# **Task Logger**

# Live Tasks

## Project [Project Description] format expected – Send to Recipient

// Add checkbox if task completed [type ‘checkbox’ in search bar. To save as short-cut right-click and ‘add to quick access toolbar’.]

// If all completed move this whole task under ‘Completed Tasks’ Heading

Breakdown Task 1

Breakdown Task 2

### Superseded

// Input breakdown task that is not now required here [good to keep record of the decision of why it is not now required]

## My Personal Banking Project

* Need to review whether my accounts project is tight coupling
  + If so, need create a new branch (refer to MOOC content) to follow IoC principle and use Dependency Injection design pattern
* Need to outline what dependencies I need before create project outline with Spring.io

## Spring Boot Session 1 format expected – Send to Recipient

### Question

// Spring Boot Application Structure

Different Controllers / Repository / Service(slide 33)

### Words / terms to research and Why

* @RestController : Believe this needed for all classes but do not know why
* @RequestMapping(“/”) : it is above a method, do not know why
* @SpringBootApplication : Believe this needed for main method class but do not know why
* Front controller in Spring Framework: I believe that this is created within spring and its purpose is to see all requests mapping identify which type of method is linked to the controller type repository type or service type. However I do need to research to find out how this is done.

### Investigate

#### Java String message to web browser

For Controller classes there are 3 annotations used to display a message written in Java on the web browser through the following below steps. I need to investigate how to retrieve a html file to display as my Homepage.

1. A screen shot of a computer code

   Description automatically generated
2. Can use @RestController instead of @Controller
3. Click RUN on IDE
4. Type ‘localhost:8080 (The port the Tomcat is running on)
5. A screenshot of a computer

   Description automatically generated

# Pending Review to solidify Knowledge

## Email of Questions Sent to Raghu – 29.07.24

#### 1 - Question I asked: How does Web applications, SQL and RestAPI connect?

Answer Breakdown Gathered

Model-View-Controller (**MVC**) is a design pattern

##### Advantages

Separation of Concerns, making the code easier to understand.

Each component (model, view, controller) can be tested separately.  The components are independent, changes to one component do not affect the others, allowing for easier update. Multiple developers can work on different components simultaneously. components can be reused in other parts of the application or in different projects.

##### 2 - Model:

Handles data logic of the request. Model interacts with database and handles all updates, deleting, validation, saving and etc.

SQL database

##### 3 - View:

Once the controller has received data from the model, it will decide whether successful or not and type and action the view to give the intended view type.

Web-application

##### 1 - Controller:

Controller handles all requests from the client and tells server what to do with requests. The controller should only use the model and not interact with it, as the model should handle the data logic.

The controller will handle success and failure after receiving information from the model

RestAPI

* Model and View never interact with each other

#### 3 – Understanding what exactly is being precompiled before deployment

So from my understanding WAR files is able to compile all files associated with web application development and JAR is solely for Java class files.

#### 4 – what dependencies are provided that are generic enough to be all accepted for web application?

So the example given for Dependency Injection, which from my research is when Spring creates an object for you and manages this object through the annotation @Component (tell Spring which class you want it to make objects of).

### KeyWord

* MVC
* View renders
* Dependency Injection

### Questions still outstanding

#### Question 1

1a) “deploy two different front ends on say two separate URLs” – Would expect the URL to be the same, as it is viewed on the web no matter if a laptop or mobile device. Included a snippet of typical URL structure, could you highlight what would be different.

A diagram of a computer

Description automatically generated

1b) “where majority of the business logic sits and interactions between the code and Database” – do you mean that the source code would be the business logic or the set SQL Queries in the database.

1c) So Views, I’m assuming you would have to make every possible screen expected UI (call it activity in mobile development) and then for checking balance page, display amount client has.

Flow expected for the scenario above

Client click check balance (after successfully logged in) –> controller (server) receives request then responds with Loading displayed on UI from View and requests for checking balance by sending userId to Model -> Model either returns checking balance or Error type if a negative value to Controller -> Controller decides what type of request to retrieve from View (either checking balance displayed or Error type page) –> View returns that UI to controller which is then sent to Client.

#### Question 3

3a) “package all dependent code files” – What does he mean by that, assume similar relationship mentioned in CBF session with DiceGame and DicePlayer (one being dependent of each other). Thinking it is referring to Dependency Inversion Principle, not as experienced on this as I would like.

3b) So as you mentioned “distribute your application to whoever wants to run it”, I would assume you would need to precompile in WAR format to the server?

#### Question 4

Not too clear about the dependencies purpose, I have snapshot a Pom.xml file below, that I was hoping you could go through 1 or 2 dependencies, so I can understand what is being done.

A screenshot of a computer program

Description automatically generated

#### Question 6

So, I get it but not as detailed in understanding as I would like. Hoping we could discuss my real-life situation that I think works well with this question.

Context: when I do timesheets, Company Policies and to access my payslip I need to use a time-out authentication application to enter a one-time passcode. When logged in, I can only view my details (assuming directors can view other reporting employees to review expenses submitted). So, let’s say I wanted to view the Company Policy document, my authorisation wouldn’t allow me to edit the document due to not having authorisation to (seeing the button to do so) I would presume.

So essentially security measures are ensuring methods created doesn’t permit unauthorised users access? So, the focus would be on how you write the code and no extra under hood features from Spring Boot?

### References

* [MVC Explained in 4 mins](https://www.youtube.com/watch?v=DUg2SWWK18I)
* [MVC Java code example in separating Model and View](https://www.geeksforgeeks.org/mvc-design-pattern/)
* [Interesting example covering Servlets (altering HTML with Java SRC code (presumed)](https://www.geeksforgeeks.org/difference-between-applets-and-servlets/)

# Completed Tasks

A screenshot of a computer

Description automatically generated