Our customers are all over the world

MOBILE.
WEB.
BIG DATA.

Our commitement is to your success.

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ZYNK - FUTUREUP JAVA TRAINING

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Mobile apps. *Web*. **Big Data**

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SYNOPSIS

This document will cover the following topics:

1. Company history and portfolio presentation
2. Training process presentation
3. Server vs serverless
4. HTTP requests
5. Layered architecture
6. ORM
7. Q&A session

WHO ARE WE?

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WHO ARE WE?

ZYNK is a Romanian software development company specialized in building **multi-platform, scalable, and innovative software products.**

What makes us different?

- Small enough to be AGILE, big enough to build complex projects
- Successful track record of 100% delivering of offshore projects
- More than **100 projects delivered**

- Experts all web, mobile, and platform development

- Designing, building and maintaining complex, large scale, low latency, real-time or transactional systems (e.g. messaging platforms, LBS platforms, gaming platforms, highly transactional services)

Our vision

- Provide affordable high quality services
- Bring expertise in web, mobile and large scale distributed systems
- Provide end-to-end solutions.
- Quality vs. quantity
- Team cohesion and development
- Happy customers

WHAT ARE WE DOING?

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WHAT ARE WE DOING?

MOBILE APPS DEVELOPMENT

- Experience: We successfully delivered more than 50 complex mobile products on **iOS** and **Android**.
- Quality. Once we create an app no stone is left unturned in order to get rid of any bumps and glitches.
- A well rounded and efficient team, focused on technologies and UX.

Kotlin

Java

Swift

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WHAT ARE WE DOING?

WEB & PLATFORM DEVELOPMENT

- **Functional, scalable and secure**, the solutions we provide can fit any industry, and they deliver high-quality web apps for companies of all sizes and business models.
- Experience in building large **web applications** and **responsive web**
- Architectural principles: micro services, asynchronous messaging, REST, event driven architecture, complex event processing

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WHAT ARE WE DOING?

BIG DATA

- Experience in building and designing **large scale databases**
- Experience with designing **Big Data platforms**
- Experience in **web semantics** and **machine learning**
- **Data warehouse** design and integration

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WHAT ARE WE DOING?

OTHERS

- Virtual Reality (**VR**) and Augmented Reality (**AR**) apps
- Internet of Things (**IoT**) platforms

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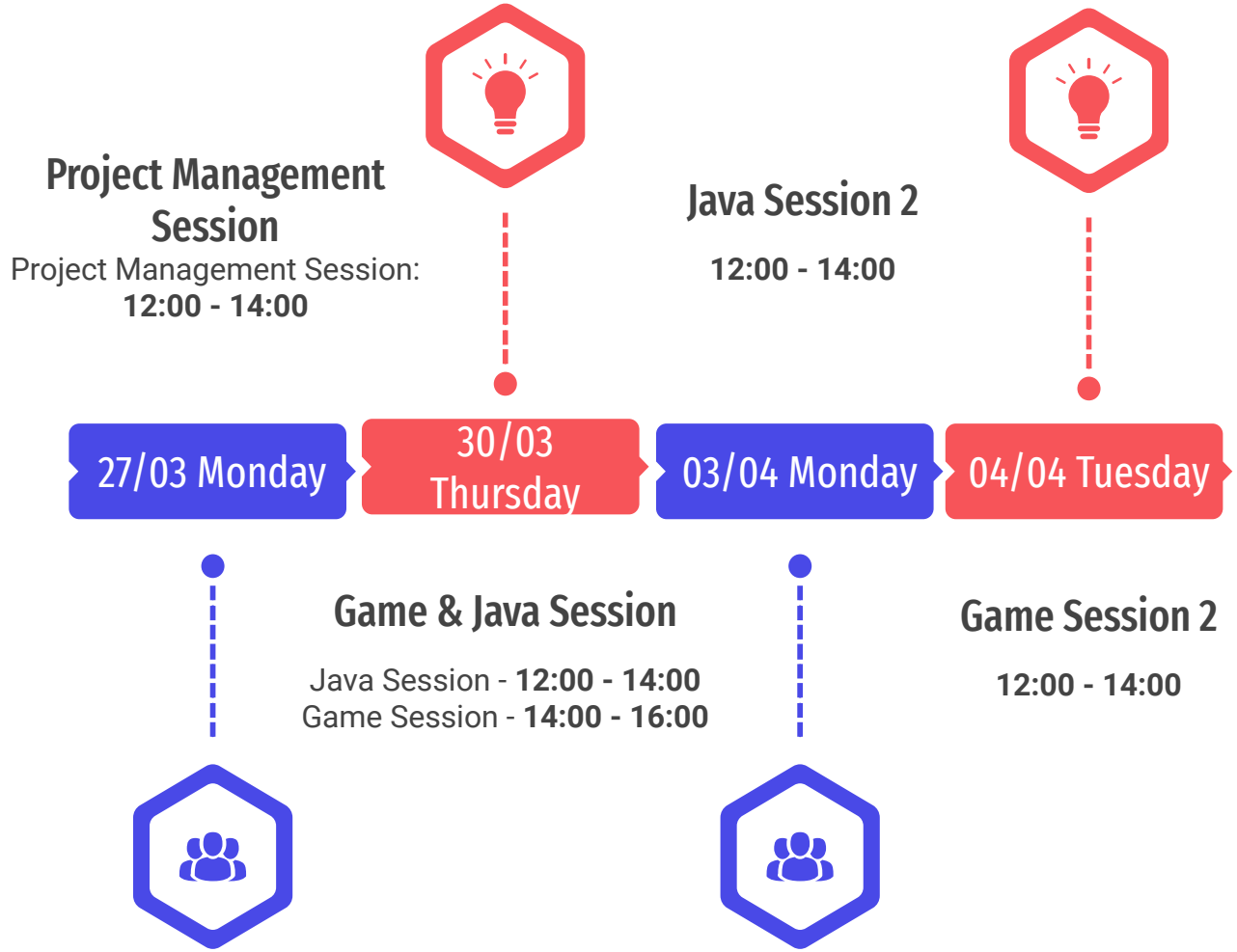
TRAINING PRESENTATION



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TRAINING PRESENTATION

TRAINING

Presentation

- Duration: 27th March - 4th April
- **Assignments deadline: 10th April**
- Training sessions on the following technologies:
    - Java
    - Game development:
- Each technology will have allocated two sessions of 2h
- The structure for the sessions will be:
    - Introduction into the basics of the technology
    - Demonstration of theoretical concepts implemented in an application
- In order to better comprehend the assignments, we advise students to participate in both sessions for the interested technology

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TRAINING PRESENTATION

TRAINING

Internship Opportunity

- Our company offers internship position on the following technologies:
  - Java
  - Game development
- The internship is paid and has a duration of 3 months
- The internships includes an introduction to technology standards, best practices and processes, mentorship from our technology leaders, working on real projects based on stakeholders' requirements, opportunity to participate in technology guilds, certifications and tutorial courses
- Extra curricular activities include: teambuilding, team outings, foosball

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TRAINING PRESENTATION

TRAINING

Homework Review and Candidates Selection

- **Deadline for submission of assignments is the 10th of April (included)**
- Each students shall receive a link to the ZYNK public repository from where he/she can fork the project
- The homework should be completed, published to a public repository and shared the repository link with the designated OSUBB volunteer
- Selected candidates will be contacted by the company representative and discuss the next step in the recruitment process

Backend applications

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BACKEND APPLICATIONS

Server

Traditional application models are frequently used in server-based architectures. In this strategy, the entire application is deployed on one server or a collection of servers.

- Full access to a physical server
- Even if internet is down, servers can be accessed on premise
- Data is stored securely and no third party has access
- Faster response time

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BACKEND APPLICATIONS

Simple server model

Reference: Server watch

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BACKEND APPLICATIONS

Serverless

Cloud technology involves using a network of remote servers to host, manage and process data rather than a local server.

- Infrastructure, configuration and support task are handled by a third party
- Serverless backends scale automatically on demand
- Faster to set up and run
- Cheaper than a server if the number of requests per second is low

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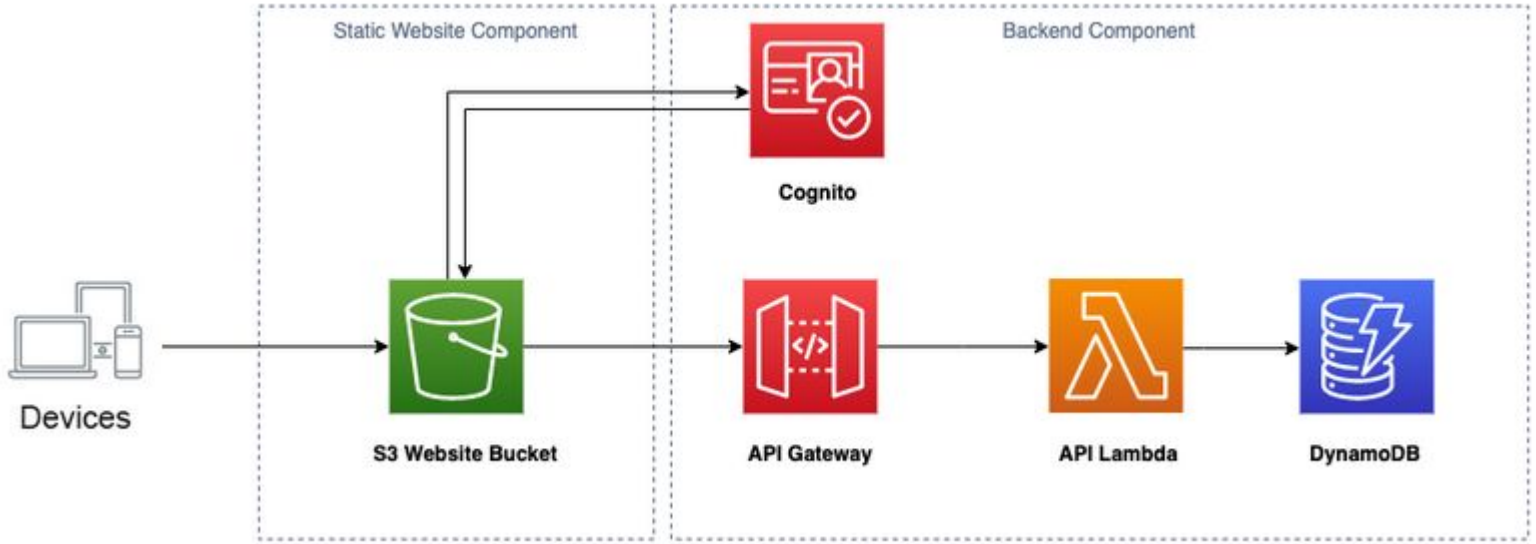
BACKEND APPLICATIONS

Simple amazon serverless model



Reference: AWS blog

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BACKEND APPLICATIONS

HTTP requests

HTTP is a protocol for fetching resources such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol, which means requests are initiated by the recipient

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BACKEND APPLICATIONS

/books

GET	/books	Lists all the books in the database
DELETE	/books/{bookId}	Deletes a book based on their id
POST	/books	Creates a Book
PUT	/books/{bookId}	Method to update a book
GET	/books/{bookId}	Retrieves a book based on their id

Reference: AWS blog

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BACKEND APPLICATIONS

```java
@GetMapping("/books")
public List<BookDto> getAllBooks() {
    return bookStoreService.getAllBooks();
}

@PostMapping("/books")
public void addNewBook(@Valid @RequestBody BookDto bookDto) {
    bookStoreService.addNewBook(bookDto);
}

@PutMapping("/books/{id}")
public void updateBook(@PathVariable Long id, @Valid @RequestBody BookDto bookDto) {
    bookStoreService.updateBook(id, bookDto);
}

@GetMapping("/books/{id}")
public BookDto getBookById(@PathVariable Long id) { return bookStoreService.getBookById(id); }
```

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BACKEND APPLICATIONS

HTTP request and response example

```
GET /articles?include=author HTTP/1.1
```

```
HTTP/1.1 200 OK
Content-Type: application/vnd.api+json

{
  "data": [{
    "type": "articles",
    "id": "1",
    "attributes": {
      "title": "JSON:API paints my bikeshed!",
      "body": "The shortest article. Ever.",
      "created": "2015-05-22T14:56:29.000Z",
      "updated": "2015-05-22T14:56:28.000Z"
    },
    "relationships": {
      "author": {
        "data": {"id": "42", "type": "people"}
      }
    }
  }]
}
```

HTTP response status codes

In HTTP/1.0 and since, the first line of the HTTP response is called the status line and includes a numeric status code and a textual reason phrase. The first digit of the status code defines its class:

- 1XX (informational)
- 2XX (successful)
- 3XX (redirect)
- 4XX (client error)
- 5XX (server error)

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BACKEND APPLICATIONS

Layered architecture

Common layers:

- Presentation layer
- Application layer
- Data access layer

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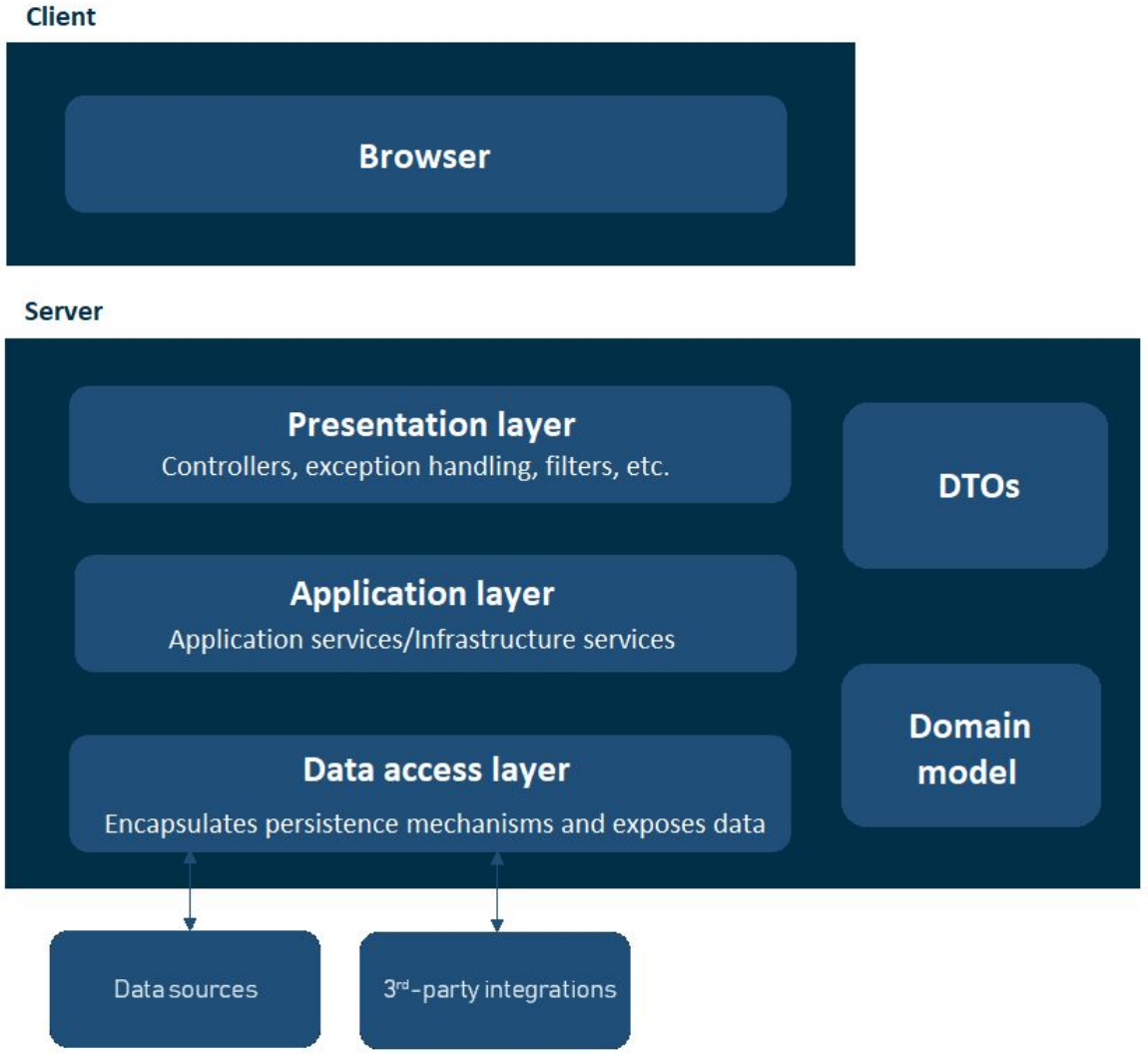
BACKEND APPLICATIONS



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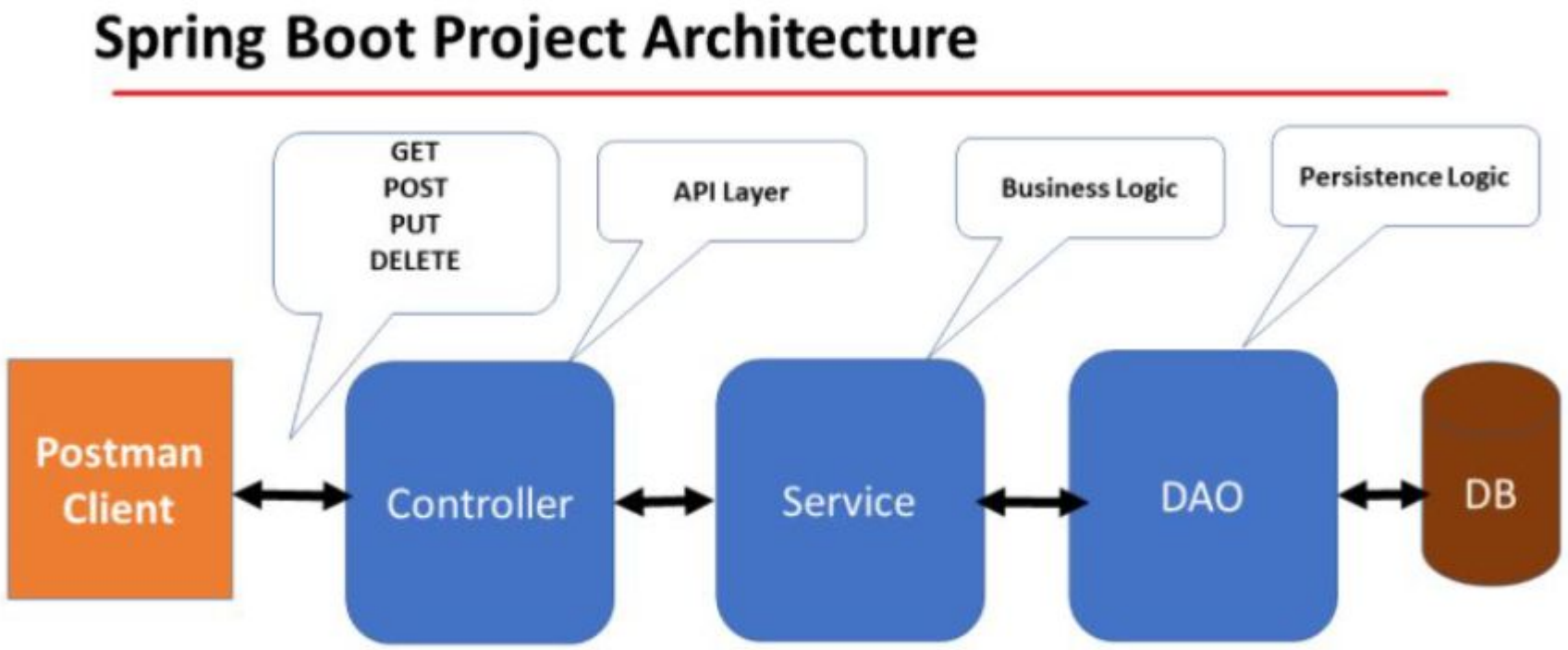
BACKEND APPLICATIONS



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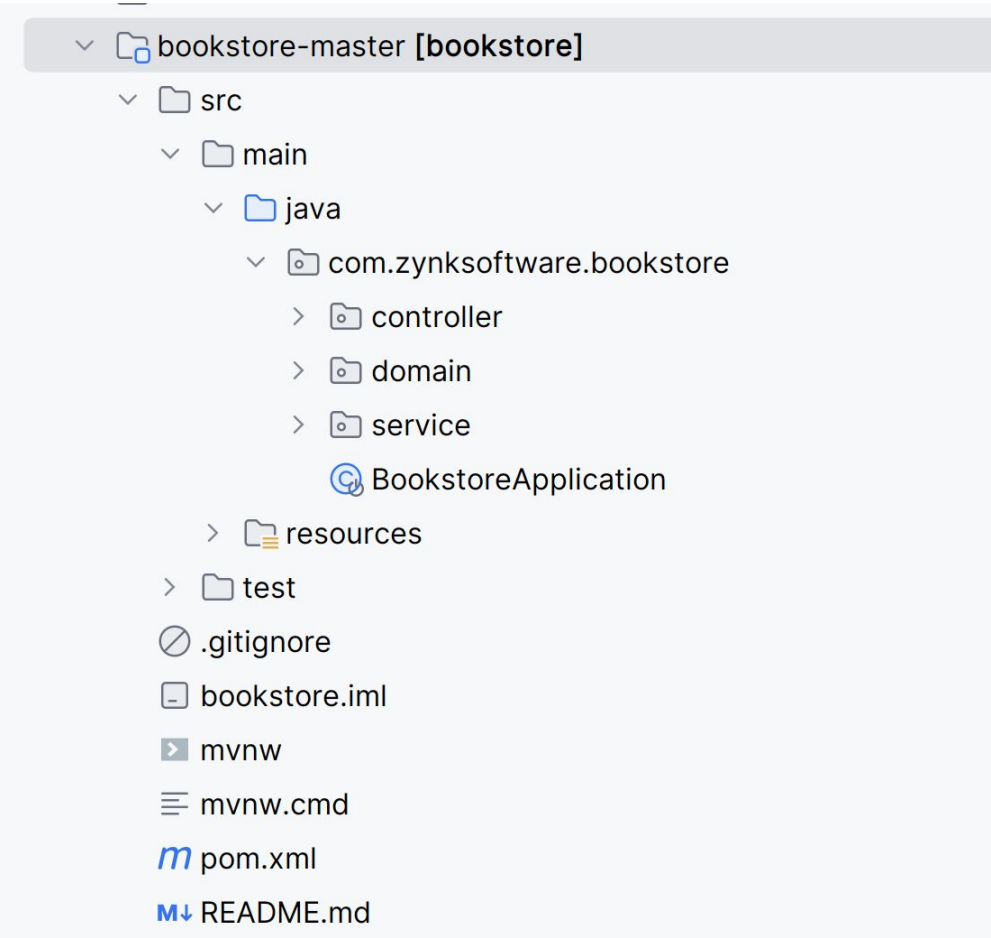
BACKEND APPLICATIONS

Project package model



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BACKEND APPLICATIONS

ORM

ORM stands for Object Relational Mapping. ORM is a technique for converting data between Java objects and relational databases.

- saves time and effort
- reduces development cost
- provides connectivity to the database
- development becomes more object oriented
- transaction management is made easy

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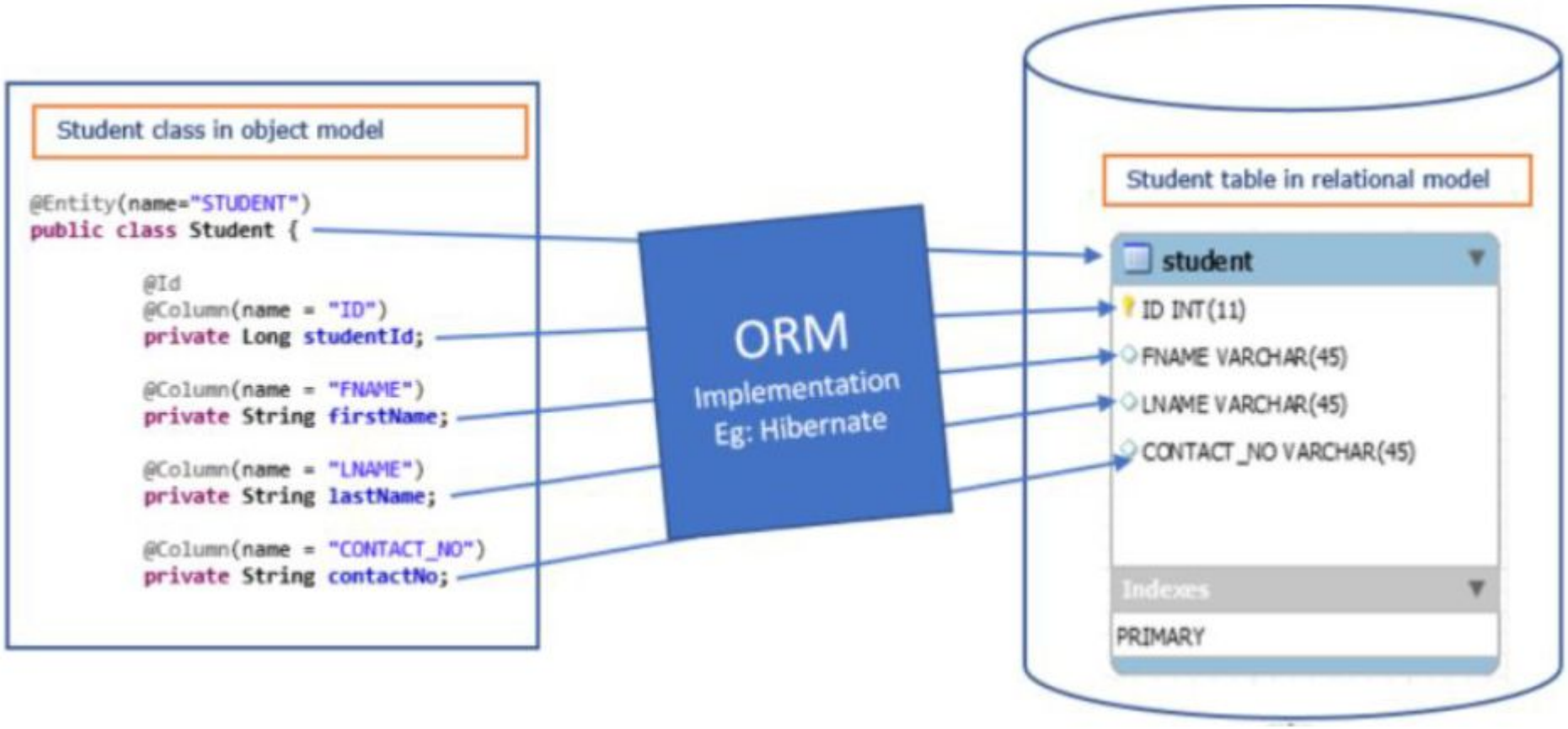
BACKEND APPLICATIONS



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REFERENCES

References:

- https://github.com/zynkware/training-futureup-java
- https://en.wikipedia.org/wiki/HTTP
- https://www.freecodecamp.org/news/how-to-setup-a-basic-serverless-backend-with-aws-lambda-and-api-gateway/

DO YOU HAVE QUESTIONS FOR US?

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CONTACT US

Contact us

You can submit any questions regarding the company and the internship positions to the following email address:

hr@zynksoftware.com

THANK YOU FOR YOUR ATTENTION!

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THANK YOU

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