

ITRW321

SU6: Homework

Database Connectivity and Web Technology



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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 independent	There is no need to develop 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 costs	Development time is reduced. 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.

