Northcentral Technical College Logo

## Northcentral Technical College

10-152-331 Database Concepts

# Course Design

### Course Information

|  |  |  |
| --- | --- | --- |
|  | Description | Introduces relational database and XML data storage concepts, with an emphasis on database design, normalization and query creation. Learners will define and use XML files, design databases and write SQL SELECT statements. Additional topics include: database terminology, data types, simple primary/foreign keys, one-to-many relationships and entity relationship diagrams (ERDs). |
|  | Instructional Level | 10 Associate Degree |
|  | Total Credits | 3.00 |
|  | Total Hours | 72.00 |

Types of Instruction

|  |  |
| --- | --- |
| Instruction Type | Credits/Hours |
| lab | 1/36 |
| lecture | 2/36 |

Textbooks

|  |
| --- |
| Beginning Microsoft SQL Server 2012 Programming, Publisher: Wiley ISBN: 978-1-118-23621-5 |
| XML Book: Beginning XML, 5th Edition, Publisher: Wrox ISBN: 978-1-118-16213-2 |

### Soft Skills

|  |  |
| --- | --- |
| 1. | Act responsibly |
| 2. | Communicate effectively |
| 3. | Demonstrate integrity |
| 4. | Think critically and creatively |
| 5. | Work productively |

### Course Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully list common data types |
|  | learner can successfully define the components of a relational database |
|  | learner can successfully assign appropriate data types to data elements |
|  | learner can successfully associate database terms with corresponding definitions |
|  | learner can successfully explain the value and typical use of a database |
|  | Learning Objectives |
|  | Determine common data types |
|  | Determine the components of a relational database |
|  | Assign appropriate data types to data elements |
|  | Associate database terms with corresponding definitions |
|  | Explain the value and typical use of a database |
| 2. | Use a SQL-based development toolset |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create database objects using the Microsoft SQL Management Studio (SSMS) designer |
|  | learner can successfully script objects using the SSMS designer |
|  | learner can successfully locate components within the SSMS designer |
|  | learner can successfully run scripts within the SSMS designer |
|  | learner can successfully debug scripts within the SSMS designer |
|  | Learning Objectives |
|  | Create database objects using the Microsoft SQL Management Studio (SSMS) designer |
|  | Script objects using the SSMS designer |
|  | Locate components within the SSMS designer |
|  | Run scripts within the SSMS designer |
|  | Debug scripts within the SSMS designer |
| 3. | Create relational database objects with relationships and constraints |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create a database using the Microsoft SQL Management Studio (SSMS) designer |
|  | learner can successfully create a table using the SSMS designer |
|  | learner can successfully discuss the impact of database design on the ability to query data |
|  | learner can successfully discuss the role of constraints in maintaining data integrity |
|  | Learning Objectives |
|  | Create a database using the Microsoft SQL Management Studio (SSMS) designer |
|  | Create a table using the SSMS designer |
|  | Explain the impact of database design on the ability to query data |
|  | Explain the role of constraints in maintaining data integrity |
| 4. | Write SQL SELECT statements |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully identify components of a Structured Query Language (SQL) SELECT statement |
|  | learner can successfully identify syntax errors in flawed SQL SELECT statements |
|  | learner can successfully write syntactically-correct SQL SELECT statements |
|  | learner can successfully write basic SQL SELECT statements to retrieve data from a single table |
|  | learner can successfully write basic SQL SELECT statements to join data from multiple tables |
|  | learner can successfully discuss optimization of SQL select statements |
|  | Learning Objectives |
|  | Identify components of a Structured Query Language (SQL) SELECT statement |
|  | Identify syntax errors in flawed SQL SELECT statements |
|  | Write syntactically-correct SQL SELECT statements |
|  | Write basic SQL SELECT statements to retrieve data from a single table |
|  | Write basic SQL SELECT statements to join data from multiple tables |
|  | Determine optimization of SQL select statements |
| 5. | Write SQL INSERT, UPDATE, and DELETE statements |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully identify components of a SQL Create/Read/Update/Delete (CRUD) statements |
|  | learner can successfully identify syntax errors in flawed SQL CRUD statements |
|  | learner can successfully write syntactically-correct SQL CRUD statements |
|  | learner can successfully write basic SQL INSERT statements |
|  | learner can successfully write basic SQL DELETE statements |
|  | learner can successfully write basic SQL UPDATE statements |
|  | Learning Objectives |
|  | Identify components of a SQL Create/Read/Update/Delete (CRUD) statements |
|  | Identify syntax errors in flawed SQL CRUD statements |
|  | Write syntactically-correct SQL CRUD statements |
|  | Write basic SQL INSERT statements |
|  | Write basic SQL DELETE statements |
|  | Write basic SQL UPDATE statements |
| 6. | Install and configure a SQL server |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | learner can successfully install SSMS |
|  | learner can successfully configure SSMS |
|  | learner can successfully connect to databases using SSMS |
|  | Learning Objectives |
|  | Install SSMS |
|  | Configure SSMS |
|  | Connect to databases using SSMS |
| 7. | Model data using Entity Relationship Diagrams |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create basic entity diagram using Microsoft Visio |
|  | learner can successfully create full entity relationship diagram (ERD) using Microsoft Visio |
|  | Learning Objectives |
|  | Create basic entity diagram using Microsoft Visio |
|  | Create full entity relationship diagram (ERD) using Microsoft Visio |
| 8. | Create normalized tables |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create normalized tables in the 1st, 2nd, & 3rd normal form |
|  | learner can successfully discuss and communicate the differences in normalization |
|  | learner can successfully explain when a table is considered normalized |
|  | Learning Objectives |
|  | Create normalized tables in the 1st, 2nd, & 3rd normal form |
|  | Explain the differences in normalization |
|  | Explain when a table is considered normalized |
| 9. | Create structured XML documents |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | learner can successfully create structured XML documents |
|  | learner can successfully explain the purpose of XML documents |
|  | learner can successfully design and define XML tags |
|  | learner can successfully populate XML documents with data |
|  | Learning Objectives |
|  | Create structured XML documents |
|  | Explain the purpose of XML documents |
|  | Design and define XML tags |
|  | Populate XML documents with data |
| 10. | Create an XML document object model |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully explain the structure and elements XML |
|  | learner can successfully demonstrate the use of XML hierarchy |
|  | learner can successfully write XML syntax |
|  | Learning Objectives |
|  | Explain the structure and elements XML |
|  | Demonstrate the use of XML hierarchy |
|  | Write XML syntax |
| 11. | Present database content in a professional and organized manner |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully write documents using correct grammar and punctuation |
|  | learner can successfully cite sources using APA formatting |
|  | learner can successfully demonstrate organized thoughts and process flow |
|  | learner can successfully present content in organized form verbally |
|  | Learning Objectives |
|  | Write documents using correct grammar and punctuation |
|  | Cite sources using APA formatting |
|  | Demonstrate organized thoughts and process flow |
|  | Use strong oral presentation skills to convey content in an organized manner |

### Grading Information

Course Grading Information Letter % or Points needed to achieve grade  
Grade \*All competencies must be met to earn a C or above  
A >= 92% and has met all course competencies  
A- >= 90% and has met all course competencies  
B+ >= 87% and has met all course competencies  
B >= 83% and has met all course competencies  
B- >= 80% and has met all course competencies  
C+ >= 77% and has met all course competencies  
C >= 70% and has met all course competencies  
D >= 60% and/or has not met all course competencies  
F < 60% and has not met all course competencies  
  
Late Work  
A critical component of success in the IT is the ability to meet deadlines. Therefore, we will model this component in this course. Missing/late work will incur the following penalties:  
-    Failure to submit all required work on time during the first two weeks of the course will result in your removal from the course with a grade of "NS" (no-show).  
-    20% will be deducted if work is submitted up to two weeks late.  
-    Work submitted more than two weeks late will not receive any credit.  
-    Late work during the last two weeks of class will not receive any credit.  
-    No late quizzes will be accepted.  
-    No late tests will be accepted except in extreme circumstances or having made prior arrangements.  
-    Tests which do not initially receive a passing grade must be retaken until a passing grade is achieved.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Assessment Type** | **Quantity** | **Required to Pass\*** | **Points** | **Weight** |
| **Lab Activities** | 14 | 75% | 140 | 23% |
| **Assignments** | 27 | 100% | 360 | 58% |
| **Quizzes** | 5 | 100% | 60 | 10% |
| **Discussion Boards** | 6 | 100% | 60 | 10% |
| **Total** | 53 |  | 620 | 100% |

\* Note: Even if your raw score would otherwise yield a grade of "C" or better, you must complete the listed percentages of assessment activities in each category to receive a passing grade in this course.

|  |
| --- |
| Metadata Tags |
| Data SQL  DML DDL XML normalized ERD Entity Relationship Diagram constraints DOM Document Object Model |

### Course Learning Plans and Performance Assessment Tasks

Lab Activity

Directions

Complete the lab assignment by following along with the instructor-lead, in-class activities. Submit the resulting files via Blackboard before 11:00 PM on the date due.  
  
Note: The criteria that will apply to this assessment are determined by the competencies being assessed. By the end of this course, you will have been assessed on all of the criteria which are included in the scoring guide.

|  |  |
| --- | --- |
| Environment | Lab |

Evaluator(s)

Instructor

Target Course Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
| 2. | Use a SQL-based development toolset |
| 3. | Create relational database objects with relationships and constraints |
| 4. | Write SQL SELECT statements |
| 5. | Write SQL INSERT, UPDATE, and DELETE statements |
| 6. | Install and configure a SQL server |
| 7. | Model data using Entity Relationship Diagrams |
| 8. | Create normalized tables |
| 9. | Create structured XML documents |
| 10. | Create an XML document object model |
| 11. | Present database content in a professional and organized manner |

### Scoring

Rating Scale

|  |  |
| --- | --- |
| Value | Description |
| 5 | Masterful |
| 4 | Skilled |
| 3 | Able |
| 2 | Developing |
| 1 | Novice |
| 0 | Unskilled |

Scoring Standard

You must earn a minimum rating of "3" on each criterion to successfully complete this assessment.

### Scoring Guide

|  |  |  |
| --- | --- | --- |
|  | Criteria | Ratings |
| 1. | Use data terminology, concepts, and data types | 5 4 3 2 1 0 |
| 2. | learner can successfully list common data types | 5 4 3 2 1 0 |
| 3. | learner can successfully define the components of a relational database | 5 4 3 2 1 0 |
| 4. | learner can successfully assign appropriate data types to data elements | 5 4 3 2 1 0 |
| 5. | learner can successfully associate database terms with corresponding definitions | 5 4 3 2 1 0 |
| 6. | Use a SQL-based development toolset | 5 4 3 2 1 0 |
| 7. | learner can successfully create database objects using the Microsoft SQL Management Studio (SSMS) designer | 5 4 3 2 1 0 |
| 8. | learner can successfully script objects using the SSMS designer | 5 4 3 2 1 0 |
| 9. | learner can successfully locate components within the SSMS designer | 5 4 3 2 1 0 |
| 10. | learner can successfully run scripts within the SSMS designer | 5 4 3 2 1 0 |
| 11. | learner can successfully debug scripts within the SSMS designer | 5 4 3 2 1 0 |
| 12. | Create relational database objects with relationships and constraints | 5 4 3 2 1 0 |
| 13. | learner can successfully create a database using the Microsoft SQL Management Studio (SSMS) designer | 5 4 3 2 1 0 |
| 14. | learner can successfully create a table using the SSMS designer | 5 4 3 2 1 0 |
| 15. | Write SQL SELECT statements | 5 4 3 2 1 0 |
| 16. | learner can successfully identify components of a Structured Query Language (SQL) SELECT statement | 5 4 3 2 1 0 |
| 17. | learner can successfully identify syntax errors in flawed SQL SELECT statements | 5 4 3 2 1 0 |
| 18. | learner can successfully write syntactically-correct SQL SELECT statements | 5 4 3 2 1 0 |
| 19. | learner can successfully write basic SQL SELECT statements to retrieve data from a single table | 5 4 3 2 1 0 |
| 20. | learner can successfully write basic SQL SELECT statements to join data from multiple tables | 5 4 3 2 1 0 |
| 21. | Write SQL INSERT, UPDATE, and DELETE statements | 5 4 3 2 1 0 |
| 22. | learner can successfully identify components of a SQL Create/Read/Update/Delete (CRUD) statements | 5 4 3 2 1 0 |
| 23. | learner can successfully identify syntax errors in flawed SQL CRUD statements | 5 4 3 2 1 0 |
| 24. | learner can successfully write syntactically-correct SQL CRUD statements | 5 4 3 2 1 0 |
| 25. | learner can successfully write basic SQL INSERT statements | 5 4 3 2 1 0 |
| 26. | learner can successfully write basic SQL DELETE statements | 5 4 3 2 1 0 |
| 27. | learner can successfully write basic SQL UPDATE statements | 5 4 3 2 1 0 |
| 28. | Install and configure a SQL server | 5 4 3 2 1 0 |
| 29. | learner can successfully install SSMS | 5 4 3 2 1 0 |
| 30. | learner can successfully configure SSMS | 5 4 3 2 1 0 |
| 31. | learner can successfully connect to databases using SSMS | 5 4 3 2 1 0 |
| 32. | Model data using Entity Relationship Diagrams | 5 4 3 2 1 0 |
| 33. | learner can successfully create basic entity diagram using Microsoft Visio | 5 4 3 2 1 0 |
| 34. | learner can successfully create full entity relationship diagram (ERD) using Microsoft Visio | 5 4 3 2 1 0 |
| 35. | Create normalized tables | 5 4 3 2 1 0 |
| 36. | learner can successfully create normalized tables in the 1st, 2nd, & 3rd normal form | 5 4 3 2 1 0 |
| 37. | learner can successfully discuss and communicate the differences in normalization | 5 4 3 2 1 0 |
| 38. | learner can successfully explain when a table is considered normalized | 5 4 3 2 1 0 |
| 39. | Create structured XML documents | 5 4 3 2 1 0 |
| 40. | learner can successfully create structured XML documents | 5 4 3 2 1 0 |
| 41. | learner can successfully explain the purpose of XML documents | 5 4 3 2 1 0 |
| 42. | learner can successfully design and define XML tags | 5 4 3 2 1 0 |
| 43. | learner can successfully populate XML documents with data | 5 4 3 2 1 0 |
| 44. | Create an XML document object model | 5 4 3 2 1 0 |
| 45. | learner can successfully demonstrate the use of XML hierarchy | 5 4 3 2 1 0 |
| 46. | learner can successfully write XML syntax | 5 4 3 2 1 0 |
| 47. | Present database content in a professional and organized manner | 5 4 3 2 1 0 |
| 48. | learner can successfully write documents using correct grammar and punctuation | 5 4 3 2 1 0 |
| 49. | learner can successfully demonstrate organized thoughts and process flow | 5 4 3 2 1 0 |

Performance Assignment

Directions

Complete the assignment by following the instructions contained within the appropriate Blackboard Learning Plan. Submit the resulting files via Blackboard before 11:00 PM on the date due.

Note: The criteria that will apply to this assessment are determined by the competencies being assessed. By the end of this course, you will have been assessed on all of the criteria which are included in the scoring guide.

|  |  |
| --- | --- |
| Environment | Outside Assignment |

Evaluator(s)

Instructor

Target Course Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
| 2. | Use a SQL-based development toolset |
| 3. | Create relational database objects with relationships and constraints |
| 4. | Write SQL SELECT statements |
| 5. | Write SQL INSERT, UPDATE, and DELETE statements |
| 6. | Install and configure a SQL server |
| 7. | Model data using Entity Relationship Diagrams |
| 8. | Create normalized tables |
| 9. | Create structured XML documents |
| 10. | Create an XML document object model |
| 11. | Present database content in a professional and organized manner |

### Scoring

Rating Scale

|  |  |
| --- | --- |
| Value | Description |
| 5 | Masterful |
| 4 | Skilled |
| 3 | Able |
| 2 | Developing |
| 1 | Novice |
| 0 | Unskilled |

Scoring Standard

You must earn a minimum rating of "3" on each criterion to successfully complete this assessment.

### Scoring Guide

|  |  |  |
| --- | --- | --- |
|  | Criteria | Ratings |
| 1. | Use data terminology, concepts, and data types | 5 4 3 2 1 0 |
| 2. | learner can successfully list common data types | 5 4 3 2 1 0 |
| 3. | learner can successfully define the components of a relational database | 5 4 3 2 1 0 |
| 4. | learner can successfully assign appropriate data types to data elements | 5 4 3 2 1 0 |
| 5. | learner can successfully associate database terms with corresponding definitions | 5 4 3 2 1 0 |
| 6. | Use a SQL-based development toolset | 5 4 3 2 1 0 |
| 7. | learner can successfully create database objects using the Microsoft SQL Management Studio (SSMS) designer | 5 4 3 2 1 0 |
| 8. | learner can successfully script objects using the SSMS designer | 5 4 3 2 1 0 |
| 9. | learner can successfully locate components within the SSMS designer | 5 4 3 2 1 0 |
| 10. | learner can successfully run scripts within the SSMS designer | 5 4 3 2 1 0 |
| 11. | learner can successfully debug scripts within the SSMS designer | 5 4 3 2 1 0 |
| 12. | Create relational database objects with relationships and constraints | 5 4 3 2 1 0 |
| 13. | learner can successfully create a database using the Microsoft SQL Management Studio (SSMS) designer | 5 4 3 2 1 0 |
| 14. | learner can successfully create a table using the SSMS designer | 5 4 3 2 1 0 |
| 15. | Write SQL SELECT statements | 5 4 3 2 1 0 |
| 16. | learner can successfully identify components of a Structured Query Language (SQL) SELECT statement | 5 4 3 2 1 0 |
| 17. | learner can successfully identify syntax errors in flawed SQL SELECT statements | 5 4 3 2 1 0 |
| 18. | learner can successfully write syntactically-correct SQL SELECT statements | 5 4 3 2 1 0 |
| 19. | learner can successfully write basic SQL SELECT statements to retrieve data from a single table | 5 4 3 2 1 0 |
| 20. | learner can successfully write basic SQL SELECT statements to join data from multiple tables | 5 4 3 2 1 0 |
| 21. | Write SQL INSERT, UPDATE, and DELETE statements | 5 4 3 2 1 0 |
| 22. | learner can successfully identify components of a SQL Create/Read/Update/Delete (CRUD) statements | 5 4 3 2 1 0 |
| 23. | learner can successfully identify syntax errors in flawed SQL CRUD statements | 5 4 3 2 1 0 |
| 24. | learner can successfully write syntactically-correct SQL CRUD statements | 5 4 3 2 1 0 |
| 25. | learner can successfully write basic SQL INSERT statements | 5 4 3 2 1 0 |
| 26. | learner can successfully write basic SQL DELETE statements | 5 4 3 2 1 0 |
| 27. | learner can successfully write basic SQL UPDATE statements | 5 4 3 2 1 0 |
| 28. | Install and configure a SQL server | 5 4 3 2 1 0 |
| 29. | learner can successfully install SSMS | 5 4 3 2 1 0 |
| 30. | learner can successfully configure SSMS | 5 4 3 2 1 0 |
| 31. | learner can successfully connect to databases using SSMS | 5 4 3 2 1 0 |
| 32. | Model data using Entity Relationship Diagrams | 5 4 3 2 1 0 |
| 33. | learner can successfully create basic entity diagram using Microsoft Visio | 5 4 3 2 1 0 |
| 34. | learner can successfully create full entity relationship diagram (ERD) using Microsoft Visio | 5 4 3 2 1 0 |
| 35. | Create normalized tables | 5 4 3 2 1 0 |
| 36. | learner can successfully create normalized tables in the 1st, 2nd, & 3rd normal form | 5 4 3 2 1 0 |
| 37. | learner can successfully discuss and communicate the differences in normalization | 5 4 3 2 1 0 |
| 38. | learner can successfully explain when a table is considered normalized | 5 4 3 2 1 0 |
| 39. | Create structured XML documents | 5 4 3 2 1 0 |
| 40. | learner can successfully create structured XML documents | 5 4 3 2 1 0 |
| 41. | learner can successfully design and define XML tags | 5 4 3 2 1 0 |
| 42. | learner can successfully populate XML documents with data | 5 4 3 2 1 0 |
| 43. | Create an XML document object model | 5 4 3 2 1 0 |
| 44. | learner can successfully explain the structure and elements XML | 5 4 3 2 1 0 |
| 45. | learner can successfully demonstrate the use of XML hierarchy | 5 4 3 2 1 0 |
| 46. | learner can successfully write XML syntax | 5 4 3 2 1 0 |
| 47. | Present database content in a professional and organized manner | 5 4 3 2 1 0 |
| 48. | learner can successfully write documents using correct grammar and punctuation | 5 4 3 2 1 0 |
| 49. | learner can successfully demonstrate organized thoughts and process flow | 5 4 3 2 1 0 |

Discussion Board

Directions

Using the "Create Thread" button, submit your initial response to the discussion board post associated with each learning plan and respond to at least two posts from your peers. Your initial response must exceed 250 words in length and demonstrate an understanding of the topic. Each response to peers must add value to the conversation.

Note: The criteria that will apply to this assessment are determined by the competencies being assessed. By the end of this course, you will have been assessed on all of the criteria which are included in the scoring guide.

|  |  |
| --- | --- |
| Environment | Outside Assignment |

Evaluator(s)

Instructor

Target Course Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
| 2. | Use a SQL-based development toolset |
| 3. | Create relational database objects with relationships and constraints |
| 4. | Write SQL SELECT statements |
| 5. | Write SQL INSERT, UPDATE, and DELETE statements |
| 6. | Install and configure a SQL server |
| 7. | Model data using Entity Relationship Diagrams |
| 8. | Create normalized tables |
| 9. | Create structured XML documents |
| 10. | Create an XML document object model |
| 11. | Present database content in a professional and organized manner |

### Scoring

Rating Scale

|  |  |
| --- | --- |
| Value | Description |
| 5 | Masterful |
| 4 | Skilled |
| 3 | Able |
| 2 | Developing |
| 1 | Novice |
| 0 | Unskilled |

Scoring Standard

You must earn a minimum rating of "3" on each criterion to successfully complete this assessment.

### Scoring Guide

|  |  |  |
| --- | --- | --- |
|  | Criteria | Ratings |
| 1. | learner can successfully list common data types | 5 4 3 2 1 0 |
| 2. | learner can successfully define the components of a relational database | 5 4 3 2 1 0 |
| 3. | learner can successfully explain the value and typical use of a database | 5 4 3 2 1 0 |
| 4. | learner can successfully discuss the impact of database design on the ability to query data | 5 4 3 2 1 0 |
| 5. | learner can successfully discuss the role of constraints in maintaining data integrity | 5 4 3 2 1 0 |
| 6. | learner can successfully discuss optimization of SQL select statements | 5 4 3 2 1 0 |
| 7. | learner can successfully discuss and communicate the differences in normalization | 5 4 3 2 1 0 |
| 8. | learner can successfully explain the purpose of XML documents | 5 4 3 2 1 0 |
| 9. | learner can successfully design and define XML tags | 5 4 3 2 1 0 |
| 10. | learner can successfully explain the structure and elements XML | 5 4 3 2 1 0 |
| 11. | learner can successfully write documents using correct grammar and punctuation | 5 4 3 2 1 0 |
| 12. | learner can successfully cite sources using APA formatting | 5 4 3 2 1 0 |
| 13. | learner can successfully demonstrate organized thoughts and process flow | 5 4 3 2 1 0 |
| 14. | learner can successfully present content in organized form verbally | 5 4 3 2 1 0 |

Objective Test

Directions

Complete each quiz by following the instructions distributed by your instructor at the beginning of the test period.

Note: The criteria that will apply to this assessment are determined by the competencies being assessed. By the end of this course, you will have been assessed on all of the criteria which are included in the scoring guide.

|  |  |
| --- | --- |
| Environment | Outside Assignment |

Evaluator(s)

Instructor

Target Course Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
| 2. | Use a SQL-based development toolset |
| 3. | Create relational database objects with relationships and constraints |
| 4. | Write SQL SELECT statements |
| 5. | Write SQL INSERT, UPDATE, and DELETE statements |
| 6. | Install and configure a SQL server |
| 7. | Model data using Entity Relationship Diagrams |
| 8. | Create normalized tables |
| 9. | Create structured XML documents |
| 10. | Create an XML document object model |
| 11. | Present database content in a professional and organized manner |

### Scoring

Rating Scale

|  |  |
| --- | --- |
| Value | Description |
| 5 | Masterful |
| 4 | Skilled |
| 3 | Able |
| 2 | Developing |
| 1 | Novice |
| 0 | Unskilled |

Scoring Standard

You must earn a minimum rating of "3" on each criterion to successfully complete this assessment.

### Scoring Guide

|  |  |  |
| --- | --- | --- |
|  | Criteria | Ratings |
| 1. | Use data terminology, concepts, and data types | 5 4 3 2 1 0 |
| 2. | learner can successfully list common data types | 5 4 3 2 1 0 |
| 3. | learner can successfully define the components of a relational database | 5 4 3 2 1 0 |
| 4. | learner can successfully assign appropriate data types to data elements | 5 4 3 2 1 0 |
| 5. | learner can successfully associate database terms with corresponding definitions | 5 4 3 2 1 0 |
| 6. | Use a SQL-based development toolset | 5 4 3 2 1 0 |
| 7. | learner can successfully create database objects using the Microsoft SQL Management Studio (SSMS) designer | 5 4 3 2 1 0 |
| 8. | learner can successfully script objects using the SSMS designer | 5 4 3 2 1 0 |
| 9. | learner can successfully locate components within the SSMS designer | 5 4 3 2 1 0 |
| 10. | learner can successfully run scripts within the SSMS designer | 5 4 3 2 1 0 |
| 11. | learner can successfully debug scripts within the SSMS designer | 5 4 3 2 1 0 |
| 12. | Create relational database objects with relationships and constraints | 5 4 3 2 1 0 |
| 13. | learner can successfully create a database using the Microsoft SQL Management Studio (SSMS) designer | 5 4 3 2 1 0 |
| 14. | learner can successfully create a table using the SSMS designer | 5 4 3 2 1 0 |
| 15. | Write SQL SELECT statements | 5 4 3 2 1 0 |
| 16. | learner can successfully identify components of a Structured Query Language (SQL) SELECT statement | 5 4 3 2 1 0 |
| 17. | learner can successfully identify syntax errors in flawed SQL SELECT statements | 5 4 3 2 1 0 |
| 18. | learner can successfully write syntactically-correct SQL SELECT statements | 5 4 3 2 1 0 |
| 19. | learner can successfully write basic SQL SELECT statements to retrieve data from a single table | 5 4 3 2 1 0 |
| 20. | learner can successfully write basic SQL SELECT statements to join data from multiple tables | 5 4 3 2 1 0 |
| 21. | Write SQL INSERT, UPDATE, and DELETE statements | 5 4 3 2 1 0 |
| 22. | learner can successfully identify components of a SQL Create/Read/Update/Delete (CRUD) statements | 5 4 3 2 1 0 |
| 23. | learner can successfully identify syntax errors in flawed SQL CRUD statements | 5 4 3 2 1 0 |
| 24. | learner can successfully write syntactically-correct SQL CRUD statements | 5 4 3 2 1 0 |
| 25. | learner can successfully write basic SQL INSERT statements | 5 4 3 2 1 0 |
| 26. | learner can successfully write basic SQL DELETE statements | 5 4 3 2 1 0 |
| 27. | learner can successfully write basic SQL UPDATE statements | 5 4 3 2 1 0 |
| 28. | Install and configure a SQL server | 5 4 3 2 1 0 |
| 29. | Model data using Entity Relationship Diagrams | 5 4 3 2 1 0 |
| 30. | Create normalized tables | 5 4 3 2 1 0 |
| 31. | learner can successfully create normalized tables in the 1st, 2nd, & 3rd normal form | 5 4 3 2 1 0 |
| 32. | learner can successfully discuss and communicate the differences in normalization | 5 4 3 2 1 0 |
| 33. | learner can successfully explain when a table is considered normalized | 5 4 3 2 1 0 |
| 34. | Create structured XML documents | 5 4 3 2 1 0 |
| 35. | learner can successfully create structured XML documents | 5 4 3 2 1 0 |
| 36. | learner can successfully explain the purpose of XML documents | 5 4 3 2 1 0 |
| 37. | learner can successfully design and define XML tags | 5 4 3 2 1 0 |
| 38. | learner can successfully populate XML documents with data | 5 4 3 2 1 0 |
| 39. | Create an XML document object model | 5 4 3 2 1 0 |
| 40. | learner can successfully explain the structure and elements XML | 5 4 3 2 1 0 |
| 41. | learner can successfully demonstrate the use of XML hierarchy | 5 4 3 2 1 0 |
| 42. | learner can successfully write XML syntax | 5 4 3 2 1 0 |
| 43. | Present database content in a professional and organized manner | 5 4 3 2 1 0 |
| 44. | learner can successfully write documents using correct grammar and punctuation | 5 4 3 2 1 0 |
| 45. | learner can successfully cite sources using APA formatting | 5 4 3 2 1 0 |
| 46. | learner can successfully demonstrate organized thoughts and process flow | 5 4 3 2 1 0 |
| 47. | learner can successfully present content in organized form verbally | 5 4 3 2 1 0 |

LP 1: Data, Data Types, and Databases

Overview/Purpose

This learning plan introduces the concepts of data, data types, and databases, both relational and object-based.

Target Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully list common data types |
|  | learner can successfully define the components of a relational database |
|  | learner can successfully assign appropriate data types to data elements |
|  | learner can successfully associate database terms with corresponding definitions |
|  | learner can successfully explain the value and typical use of a database |
|  | Learning Objectives |
|  | Determine common data types |
|  | Determine the components of a relational database |
|  | Assign appropriate data types to data elements |
|  | Associate database terms with corresponding definitions |
|  | Explain the value and typical use of a database |
| 2. | Present database content in a professional and organized manner |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully write documents using correct grammar and punctuation |
|  | learner can successfully cite sources using APA formatting |
|  | learner can successfully demonstrate organized thoughts and process flow |
|  | learner can successfully present content in organized form verbally |
|  | Learning Objectives |
|  | Write documents using correct grammar and punctuation |
|  | Cite sources using APA formatting |
|  | Demonstrate organized thoughts and process flow |
|  | Use strong oral presentation skills to convey content in an organized manner |

### Learning Activities

|  |  |
| --- | --- |
| 1. | Listen to course lectures. |
| 2. | Participate in course discussions. |
| 3. | Review websites related to topic in course lectures. |
| 4. | Read the textbook and complete activities.  Chapter 1 RDBMS Basics: What Makes Up a SQL Server Database? Read Chapter 1 pages 1-21,  Ch 8 Being Normal: Normalization and Other Basic Design Issues pgs 257-302 |
| 5. | Review and provide feedback on peer projects/assignments. |
| 6. | Answer spontaneous questions to demonstrate an understanding of content. |
| 7. | Mentor/coach peers through the completion of assigned projects. |
| 8. | Participate in discussion boards beyond scope required by assignments. |
| 9. | Answer the question, "What is the muddiest point in this learning plan? What concept or skill remains the least clear to you?" |

### Assessment Activities

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Complete lab activity. List a minimum of 15 data objects that would be needed to create a Music Collection Database. | | |
| 2. | Complete performance assignment. List a minimum of 15 data objects that would be needed to create an Order Management System. Then write a paragraph narrative of the significance of the chosen data objects. | | |
| 3. | Complete discussion board. Locate two SQL resources from the Internet that would be a valuable reference in the future and indicate why each of the resources has value. The discussion post should be a minimum of 250 words. | | |
| 4. | Using the Music Collection database create a block diagram with minimally three groupings from the data components, including the data type of each. | | |
| 5. | Using the Order Management System create a block diagram with minimally three groupings from the data components, including the data type of each. | | |
| 6. | Complete the objective quiz. (EMBARG0) | | |
|  | Learning Materials | | |
|  | Quiz 1.2 | 1.2 Quiz.docx Hyperlink removed. Document is in the Embargo. |

LP 2: Data Relationships and Integrity

Overview/Purpose

This learning plan introduces relational database structures for relating data tables and enforcing integrity.

Target Competencies

|  |  |
| --- | --- |
| 1. | Use a SQL-based development toolset |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create database objects using the Microsoft SQL Management Studio (SSMS) designer |
|  | learner can successfully script objects using the SSMS designer |
|  | learner can successfully locate components within the SSMS designer |
|  | learner can successfully run scripts within the SSMS designer |
|  | learner can successfully debug scripts within the SSMS designer |
|  | Learning Objectives |
|  | Create database objects using the Microsoft SQL Management Studio (SSMS) designer |
|  | Script objects using the SSMS designer |
|  | Locate components within the SSMS designer |
|  | Run scripts within the SSMS designer |
|  | Debug scripts within the SSMS designer |
| 2. | Create relational database objects with relationships and constraints |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create a database using the Microsoft SQL Management Studio (SSMS) designer |
|  | learner can successfully create a table using the SSMS designer |
|  | learner can successfully discuss the impact of database design on the ability to query data |
|  | learner can successfully discuss the role of constraints in maintaining data integrity |
|  | Learning Objectives |
|  | Create a database using the Microsoft SQL Management Studio (SSMS) designer |
|  | Create a table using the SSMS designer |
|  | Explain the impact of database design on the ability to query data |
|  | Explain the role of constraints in maintaining data integrity |
| 3. | Install and configure a SQL server |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | learner can successfully install SSMS |
|  | learner can successfully configure SSMS |
|  | learner can successfully connect to databases using SSMS |
|  | Learning Objectives |
|  | Install SSMS |
|  | Configure SSMS |
|  | Connect to databases using SSMS |
| 4. | Model data using Entity Relationship Diagrams |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create basic entity diagram using Microsoft Visio |
|  | learner can successfully create full entity relationship diagram (ERD) using Microsoft Visio |
|  | Learning Objectives |
|  | Create basic entity diagram using Microsoft Visio |
|  | Create full entity relationship diagram (ERD) using Microsoft Visio |
| 5. | Create normalized tables |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create normalized tables in the 1st, 2nd, & 3rd normal form |
|  | learner can successfully discuss and communicate the differences in normalization |
|  | learner can successfully explain when a table is considered normalized |
|  | Learning Objectives |
|  | Create normalized tables in the 1st, 2nd, & 3rd normal form |
|  | Explain the differences in normalization |
|  | Explain when a table is considered normalized |

### Learning Activities

|  |  |
| --- | --- |
| 1. | Listen to course lectures. |
| 2. | Participate in course discussions. |
| 3. | Review websites as referred to in course lectures. |
| 4. | Read the textbook and complete activities in Chapter 17 Business Intelligence Fundamentals pgs 615-648 |
| 5. | Review and provide feedback on peer projects/assignments. |
| 6. | Answer spontaneous questions to demonstrate an understanding of content. |
| 7. | Mentor/coach peers through the completion of assigned projects. |
| 8. | Participate in discussion boards beyond scope required by assignments. |
| 9. | Answer the question, "What is the muddiest point in this learning plan? What concept or skill remains the least clear to you?" |

### Assessment Activities

|  |  |
| --- | --- |
| 1. | Complete lab activities by using the Music Collection database, create logical and applicable keys, indices and constraints within the block diagram. |
| 2. | Complete performance assignments using the Order Management System database, create logical and applicable keys, indices and constraints within the block diagram. |
| 3. | Complete discussion board by answering the question, other than developer, find two occupations where SQL skills would be valuable, and provide specific examples for each. |

LP 3: Data Structure and Organization

Overview/Purpose

This learning plan introduces techniques for structuring and organizing data.

Target Competencies

|  |  |
| --- | --- |
| 1. | Use data terminology, concepts, and data types |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully list common data types |
|  | learner can successfully define the components of a relational database |
|  | learner can successfully assign appropriate data types to data elements |
|  | learner can successfully associate database terms with corresponding definitions |
|  | learner can successfully explain the value and typical use of a database |
|  | Learning Objectives |
|  | Determine common data types |
|  | Determine the components of a relational database |
|  | Assign appropriate data types to data elements |
|  | Associate database terms with corresponding definitions |
|  | Explain the value and typical use of a database |
| 2. | Model data using Entity Relationship Diagrams |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create basic entity diagram using Microsoft Visio |
|  | learner can successfully create full entity relationship diagram (ERD) using Microsoft Visio |
|  | Learning Objectives |
|  | Create basic entity diagram using Microsoft Visio |
|  | Create full entity relationship diagram (ERD) using Microsoft Visio |
| 3. | Present database content in a professional and organized manner |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully write documents using correct grammar and punctuation |
|  | learner can successfully cite sources using APA formatting |
|  | learner can successfully demonstrate organized thoughts and process flow |
|  | learner can successfully present content in organized form verbally |
|  | Learning Objectives |
|  | Write documents using correct grammar and punctuation |
|  | Cite sources using APA formatting |
|  | Demonstrate organized thoughts and process flow |
|  | Use strong oral presentation skills to convey content in an organized manner |

### Learning Activities

|  |  |
| --- | --- |
| 1. | Listen to course lectures. |
| 2. | Participate in course discussions. |
| 3. | Review websites as referred to in course lectures. |
| 4. | Read the textbook and complete activities in Ch 2 Learning the Tools of the Trade pgs 22-44 |
| 5. | Review and provide feedback on peer projects/assignments. |
| 6. | Answer spontaneous questions to demonstrate an understanding of content. |
| 7. | Mentor/coach peers through the completion of assigned projects. |
| 8. | Participate in discussion boards beyond scope required by assignments. |
| 9. | Answer the question, "What is the muddiest point in this learning plan? What concept or skill remains the least clear to you?" |

### Assessment Activities

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Complete lab activities. Create an Entity Relationship Diagram for the music collection components. | | |
| 2. | Complete performance assignments. Create an Entity Relationship Diagram for the order management system components. | | |
| 3. | Complete objective quiz. EMBARGO | | |
|  | Learning Materials | | |
|  | Quiz 3.1 | 331 3.1 Quiz.doc Hyperlink removed. Document is in the Embargo. |
| 4. | Complete the performance assessment. Write 2 page paper on what are Entity Relationship Diagrams, demonstrating an understanding  in constraints, keys, datatypes, and indices.  Use two accredited sources in addition to the text, citing in APA format.  Finalize all documents in a professional format using 12pt font, double spaced, APA citations, title page and works cited page for the order management system for Part 1 of Portfolio Project. | | |
| 5. | Complete the performance assignment. Install SQL Management Studio | | |

LP 4: Structured Query Language (SQL)

Overview/Purpose

This learning plan introduces the Structured Query Language (SQL) and provides an overview of the many types of statements in the language.

Target Competencies

|  |  |
| --- | --- |
| 1. | Use a SQL-based development toolset |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create database objects using the Microsoft SQL Management Studio (SSMS) designer |
|  | learner can successfully script objects using the SSMS designer |
|  | learner can successfully locate components within the SSMS designer |
|  | learner can successfully run scripts within the SSMS designer |
|  | learner can successfully debug scripts within the SSMS designer |
|  | Learning Objectives |
|  | Create database objects using the Microsoft SQL Management Studio (SSMS) designer |
|  | Script objects using the SSMS designer |
|  | Locate components within the SSMS designer |
|  | Run scripts within the SSMS designer |
|  | Debug scripts within the SSMS designer |
| 2. | Create relational database objects with relationships and constraints |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create a database using the Microsoft SQL Management Studio (SSMS) designer |
|  | learner can successfully create a table using the SSMS designer |
|  | learner can successfully discuss the impact of database design on the ability to query data |
|  | learner can successfully discuss the role of constraints in maintaining data integrity |
|  | Learning Objectives |
|  | Create a database using the Microsoft SQL Management Studio (SSMS) designer |
|  | Create a table using the SSMS designer |
|  | Explain the impact of database design on the ability to query data |
|  | Explain the role of constraints in maintaining data integrity |
| 3. | Write SQL SELECT statements |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully identify components of a Structured Query Language (SQL) SELECT statement |
|  | learner can successfully identify syntax errors in flawed SQL SELECT statements |
|  | learner can successfully write syntactically-correct SQL SELECT statements |
|  | learner can successfully write basic SQL SELECT statements to retrieve data from a single table |
|  | learner can successfully write basic SQL SELECT statements to join data from multiple tables |
|  | learner can successfully discuss optimization of SQL select statements |
|  | Learning Objectives |
|  | Identify components of a Structured Query Language (SQL) SELECT statement |
|  | Identify syntax errors in flawed SQL SELECT statements |
|  | Write syntactically-correct SQL SELECT statements |
|  | Write basic SQL SELECT statements to retrieve data from a single table |
|  | Write basic SQL SELECT statements to join data from multiple tables |
|  | Determine optimization of SQL select statements |
| 4. | Write SQL INSERT, UPDATE, and DELETE statements |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully identify components of a SQL Create/Read/Update/Delete (CRUD) statements |
|  | learner can successfully identify syntax errors in flawed SQL CRUD statements |
|  | learner can successfully write syntactically-correct SQL CRUD statements |
|  | learner can successfully write basic SQL INSERT statements |
|  | learner can successfully write basic SQL DELETE statements |
|  | learner can successfully write basic SQL UPDATE statements |
|  | Learning Objectives |
|  | Identify components of a SQL Create/Read/Update/Delete (CRUD) statements |
|  | Identify syntax errors in flawed SQL CRUD statements |
|  | Write syntactically-correct SQL CRUD statements |
|  | Write basic SQL INSERT statements |
|  | Write basic SQL DELETE statements |
|  | Write basic SQL UPDATE statements |
| 5. | Create normalized tables |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create normalized tables in the 1st, 2nd, & 3rd normal form |
|  | learner can successfully discuss and communicate the differences in normalization |
|  | learner can successfully explain when a table is considered normalized |
|  | Learning Objectives |
|  | Create normalized tables in the 1st, 2nd, & 3rd normal form |
|  | Explain the differences in normalization |
|  | Explain when a table is considered normalized |

### Learning Activities

|  |  |
| --- | --- |
| 1. | Listen to course lectures. |
| 2. | Participate in course discussions. |
| 3. | Review websites as referred to in course lectures. |
| 4. | Read the textbook and complete activities in Ch 5 Creating and Altering Tables pgs 129-171, Ch 3 The Foundation Statements of T-SQL pgs 49-88, Ch 4 JOINs pgs 91-125, and Ch 6 Keys and Constraints pgs 172-211. |
| 5. | Review and provide feedback on peer projects/assignments. |
| 6. | Answer spontaneous questions to demonstrate an understanding of content. |
| 7. | Mentor/coach peers through the completion of assigned projects. |
| 8. | Participate in discussion boards beyond scope required by assignments. |
| 9. | Answer the question, "What is the muddiest point in this learning plan? What concept or skill remains the least clear to you?" |

### Assessment Activities

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Complete lab activities. Using the music collection block diagram from Part 1, create tables specifying data types.  Populate each of the tables with at least 5 records.  Practice Create, Select, Update, Insert, Delete and Join statements. Add keys to tables, through designer and T-SQL. Read the article about CRUD and write an abstract (75-100 words) on it's contents.  Find CRUD information using the NTC library resource site it using APA formatting. | | |
| 2. | Complete performance assignments. Using the order management block diagram from Part 1, create tables specifying data types. Create instructions with on how this was completed by use of the designer and by using T-SQL.  Expand created tables and take screen shots of the tables. Populate each of the tables with at least 5 records. Create instructions on the two ways this can be completed.  Expand tables and take screen shots of the populated tables. Write out the full syntax for each CRUD & JOIN statement,defining each function and including screen shots of successful queries within SMS. Create instructions on how to add keys to tables, including screen shots within SMS. | | |
| 3. | Complete discussion boards. Locate two SQL resources from the Internet that would be a valuable to practice SQL skills and why they were chosen. Locate two other database management systems and indicate the similiarities and differences in comparison to MS SQL. | | |
| 4. | Complete performance assessment. Write 2 page paper on why use automate tasks by use of CRUD procedures, demonstrating an understanding  syntax, and functions.  Use two accredited sources in addition to the text, citing in APA format.  Finalize all documents in a professional format using 12pt font, double spaced, APA citations, title page and works cited page for the order management system for Part 2 of Portfolio Project. | | |
| 5. | Complete objective quizzes. | | |
|  | Learning Materials | | |
|  | 4.3 Quiz | 331 4.3 Quiz.docx Hyperlink removed. Document is in the Embargo. |
|  | 4.5 Quiz | 331 Quiz 4.5.docx Hyperlink removed. Document is in the Embargo. |

LP 5: Extensible Markup Language (XML)

Overview/Purpose

This learning plan introduces the Extensible Markup Language (XML) and explains its use as a both a data storage and data transport mechanism.

Target Competencies

|  |  |
| --- | --- |
| 1. | Create structured XML documents |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | learner can successfully create structured XML documents |
|  | learner can successfully explain the purpose of XML documents |
|  | learner can successfully design and define XML tags |
|  | learner can successfully populate XML documents with data |
|  | Learning Objectives |
|  | Create structured XML documents |
|  | Explain the purpose of XML documents |
|  | Design and define XML tags |
|  | Populate XML documents with data |
| 2. | Create an XML document object model |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully explain the structure and elements XML |
|  | learner can successfully demonstrate the use of XML hierarchy |
|  | learner can successfully write XML syntax |
|  | Learning Objectives |
|  | Explain the structure and elements XML |
|  | Demonstrate the use of XML hierarchy |
|  | Write XML syntax |

### Learning Activities

|  |  |
| --- | --- |
| 1. | Listen to course lectures. |
| 2. | Participate in course discussions. |
| 3. | Review websites as referred to in course lectures. |
| 4. | Read the textbook and complete activities in Ch 1 Introducing XML pgs 3-23, Ch 2 Well-Formed XML pgs 24-50, Ch 5 XML Schemas pgs 117-171, and Ch 7 Extracting Data from XML pgs 211-236. |
| 5. | Review and provide feedback on peer projects/assignments. |
| 6. | Answer spontaneous questions to demonstrate an understanding of content. |
| 7. | Mentor/coach peers through the completion of assigned projects. |
| 8. | Participate in discussion boards beyond scope required by assignments. |
| 9. | Answer the question, "What is the muddiest point in this learning plan? What concept or skill remains the least clear to you?" |

### Assessment Activities

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Complete lab activities. Determine components of XML. Choose a table from the music collection and create XML Syntax, Elements and Attributes for each of the components. Using Excel create an XML document & populate using a table and data from the music collection database. Create a visual respresntation of a Document Object Model for the music collection database. | | |
| 2. | Complete performance assignments. List what XML is and what it is not, the components of an XML document and the definition. Choose a table from the order management system and create XML Syntax, Elements and Attributes for each of the components. Using Excel create an XML document & populate using a table and data from the order management system. | | |
| 3. | Complete discussion boards. Locate two XML resources from the Internet that would be a valuable reference in the future and why each of the resources. Locate two XML resources from the Internet that would be a valuable to practice XML skills and why they were chosen. | | |
| 4. | Complete performance assessment. Write a 2 page paper on the uses of XML, demonstrating an understanding in elements, attributes, object storage and how it is used in conjunction with other software.  Use two accredited sources in addition to the text, citing in APA format.  Finalize all documents in a professional format using 12pt font, double spaced, APA citations, title page and works cited page for the order management system for Part 3 of Portfolio Project. | | |
| 5. | Complete objective quizzes. EMBARGO | | |
|  | Learning Materials | | |
|  | 5.2 Quiz | 331 5.2 Quiz.docx Hyperlink removed. Document is in the Embargo. |
|  | 5.4 Quiz | 331 5.4 Quiz.docx Hyperlink removed. Document is in the Embargo. |

LP 6: Final Project

Overview/Purpose

This learning plan provides a course wrap-up and allows completion of the final project.

Target Competencies

|  |  |
| --- | --- |
| 1. | Model data using Entity Relationship Diagrams |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully create basic entity diagram using Microsoft Visio |
|  | learner can successfully create full entity relationship diagram (ERD) using Microsoft Visio |
|  | Learning Objectives |
|  | Create basic entity diagram using Microsoft Visio |
|  | Create full entity relationship diagram (ERD) using Microsoft Visio |
| 2. | Present database content in a professional and organized manner |
|  | Assessment Strategies |
|  | Lab Activity |
|  | Performance Assignment |
|  | Discussion Board |
|  | Performance Test |
|  | Objective Test |
|  | Criteria |
|  | Performance will be satisfactory when: |
|  | learner can successfully write documents using correct grammar and punctuation |
|  | learner can successfully cite sources using APA formatting |
|  | learner can successfully demonstrate organized thoughts and process flow |
|  | learner can successfully present content in organized form verbally |
|  | Learning Objectives |
|  | Write documents using correct grammar and punctuation |
|  | Cite sources using APA formatting |
|  | Demonstrate organized thoughts and process flow |
|  | Use strong oral presentation skills to convey content in an organized manner |

### Learning Activities

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| --- | --- |
| 1. | Listen to course lectures. |
| 2. | Participate in course discussions. |
| 3. | Review websites as referred to in course lectures. |
| 4. | Read the textbook and complete activities as specified in Blackboard. |
| 5. | Review and provide feedback on peer projects/assignments. |
| 6. | Answer spontaneous questions to demonstrate an understanding of content. |
| 7. | Mentor/coach peers through the completion of assigned projects. |
| 8. | Participate in discussion boards beyond scope required by assignments. |
| 9. | Answer the question, "What is the muddiest point in this learning plan? What concept or skill remains the least clear to you?" |

### Assessment Activities

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Complete performance assessment. Compile all corrected performance assiessments into one final demonstration of work. Using Word, add a theme, format and add a table of contents to unify. EMBARGO | | |
|  | Learning Materials | | |
|  | 6.1 Assessment | 331 6.1 Assessment.docx Hyperlink removed. Document is in the Embargo. |

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