CS 3240 / Guided Practice D: Framework Research

Instructions:
- Complete this guided practice outside of class.
- You may work by yourself or in teams of two or three. Larger groups are not allowed.
- You must submit a PDF of this GP into Gradescope by the listed deadline.
- Make sure to select the pages with the answers to the questions!
- If you work in a group of two or three, one person should submit the GP to Gradescope and then use the "View or edit group" option on the right side of the screen to select the other members of your team.

Choose two languages from the following set: {PHP, Python, Java, Kotlin, Ruby}. You MUST choose from this set - no other languages are allowed. Then find two frameworks online for each language and compare them below. **YOU CANNOT USE DJANGO, BOOTSTRAP, OR ANYTHING ELSE WE HAVE ALREADY DISCUSSED IN CLASS.** Please limit your responses to one framework per page without going over. Copy/pasting text from the websites is not acceptable. We expect reasonable, detailed answers.

DELETE THE INSTRUCTIONS ABOVE THIS LINE SO YOU HAVE THE ENTIRE PAGE FOR THE FIRST FRAMEWORK.

Language 1: Python
Framework #1: Turbogears

URL: https://www.turbogears.org/

Give a short description of the framework as you understand it:
Turbogears is a Python web framework that helps with the development of web applications. It follows the MVC pattern. Turbogears is a framework that is built upon other web frameworks and provides better tools and assistance in web development.

      Describe what is believed to be the strengths of the framework:
- *provides flexibility in choosing databases and templates, enabling developers to work with the tools they are comfortable with.*
- *Turbogears Community, which provides great benefits from the collective knowledge and contributions of developers, while also having plenty of resources and examples to learn from.*
- *integration with various technologies and libraries, simplifying the process of incorporating external services and modules into web applications.*

Is this an MVC framework? If it is, how do you know it is MVC? If not, what type of architecture is it?
Yes. It adheres to the MVC pattern by separating the application into models, views and controllers by representing data and database schema, handling the presentation logic, and controllers managing user input.

Describe any licencing or usage requirements / restrictions:
MIT License: open source license that allows for commercial and non commercial use. So you can use the source code without any restrictions

Rate the framework on the following: (5: Excellent; 4: Good; 3: Neutral; 2: Poor; 1: Terrible)

Initial Impression: 4	Understandability: 3

"Getting Started" Instructions:5	Capabilities:4
Installation and Maintenance:4	Community Support:5

Framework #2: flask

URL: https://flask.palletsprojects.com/en/3.0.x/

Give a short description of the framework as you understand it:

Flask: Python web framework that provides the essentials for building web applications. It is designed to be simple and easy to use, allowing developers to quickly create web applications with minimal boilerplate code making it a popular choice for small to medium-sized projects.

Describe what is believed to be the strengths of the framework:
Flask has a simple and intuitive API, making it easy to learn and use, especially for beginners in web development. Flask is highly extensible, allowing developers to add functionality through Flask extensions. There is a wide range of community-contributed extensions available for various tasks.

Is this an MVC framework? If it is, how do you know it is MVC? If not, what type of architecture is it?
Flask does not clearly have the framework but does allow developers to organize code to follow the MVC architecture.

Describe any licencing or usage requirements / restrictions:
Berkeley Software Distribution License, which is open source but requires the original copy right in order to use.
Rate the framework on the following: (5: Excellent; 4: Good; 3: Neutral; 2: Poor; 1: Terrible)

Initial Impression: 4	Understandability: 4
"Getting Started" Instructions:4	Capabilities:3
Installation and Maintenance:3	Community Support:5

Decision - If you had to choose one of these two frameworks for your current project, which one would you choose and why?

Turbogears-there seems to be more you can do with turbogears in terms of capabilities offered by the framework. Also turbogears give a better understanding of its documentation and when searching for resources turbogears offer more in terms of set up and maintainability.

Language 2: Java
Framework #1: Java Apache Wicket

URL: *https://wicket.apache.org/*

Give a short description of the framework as you understand it:
Apache Wicket is a Java web application framework that simplifies the development of dynamic, scalable, and maintainable web applications. It uses a component-based approach, allowing developers to create reusable components and build complex user interfaces with minimal code.

Describe what is believed to be the strengths of the framework:
- Wicket's component-oriented architecture promotes the reusability of code, making it easier to create and maintain complex web applications.
- Wicket allows developers to work with plain Java objects, reducing the learning curve and enabling the use of familiar Java concepts.
- Wicket emphasizes simplicity and consistency, making it easier for developers to understand and work with the framework.

Is this an MVC framework? If it is, how do you know it is MVC? If not, what type of architecture is it?
Yes, In Wicket, components serve as the View and the Controller, and the application's data model represents the Model.

Describe any licencing or usage requirements / restrictions:

It is open-source software released under the Apache License 2.0, which is a free software license written by the Apache Software Foundation. This license allows you to use the software to modify its source code, and distribute modified or unmodified versions of the software. However, you must have the original copyright notice and disclaimer when distributing the software.

Rate the framework on the following: (5: Excellent; 4: Good; 3: Neutral; 2: Poor; 1: Terrible)

Initial Impression: 5	Understandability: 4
"Getting Started" Instructions:5	Capabilities:3
Installation and Maintenance:5	Community Support:3

Framework #2: spring

URL: https://spring.io/

Give a short description of the framework as you understand it:
Spring provides a series of services in developing web applications such as Microservices web apps, the cloud automated tasks and more.
Describe what is believed to be the strengths of the framework:
Flexible: Spring is able to work seamlessly and integrate with many third party applications and DI features. It has the ability to easily integrate cloud technology in developing webapps.
Security: Spring makes it easy to integrate security into your web application. The team behind spring has a large focus on monitoring third party software it is compatible with for security clearance and precautions.
Is this an MVC framework? If it is, how do you know it is MVC? If not, what type of architecture is it?

Describe any licencing or usage requirements / restrictions:
Spring's modular design allows developers to integrate other architectural patterns like AOP and IoC as needed, providing flexibility in application design.
Rate the framework on the following: (5: Excellent; 4: Good; 3: Neutral; 2: Poor; 1: Terrible)

Initial Impression: 4	Understandability: 3
"Getting Started" Instructions:4	Capabilities:5
Installation and Maintenance:3	Community Support:3

Decision - If you had to choose one of these two frameworks for your current project, which one would you choose and why?

I would Choose Apache Wicket, Apache has a series of Frameworks and APIS so the documentation surrounding it is immense. Since Apache has a larger team their Wickett Framework seems to be more efficient and built out more seamlessly allowing for better user/ developer accessibility and maintenance.