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Systems Analysis and Design

INT 4202 - 1952-202310\_INT4203\_M

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**Week 12 Assignment**

**1) What are ERP and SCM systems? Briefly discuss these systems.**

ERP or Enterprise Resource Planning is software commonly used by companies in order to establish a large, company-wide strategy for the usage of IT which includes but is not limited to architecture of systems, standards for data, processing data, the network, as well as user interface design (Tilley, S. p. 317). ERP often describes specific hardware and software environments, which is called a platform, this platform ensures the connectivity and integration of systems which may include in-house software as well as commercial packages (Tilley, S. p. 317).

SCM, or supply chain management is often referred to as a extension of internal ERP systems which allows their suppliers and customers access to certain systems (Tilley, S. p. 318). For example, it is possible for a customer to order something which then results in the manufacturing system to schedule a work order and then if low on parts or needing certain parts not currently in stock to trigger a call for more parts from certain suppliers (Tilley, S. p. 318). SCM allows a company to have faster responses, better customer service, as well as lowered operating costs among other advantages (Tilley, S. p. 318).

Some examples of ERP systems are SAP, Oracle ERP, and Microsoft Dynamics, however, there are plenty of other ERP systems like JD Edwards, Odoo, and others.

**2) Describe client/server architecture including its components.**

Client/server architecture is a strategy used in order to distribute computing resources needed to perform functions (Tilley, S. p. 323). In a client/server architecture the processing power is divided between one or more networked clients and a central computer, the client will often handle the user interface while the server stores the data, provides data access, and database management functions (Tilley, S. p. 323). In regard to application logic, it is often divided between the server and its clients (Tilley, S. p. 323). An example of client/server architecture and how it interacts can be seen if we look at a client, this client is on a website and is able to submit requests for information from the server, the server then handles all necessary operations and functions and then responds to the client (Tilley, S. p. 323). It is also important to note that there are different types of architectures such as a mainframe architecture (Tilley, S. p. 323). Client/server architecture offers a level of flexibility, division of computing power, and support for changing business operations that other architecture may not be able to have (Tilley, S. p. 324). It is also possible for a service to be both the client and the server, this is service-oriented architecture, SOA (Tilley, S. p. 324). When thinking of cloud computing, this may be the most common example today of client/server architecture (Tilley, S. p. 324).

There are also different types of clients such as a fat, or thick client, and a thin client. A fat client handles most of the application processing logic at the client while the thin client has the server handle most of the processing logic at the server (Tilley, S. p. 324 - 325). However, today fat clients are often more popular because we have been able to reduce size requirements to handle computing with laptops and with tower desktops (Tilley, S. p. 325).

There are differing components to client/servers, one of these components we must consider are the tiers of the design. Within two-tier designs, the user interface is on the client, and all data resides on the server, while application logic can run on either or can be divided between them (Tilley, S. p. 325). Three-tier design includes the user interface running on the client and the data is stored on the client, like the two-tier design, however, there is a middle layer between the client and the server which is able to process and handle requests which translates them into data access commands which can the server is able to run (Tilley, S. p. 325). The middle layer is often called an application server as it handles application, or business logic (Tilley, S. p. 325). However, it is also possible to use more layers and tiers than just three, called n-tier designs (Tilley, S. p. 325). Within these multitier systems often special software will be used called middleware which allows the tiers to communicate more easily back and forth, also called glueware (Tilley, S. p. 326).

It is also important to look at the cost of different architectures and the tiers you need. It is important for systems to be able to be scalable, handle the processing needed to be done, as well as flexible (Tilley, S. p. 326).

References

Tilley, S. (2020). Systems analysis and design (12th ed.). Cengage.

I have neither given nor received unauthorized aid in completing this work, nor have I presented someone else's work as my own.

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