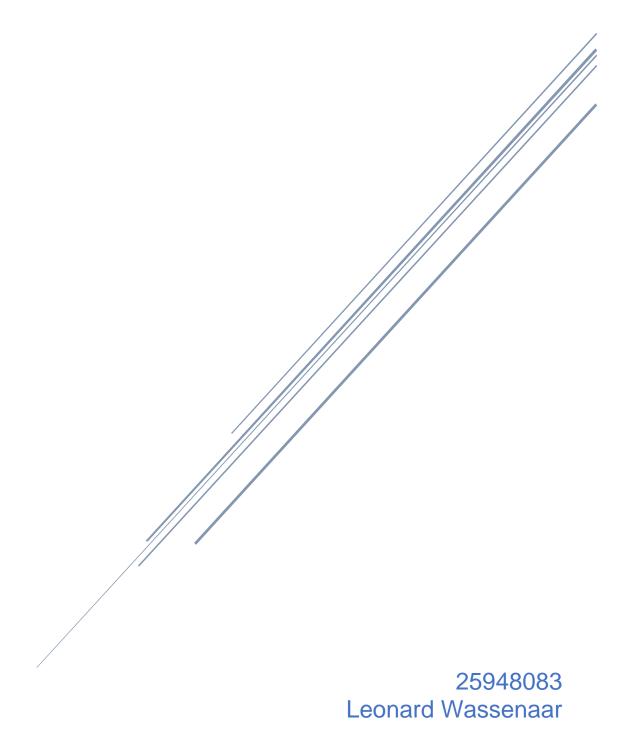
# **ITRW321**

SU6: Homework

Database Connectivity and Web Technology



# **Table of Contents**

1.	Database Connectivity:	. 2
2.	Database Internet Connectivity:	. 2
	Web to Database middleware: Server-side extension	. 3
	Web server interfaces:	. 3
	Client-Side Extensions:	. 4
	Web Application Servers:	. 4
	Web Database Development:	. 4
3.	Extensible Markup Language(XML)	. 4
	Document Type Definitions;	. 4
	XML Applications;	. 4
4.	Cloud Computing services:	. 5
	Cloud implementation differences:	. 5
	Characteristics of Cloud services	. 5
	Types of Cloud Services:	. 5
	SQL Data services	. 5

# Database Connectivity and Web Technology

## 1. Database Connectivity:

- A mechanism that enables programs to connect with data repositories.
- Database middleware- Act as an interface bridge between the application and database.
- Interface examples;
  - Native SQL connectivity Interface is produced by the vendor of the database.
  - Microsoft Open Database Connectivity Superset of SQL access group.
  - Data Access Objects OO API used to access MS access.
  - Remote Data Objects high level OO interface used to gain access to remote database servers.
  - Microsoft's Object Linking and Embedding for Database OO functionality for access to data that is structured or unstructured.
  - Microsoft's ActiveX Data Objects Data access framework of .net
  - Oracle's Java Database Connectivity An interface of a programming application that allows Java to connect to various data sources.

## 2. Database Internet Connectivity:

Internet Database Connectivity enables new, pioneering services that can do the following.

- Fast response time, by fetching new products and services from the market rapidly.
- Data services that is new and innovative increases customer satisfaction.
- Easy data access by using mobile devices over the internet.
- Yields information that is effective and timely.

#### Characteristics and Advantages of Internet Technologies:

Internet Characteristic:	Advantages:		
Hardware and Software	There is no need to develop		
independent	multiple platforms.		
	Has platform independence and is		
	portable.		
Common and Simple UI	Training time and cost is reduced.		
	End-user support cost is reduced.		
Location independence	New location-aware services are		
	created.		
	Dedicated connections costs and		
	requirements is reduced.		
Rapid development at manageable	Development time is reduced.		
costs	Tools are inexpensive.		

# Web to Database middleware: Server-side extension Web to database actions;

- 1. The client browser sends a request to the Web server.
- 2. The web server receives the request and validates it.
- 3. The middleware then reads, validates and executes the script.
- 4. The database server performs the query.
- 5. The middleware compiles the set of results.
- 6. The Web server yields the created HTML page.
- 7. The page is then displayed in the client local computer.

#### Web server interfaces:

• Common Gateway Interface – use script files to perform operations based on the parameters of the client which is passed on the Web server.

#### Client-Side Extensions:

Add functions to the Web browser such as:

- Plugins
- Java
- JavaScript
- ActiveX
- VBScript

#### Web Application Servers:

- Connect to the database and query a database from a web page.
- Data is presented in the web page using various formats.
- Dynamic web search pages can be created.
- Use simple and nested queries.

#### Web Database Development:

• LAMP components - Linux, Apache, MySQL and PHP

# 3. Extensible Markup Language(XML)

• A language used to represent and manipulate data elements.

#### Document Type Definitions;

- DTD
- XML schema
- XML schema definition

### XML Applications;

- B2B exchanges
- Legacy systems integration
- Web page development
- Database support

## 4. Cloud Computing services:

• Allows for the convenient access to shared computer resources

#### Cloud implementation differences:

- Public cloud
- Private cloud
- · Community cloud

#### Characteristics of Cloud services

- Infrastructure that is shared.
- Services is flexible and scalable.
- Service orientation.
- Managed operations.

#### Types of Cloud Services:

- Software as a service
- Platform as a service
- Infrastructure as a service

#### **SQL** Data services

- Provides relational data storage over a cloud.
- Uses a common programming interface.
- Hosted data management.