FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

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SOFTWARE DESIGN

BIE20203

Assignment 4 : Software Design Notation Deployment Diagram in Visual Paradigm

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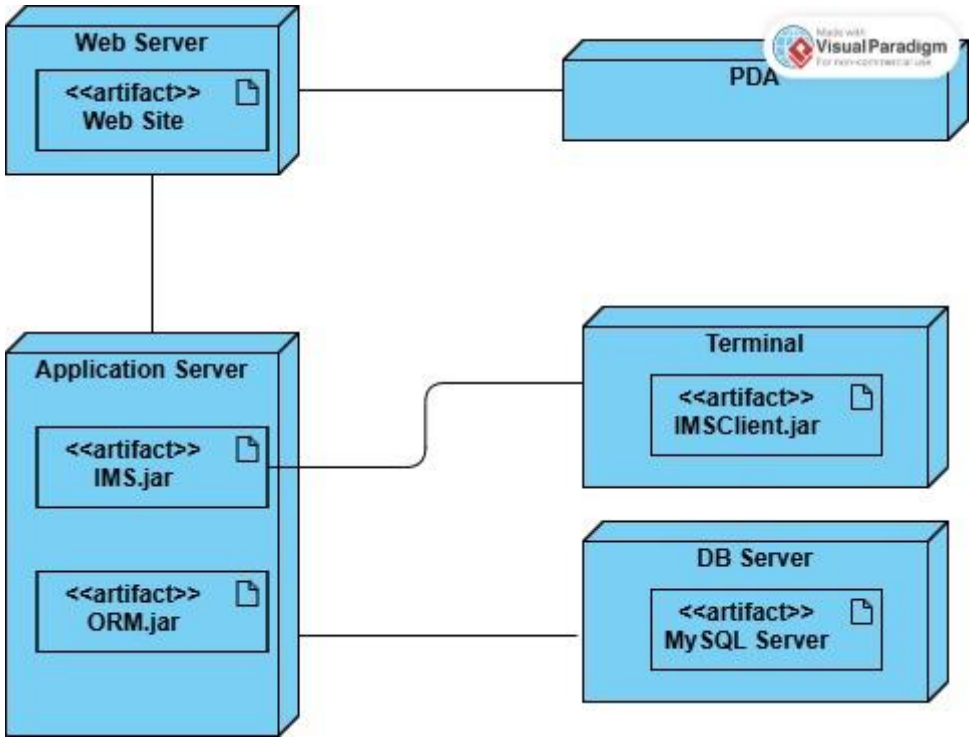

Figure 9

Figure 9 illustrates a basic deployment diagram that models the physical deployment of software artifacts onto hardware nodes within a computing environment. The diagram consists of two main nodes: **Client PC** and **Server**.

The **Client PC** represents a user's personal computer or terminal, where the **Web Browser** artifact is deployed. This browser enables users to interact with the system through a graphical user interface, typically via the internet or an intranet connection.

The **Server** node symbolizes a centralized system responsible for processing requests from clients. It contains two key artifacts: **Web Application** and **Database**. The **Web Application** component is responsible for handling client requests, processing data, and generating responses. The **Database** artifact stores critical system data, ensuring data persistence, integrity, and management.

The connection between the **Client PC** and **Server** nodes represents a communication link such as a network connection allowing the web browser on the client side to communicate with the web application and database on the server side.

This deployment setup is typical of a **client-server architecture**, which separates the user interface logic (handled by the client) from the data processing and storage logic (handled by the server). Such separation enhances system scalability, maintainability, and security.

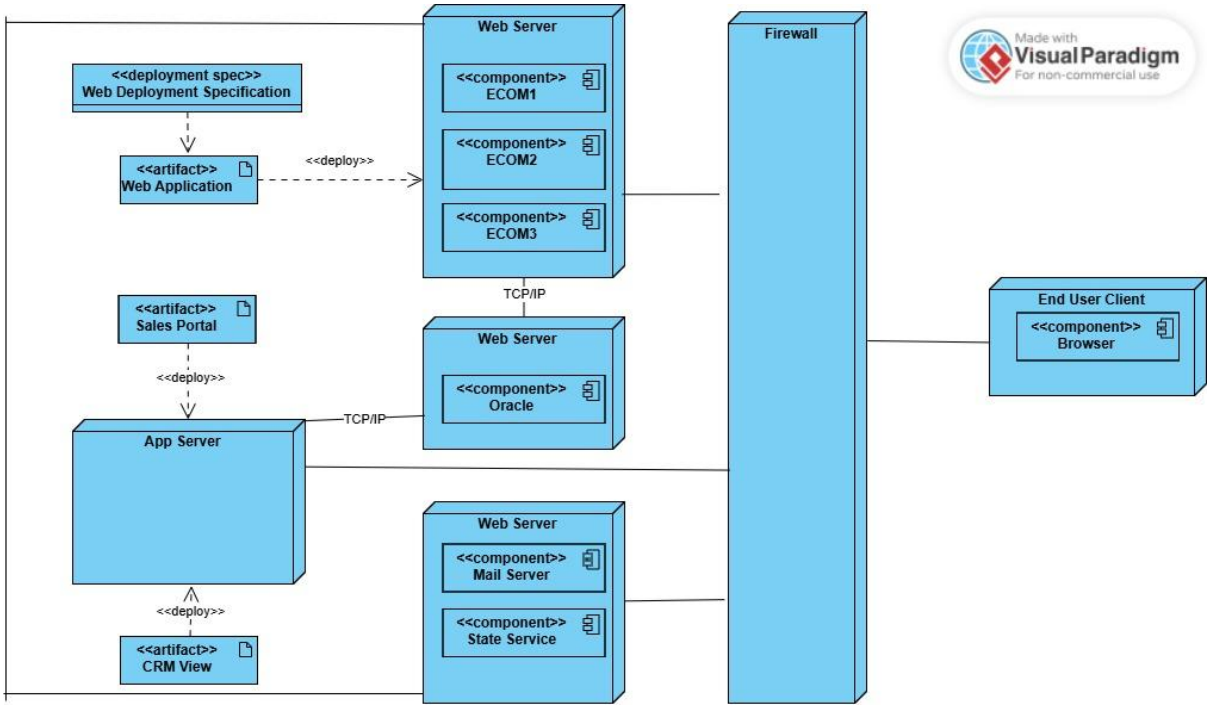

Figure 10 : Management Information System

Figure 10 illustrates the deployment structure for a **Management Information System (MIS)**, which follows a multi-tier client-server architecture to support administrative functions and data access across an organization.

The diagram includes several **hardware nodes** and the **software artifacts** deployed on them:

1. **Client PC Nodes**
   These nodes represent user computers that access the MIS. Each PC hosts a **Browser** artifact, which serves as the interface for users to interact with the

system. Through the browser, users send requests to the system and receive processed responses.

2. **Web Server Node**
   This node manages incoming client requests and forwards them to the application layer. It hosts the **Web Server** artifact, which contains server-side scripts and handles HTTP communication. It serves static content and routes dynamic content to the application server.

3. **Application Server Node**
   This node is responsible for business logic processing. It hosts the **MIS Application** artifact, which includes the core logic of the MIS system—handling processes like data analysis, processing transactions, and managing user sessions.

4. **Database Server Node**
   The database server node contains the **MIS Database** artifact. This is where all enterprise data is stored and managed, including user records, reports, financial data, and other critical information.

All nodes are connected via network communication links:

- **Client PCs connect to the Web Server** using internet or intranet protocols.
- **Web Server connects to the Application Server**, which processes data requests.
- **Application Server connects to the Database Server**, performing read/write operations to fulfill user queries or transactions.

This deployment architecture allows centralized data storage with distributed user access, making the system scalable, maintainable, and secure. It also separates user interface, application logic, and data management layers, which enhances performance and fault tolerance.