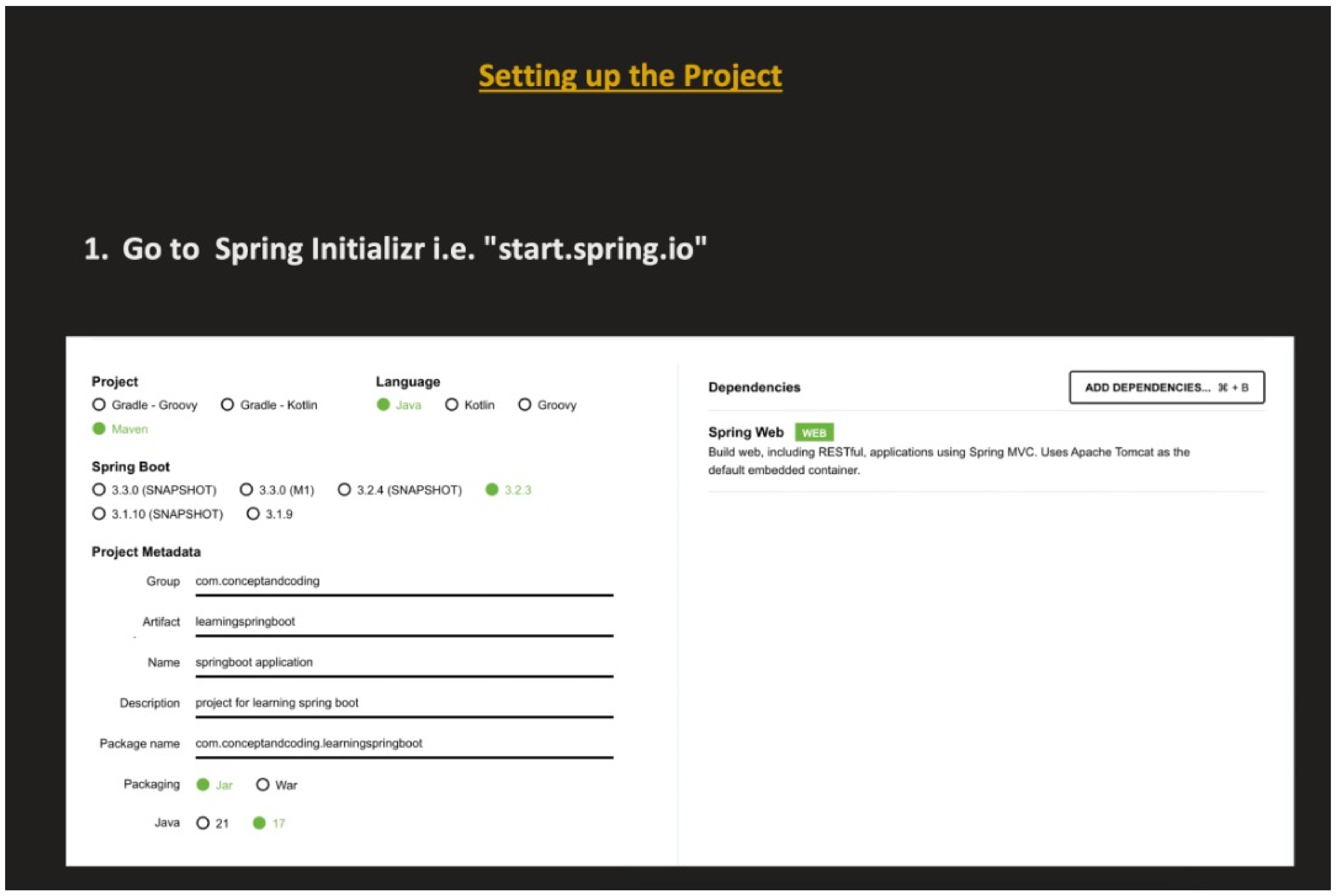
Spring boot: Project Setup and Layered Architecture (Concept …

"Concept && Coding" YT Video Notes



Setting up the Project

1. Go to Spring Initializr i.e. "start.spring.io"

Project
○ Gradle - Groovy ○ Gradle - Kotlin [✓ Maven]

Language
[✓ Java] ○ Kotlin ○ Groovy

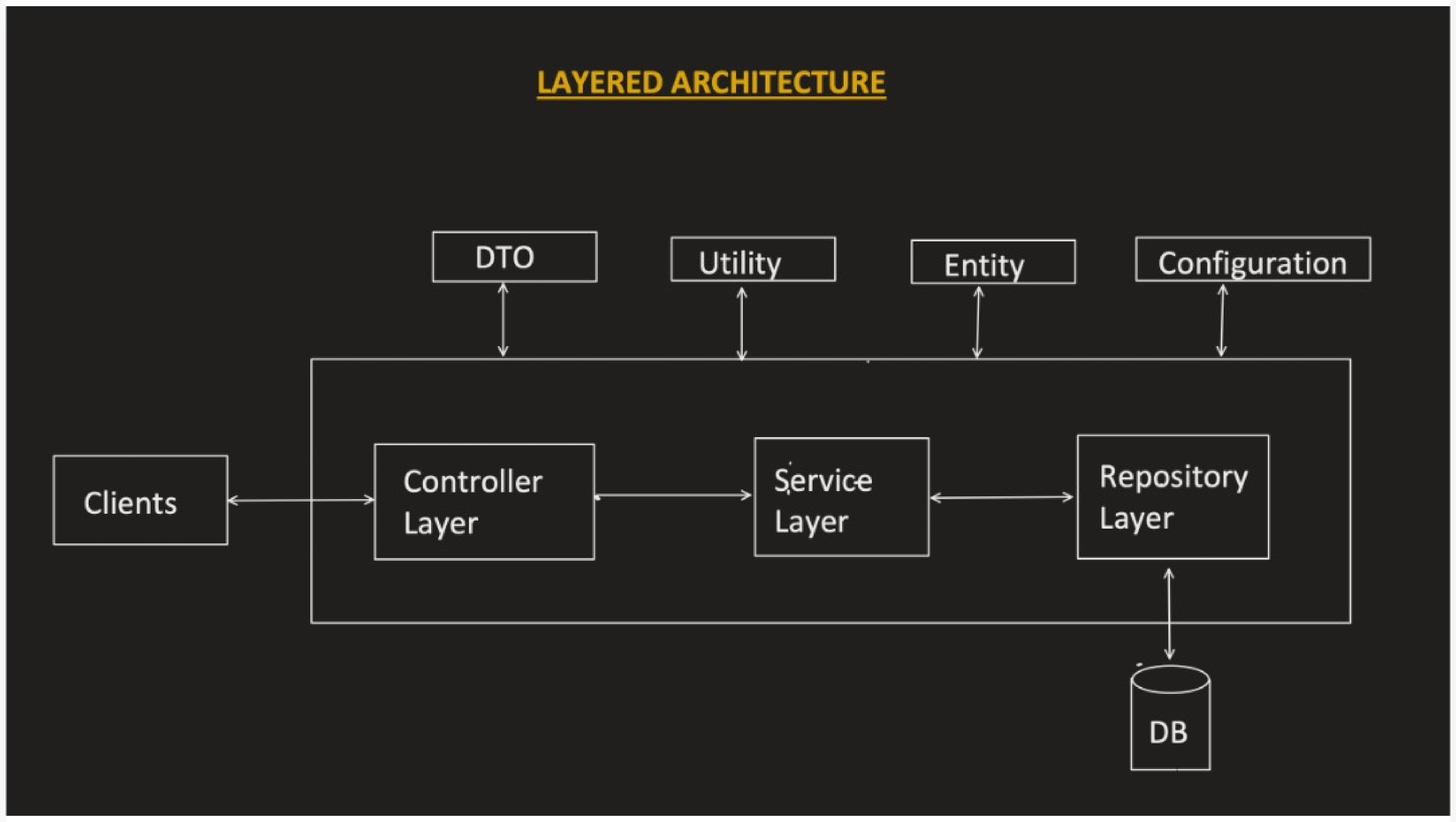
Spring Boot
○ 3.3.0 (SNAPSHOT) ○ 3.3.0 (M1) ○ 3.2.4 (SNAPSHOT) [✓ 3.2.3]
○ 3.1.10 (SNAPSHOT) ○ 3.1.9

Project Metadata

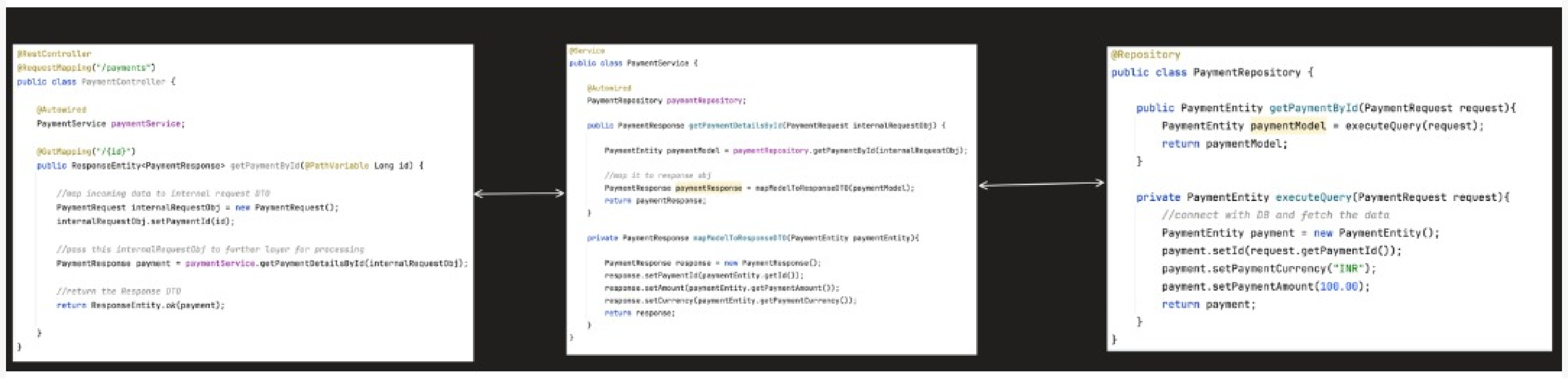
Group	com.conceptandcoding
Artifact	learningspringboot
Name	springboot application
Description	project for learning spring boot
Package name	com.conceptandcoding.learningspringboot
Packaging	[✓ Jar] ○ War
Java	○ 21 [✓ 17]

Dependencies ADD DEPENDENCIES... ⌘ + B

Spring Web WEB
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.



LAYERED ARCHITECTURE



```java
@RestController
@RequestMapping("/payments")
public class PaymentController {

    @Autowired
    PaymentService paymentService;

    @GetMapping("/{id}")
    public ResponseEntity<PaymentResponse> getPaymentById(@PathVariable Long id) {

        //map incoming data to internal request DTO
        PaymentRequest internalRequestObj = new PaymentRequest();
        internalRequestObj.setPaymentId(id);

        //pass this internalRequestObj to further layer for processing
        PaymentResponse payment = paymentService.getPaymentDetailsById(internalRequestObj);

        //return the Response DTO
        return ResponseEntity.ok(payment);

    }
}
```

```java
@Service
public class PaymentService {

    @Autowired
    PaymentRepository paymentRepository;

    public PaymentResponse getPaymentDetailsById(PaymentRequest internalRequestObj) {

        PaymentEntity paymentModel = paymentRepository.getPaymentById(internalRequestObj);

        //map it to response obj
        PaymentResponse paymentResponse = mapModelToResponseDTO(paymentModel);
        return paymentResponse;
    }

    private PaymentResponse mapModelToResponseDTO(PaymentEntity paymentEntity){

        PaymentResponse response = new PaymentResponse();
        response.setPaymentId(paymentEntity.getId());
        response.setAmount(paymentEntity.getPaymentAmount());
        response.setCurrency(paymentEntity.getPaymentCurrency());
        return response;
    }
}
```

```java
@Repository
public class PaymentRepository {

    public PaymentEntity getPaymentById(PaymentRequest request){
        PaymentEntity paymentModel = executeQuery(request);
        return paymentModel;
    }

    private PaymentEntity executeQuery(PaymentRequest request){
        //connect with DB and fetch the data
        PaymentEntity payment = new PaymentEntity();
        payment.setId(request.getPaymentId());
        payment.setPaymentCurrency("INR");
        payment.setPaymentAmount(100.00);
        return payment;
    }
}
```