Database knowledge Questionnaire

Page 1 / 2

Use of databases as part of the course or as the whole topic of the course will be collected from European VET institutions.

The information about the courses covering:
- introduction to database systems
- design and implementation of databases.

*Pakollinen

Please enter your:

Name: *

E-mail: *

VET institution: *

Country: *

BK.01 INTRODUCTORY TOPICS (comprehension level)

BK.01.01 Database Approach *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Limitations of the file-based approach					
2. Database, DBMS defined					
3. Components of the DBMS environment					
4. Roles in the DBMS environment					
5. Advantages and disadvantages of DBMSs					

BK.01.02 Database Environment *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. The three-level ANSI-SPARC architecture					
2. Data models (object, record, physical)					
3. Conceptual modeling					
4. Functions of a DBMS					
5. DBMS architectures (2-tier, 3-tier c/s)					

BK.04 CONCEPTUAL MODELING

BK.04.01 Entity-Relationship (ER) Diagram (Application Level) *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Entities/Entity Sets					
2. Relationships/Relationship Sets					
3. Key Constraints					
4. Participation Constraints					
5. Weak Entities					
6. IS-A Hierarchies					
7. Ternary Relationships					
8. Connection Trap					

BK.04.02 Unified Modeling Language (UML) Basics (Comprehension Level) *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Classes					
2. Objects					

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
3. Relationships					
4. Inheritance					

BK.07 CONCEPTUAL TO RELATIONAL SCHEMA MAPPING (application level)

BK.07.01 ER Sets to Relations *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. With constraints					
2. Without constraints					
3. Constraints: key- and participation-					
4. Weak entity sets					

BK.02 RELATIONAL MODEL (comprehension level)

BK.02.01 Relational Model Concepts and Languages *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Terminology and concepts					
2. Integrity constraints					
3. Views					
4. Overview of relational languages					

BK.03 NORMALIZATION (application level)

BK.03.01 Functional Dependencies and Normal Forms *

Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Purpose of normalization	○	○	○	○	○
2. Functional dependencies	○	○	○	○	○
3. 1NF	○	○	○	○	○
4. 2NF	○	○	○	○	○
5. 3NF	○	○	○	○	○

Jatka »

Database knowledge Questionnaire

*Pakollinen

BK.05 SQL (application level)

BK.05.01 Relational Schema Construction *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. CREATE TABLE: the CONSTRAINT clause					
2. Basic data types (numeric, character string, date, etc.)					
3. The NULL value					
4. ALTER TABLE					
5. DROP TABLE					

BK.05.02 Data Insertion and Updating *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. INSERT INTO (variations, where applicable)					
2. UPDATE / DELETE FROM					
3. The handling of NULL ‘values’					

BK.05.03 Data Processing and Retrieval *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. SELECT FROM					
2. Set operations: UNION, INTERSECT, EXCEPT					

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
3. Joins (INNER JOIN, LEFT OUTER JOIN, RIGHT OUTER JOIN)					
4. Duplicate rows elimination; the DISTINCT clause and the set-manipulation constructs (UNION ALL, INTERSECT, EXCEPT).					
5. Comparisons using NULL 'values'					

BK.05.04 Nested Queries *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Nested SELECT statements					
2. IN and EXISTS clauses. Correlated nested queries.					

BK.05.05 Grouping and Aggregation *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. The GROUP BY and HAVING clauses					
2. Aggregation (e.g. COUNT(*), AVG(), SUM(), MIN(), MAX(), etc)					

BK.06 DATA INTEGRITY (application level)

BK.06.01 Entity and Referential Integrity *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Primary and alternate(unique) keys					

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
2. Foreign keys					
3. Check / Domain constraints					
4. The CONSTRAINT clause					
5. Enterprise constraints by TRIGGERs					

BK.08 SYSTEM CATALOG (comprehension level)

BK.08.01 Database Metadata *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Tables, columns, indexes, constraints, etc.					
2. Cardinalities					
3. Users, accounting and authorization information					

BK.09 SECURITY CONTROL

BK.09.01 Security Threats (Comprehension Level) *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Threats					

BK.09.02 Security Countermeasures (Knowledge Level) *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Authentication (SQL / domain) User /Authorization ID					
2. System/Server privileges					
3. Roles					
4. Encryption					

BK.09.03 Access Control (Comprehension Level) *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Schemas					
2. Object owner					
3. Views					
4. Object access privileges					
5. GRANT / REVOKE					

BK.09.04 Privacy (Comprehension Level) *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. Legal Aspects					
2. Technical Support for Privacy					

BK.10 DATA STORAGE

BK.10.01 Memory Management *
Expected learning outcomes. Student...

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
1. DBMS-to-OS File System interface					

	not taught at all	knows the basics	fulfills basic tasks	solves problems	applies knowledge in new situations
2. Buffer management and page replacement policies	○	○	○	○	○
3. DBMS vs. OS buffer management	○	○	○	○	○

Thank you for your time!

Thank you for filling the questionnaire.

« Takaisin Lähetä