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# 1. Executive Summary

This report provides an overview of my prior knowledge regarding the architecture of a Web Information System (WIS) before studying this subject. Before engaging in this course, my understanding of software architecture was primarily general, without specific insights into the unique challenges and structures of WIS. I had some knowledge of traditional software architecture principles but lacked experience in distributed architectures, scalability strategies, and web-specific design patterns.

Web Information Systems require careful architectural planning to ensure efficiency, maintainability, and scalability. The rapid evolution of web technologies has led to complex architectures that integrate front-end, back-end, and data management systems effectively. Before this subject, my understanding was limited to high-level concepts, and I had not worked deeply with frameworks, cloud-based deployments, or microservices architectures.

Through this report, I aim to document my initial knowledge, highlight gaps, and set the foundation for structured learning in this domain.

# 2. Revision Table

| Revision number | Date | Description |
| --- | --- | --- |
| 1 | 17/02/2025 | The report was created |
|  |  |  |

# 3. Introduction

Web Information Systems (WIS) form the backbone of modern digital applications, supporting everything from simple web pages to large-scale enterprise platforms. Their architecture determines performance, reliability, and scalability. Before taking this subject, my knowledge of WIS architecture was limited to basic software design principles, lacking an understanding of frameworks, cloud computing, and best practices in web scalability.

This report will explore my prior understanding of general software architecture, web-specific considerations, and architectural patterns. The objective is to establish a baseline for further learning and improvement.

# 4. Prior knowledge of WIS architecture

Before taking this subject, my knowledge of WIS architecture was based on fundamental software design principles, but I lacked detailed understanding of web-specific architectures. I was familiar with the client-server model and basic architectural patterns such as MVC (Model-View-Controller), but I had limited experience with distributed systems, cloud-based deployments, and scalability techniques.

I was aware that WIS involve multiple layers, including front-end, back-end, and database management, and that they rely on APIs for communication between components. However, I had not explored concepts such as microservices, serverless computing, or containerization (e.g., Docker, Kubernetes). Additionally, my understanding of security concerns such as authentication, data encryption, and protection against web-based threats was minimal.

While I recognized the importance of structured architectural planning, my experience was mostly theoretical, with little hands-on exposure to industry-standard frameworks and best practices for WIS design and optimization.

# 5. The importance of structured learning in WIS architecture

Studying WIS architecture in a structured manner is essential for designing scalable, maintainable, and high-performance web applications. Through this course, I have begun to understand:

* The significance of microservices and distributed architectures in modern web applications.
* The role of cloud platforms like AWS, Azure, and Google Cloud in hosting WIS efficiently.
* The importance of optimizing database queries and caching mechanisms for performance improvements.

By following a systematic approach, I aim to develop a deeper understanding of architectural best practices and industry standards.

# **6. Conclusions**

Prior to studying this subject, my knowledge of WIS architecture was limited to general software design principles, with little exposure to web-specific architectural challenges and solutions. While I understood high-level concepts, I lacked practical knowledge of modern web frameworks, cloud deployments, and scalability techniques.

Through structured learning, I expect to build a solid foundation in WIS architecture, gaining insights into microservices, cloud computing, and security best practices. This will enhance my ability to design and develop efficient web applications in the future.

# **7. Bibliography**

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