E-commerce Infrastructure

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https://github.com/adityaputra/praktisimengajar-ecommerce

Our plan

8 classes with lecture, demo, and discussion – online, 90 minutes each

- Intro to Career in Tech & Introduction to E-commerce
- E-commerce Infrastructure
- E-commerce Business Models
- User Experience (UX) Design for E-commerce
- Digital Marketing Strategies
- E-commerce Analytics
- E-commerce Logistics and Fulfillment
- Legal and Ethical Considerations in E-commerce

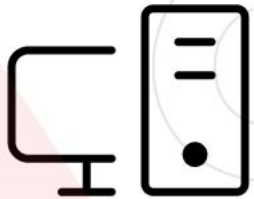
Our today's discussion

- General overview
- Server-side scripting languages for e-commerce: PHP, Python, Node.js
- Database management systems (DBMS) for e-commerce applications
- API Integrations
- Deployment strategies: continuous integration/continuous deployment (CI/CD), containerization (Docker), serverless architectures

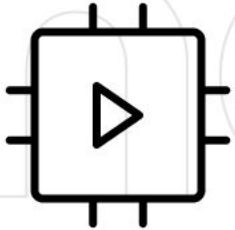
General **Overview**

Let us walk through a three tier architecture:

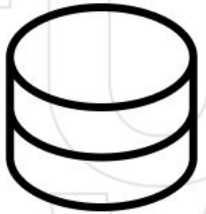
Web/presentation layer



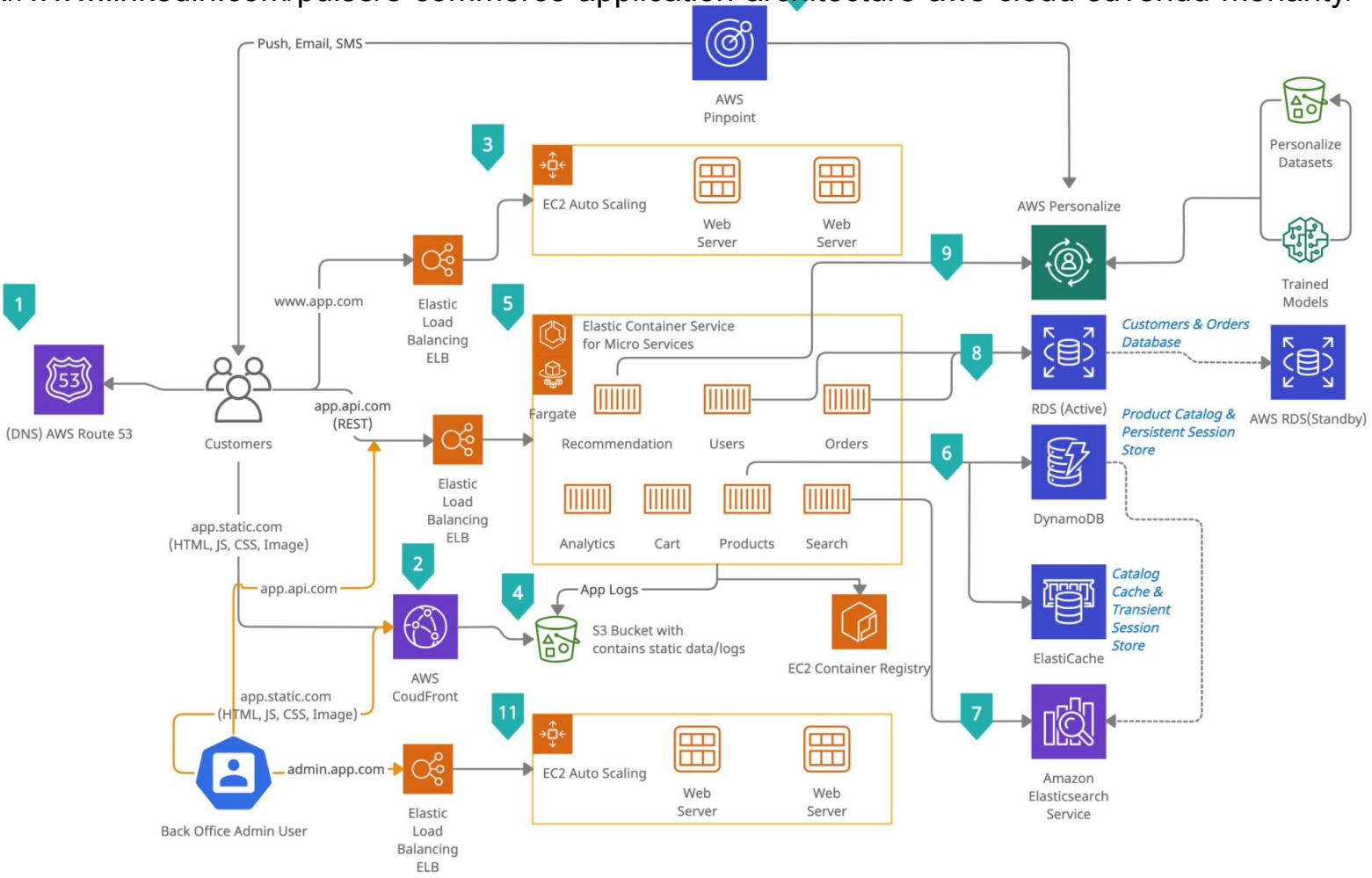
Application layer



Database layer



https://www.linkedin.com/pulse/e-commerce-application-architecture-aws-cloud-suvendu-mohanty/



Scripting Languages

JavaScript: Web interactivity, client-server versatility, asynchronous programming.

Python: Simplicity, readability, versatility.

C++: Power, efficiency, low-level control.

PHP: Server-side web development, ease of use, dynamic websites.

Java: Platform independence, robustness, object-oriented.

Databases

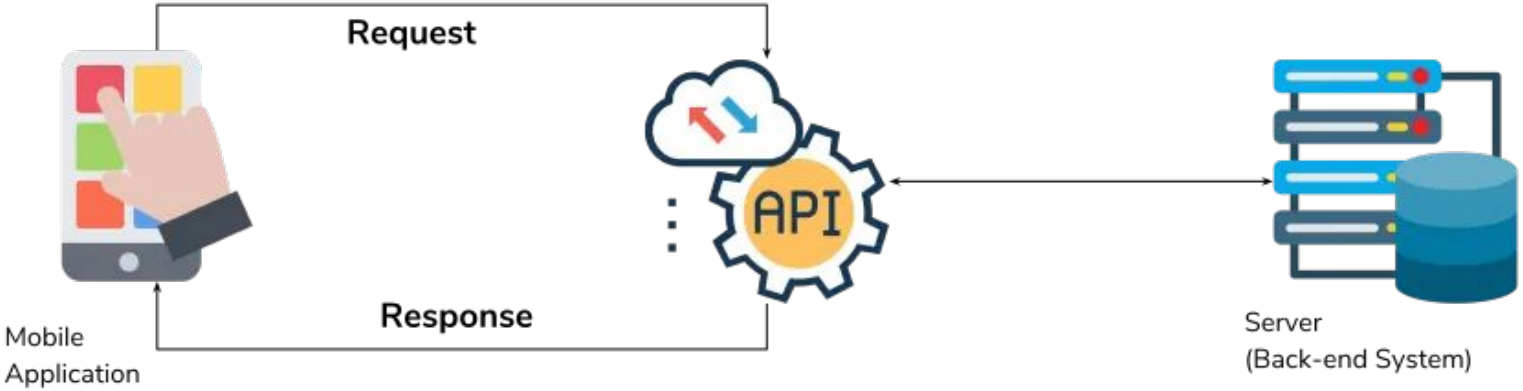
DBMS

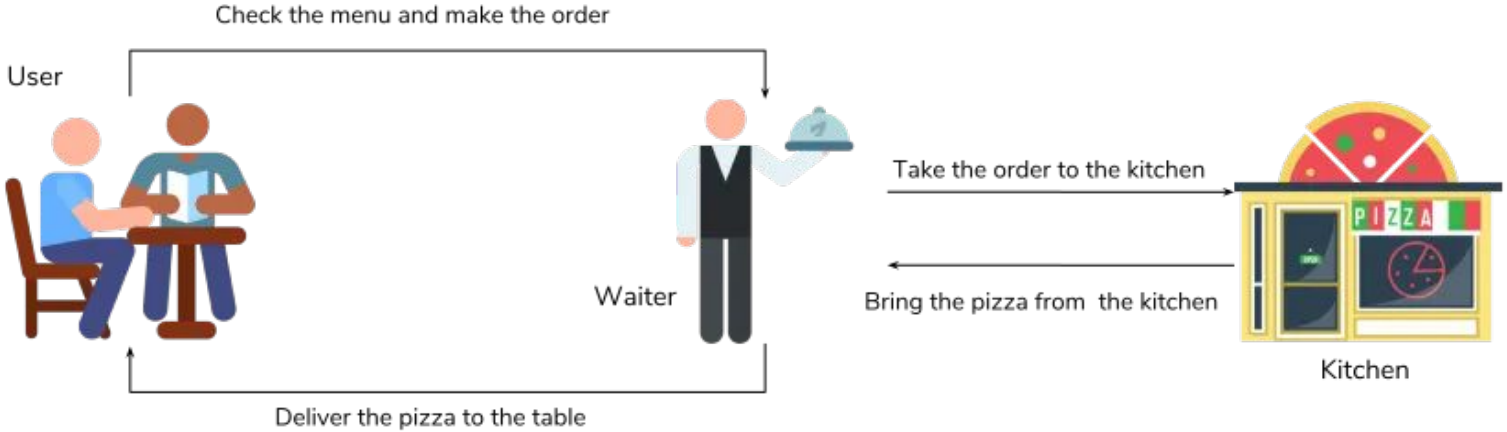
- Relational Databases:
  - MySQL: Used by WooCommerce.
  - PostgreSQL: Utilized by Shopify.
- NoSQL Databases:
  - MongoDB: Employed by eBay.
  - Cassandra: Used by Walmart.
- In-memory Databases:
  - Redis: Utilized by Alibaba.
  - Memcached: Employed by Etsy.
- Hybrid Solutions:
  - Amazon DynamoDB: Used by Amazon.
  - Magento: Integrates MySQL and Redis.

API integrations for e-commerce platforms

Ecommerce Integration

What is an API?


Request
API
Response
Mobile
Application
Server
(Back-end System)


Check the menu and make the order
User
Waiter
Take the order to the kitchen
Bring the pizza from the kitchen
PIZZA
Kitchen
Deliver the pizza to the table

Definition

API integrations in e-commerce involve connecting software systems via Application Programming Interfaces (APIs) for seamless data exchange and communication.

The purposes are to enhance functionality, streamline operations, and automate processes within the e-commerce ecosystem.

Examples

Payment Gateways: Secure transactions through integration with payment service providers.

Shipping Carriers: Real-time shipping rates and tracking information for efficient order fulfillment.

Third-Party Marketplaces: Expand reach by integrating with platforms like Amazon or eBay.

Inventory Management: Sync inventory and order data between e-commerce platforms and backend systems.

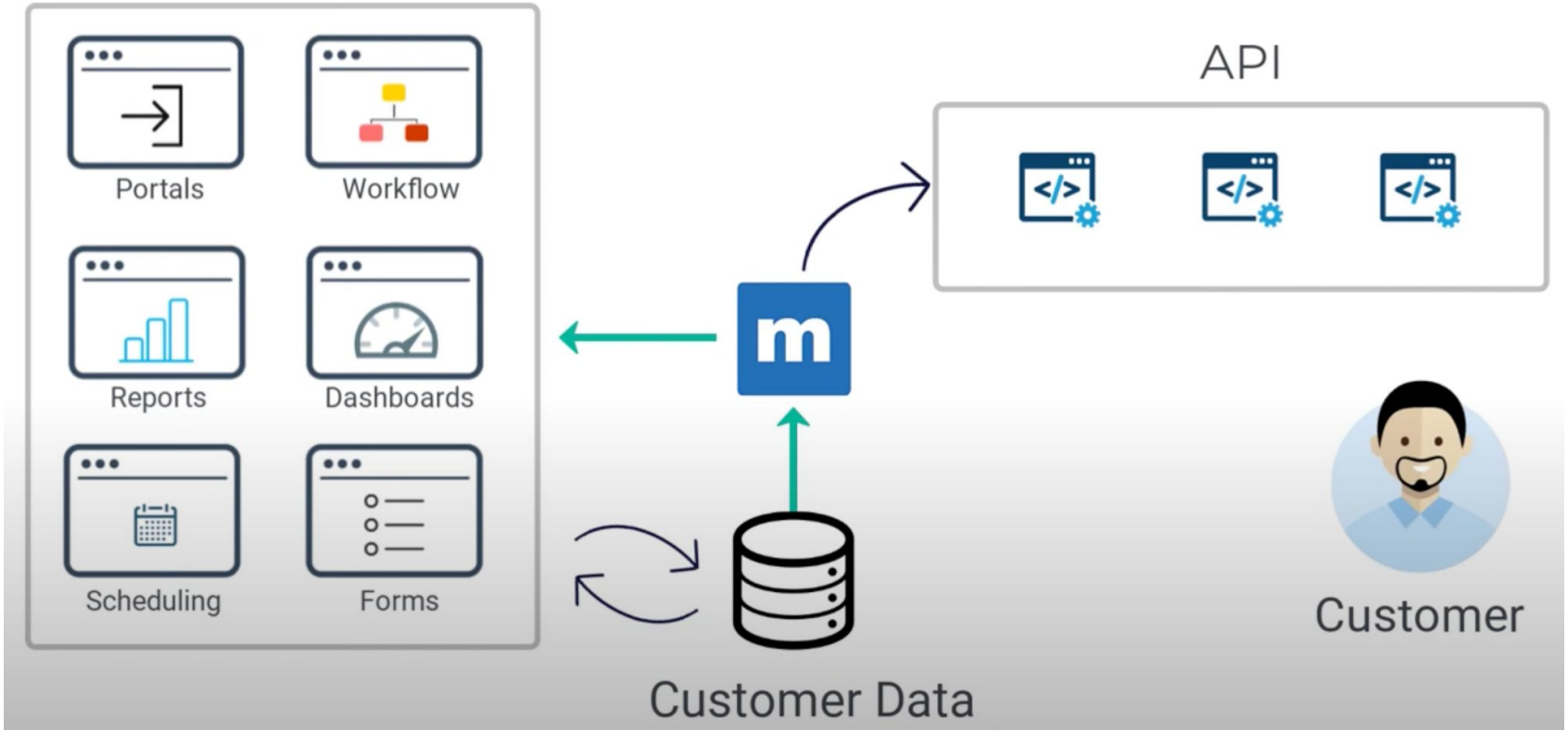
Building your own API

Customization: Tailor API endpoints to suit specific business needs and requirements.

Control: Maintain control over data access and functionality exposed through the API.

Integration Flexibility: Enable seamless integration with third-party systems and services.

Building your own API



Deployment Strategies

Demo

Assignments

Thank you

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