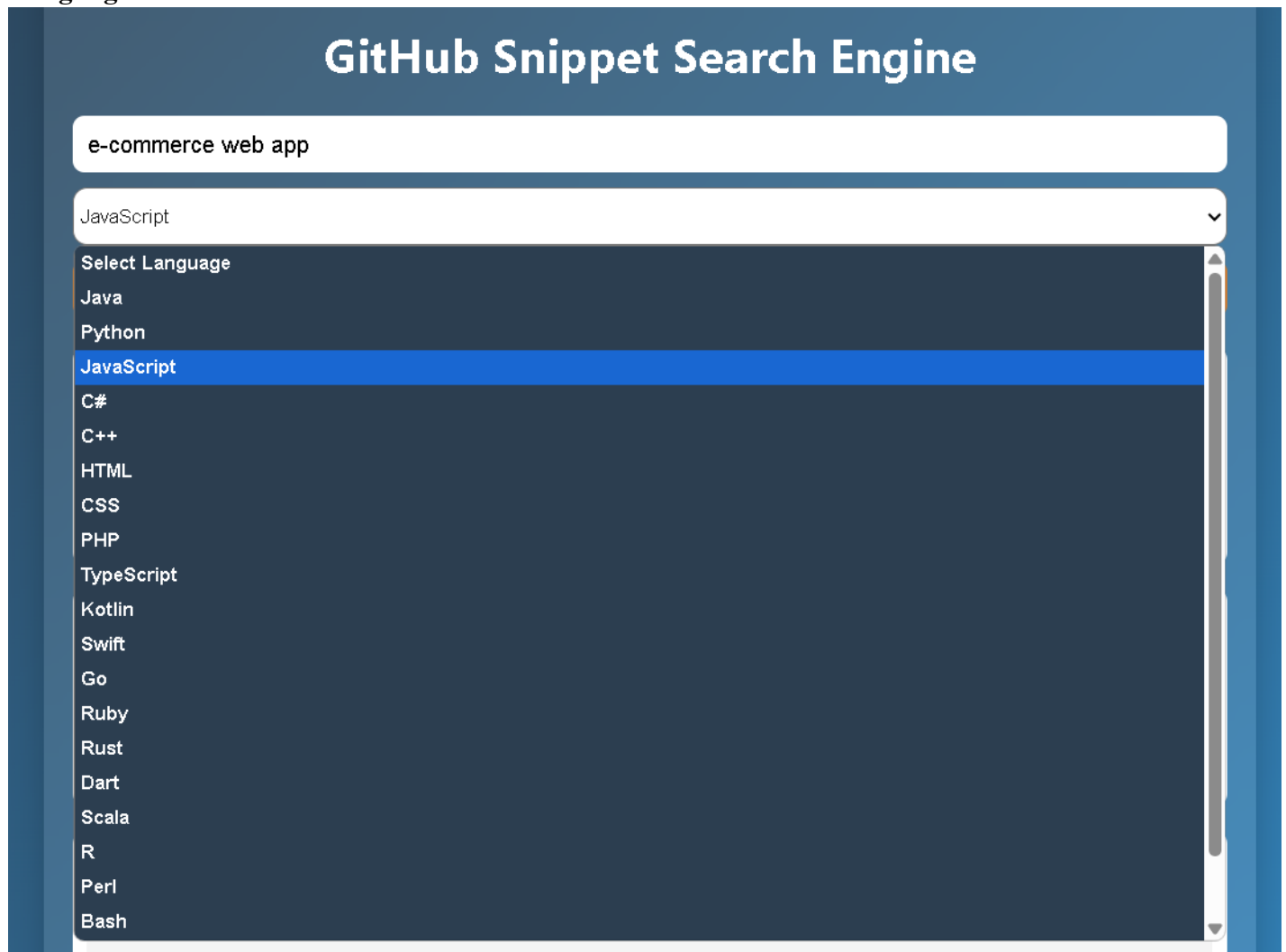
// Click 'View on GitHub' to see full code

[View on GitHub](#)

**sample-pie-shop**

// Click 'View on GitHub' to see full code

**Language Filter list:**



## GitHub Snippet Search Engine

JavaScript

Select Language

Java

Python

JavaScript

C#

C++

HTML

CSS

PHP

TypeScript

Kotlin

Swift

Go

Ruby

Rust

Dart

Scala

R

Perl

Bash