Overview
This event recognizes FBLA members who demonstrate that they have acquired entry level skills for understanding database usage and development in business.

This event consists of two parts: an objective test taken at the NLC and a skills production test taken prior to the NLC.

Competencies and Task Lists
http://www.fbla-pbl.org/docs/ct/FBLA/DATABASEDESIGNANDAPPLICATONS.pdf

Web Site Resources
- Access 2007 Tutorial-Advanced Concepts
  http://www.vevol.com/en/access2007/index.htm
- Database Design
  http://databases.about.com/od/specificproducts/Database Desian.htm
- Datapig Access Tutorials
  http://www.datapiatechnologies.com/AccessMain.htm
- Function X Access 2007 Tutorial-Very Thorough
  http://www.functionx.com/access/

DATABASE DESIGN & APPLICATIONS SAMPLE QUESTIONS

1. The rows in a table are called:
   a. fields
   b. events
   c. columns
   d. records

2. In a typical organization, the person or group in charge of the DBMS is called a(n):
   a. telecommunications expert
   b. object broker
   c. database administrator
   d. end user specialist

3. The ____data type is used for large numbers without a decimal point.
   a. INTEGER
   b. MATH
   c. TINY
   d. SMALLINT

4. SQL is an abbreviation for:
   a. Structured Query Language
   b. Standard Query Language
   c. Select Query Language
   d. Simple Query Language

5. A field is often referred to as a:
   a. row
   b. column
   c. parameter
   d. tuple

6. When using SQL to modify fields in a table, specifying a data type of *Char(10):*
   a. creates a variable length numeric field with 10 decimal places

b. creates a numeric field with up to 10 digits
c. creates a fixed length numeric field with 1 digit and 0 decimal places
d. creates a fixed length field of 10 characters

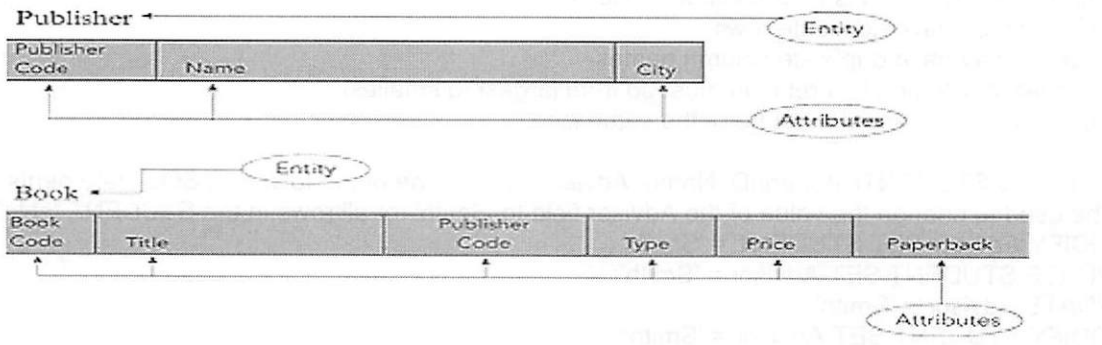
7. Which one of the following is the most likely candidate for the primary key in a table about driver information?
   a. phone numbers
   b. zip code
   c. last names
   d. driver license numbers

8. Modern databases contain "self-describing" information about themselves. This information is called:
   a. data definition
   b. attributes
   c. redundant data
   d. metadata

9. The maximum number of primary keys in a table is:
   a. 1
   b. 3
   c. 2
   d. unlimited

10. A partial dependency exists when:
    a. a nonkey attribute is determined by only part of the key
    b. the name of a related field is changed
    c. a field value is left null
    d. a record is removed before modifying the foreign key

11. Screen objects used to enter, maintain, view, and print records from a database are called:
    a. forms
    b. fields
    c. designers
    d. tables



12. Using the above image, what is the relationship between Sales Rep and Customer?
    a. many-to-many
    b. one-to-many
    c. one-to-one
    d. many-to-one

13. Getting a table into third normal form is done by removing all:
    a. partial and transitive dependencies
    b. recursive attributes
    c. duplicate rows
    d. repeating dependencies

14. The source of data for a(n)____ control is an expression.
    a. unbound
    b. calculated
    c. bound
    d. dynamic

15. Calculations in a report can be used in any of the section **except:**
    a. page footer
    b. detail
    c. top header
    d. report footer

16. A_____ is an individual box in a table where a column and a row meet.
    a. cell
    b. row
    c. column
    d. group

17. The sequence to designing an effective data structure are:
    a. create each field, create each table, save, and identify the database
    b. identify the database, create each table, identify each field, and save
    c. identify the database, identify each field, create each table, and save
    d. create each table, identify the database, identify each field, and save

18. A database is a:
    a. library of queries and data files for querying
    b. collection of forms and reports that support a given purpose
    c. self-describing collection of related records
    d. set of applications and the data sets for those applications

19. Which one of the following is **true** about a relation?
    a. A relation may have duplicate rows.
    b. A relation may have duplicate column names.
    c. The order of columns in a relation must go from largest to smallest.
    d. All entries in any column must be of the same kind.

20. Given the table STUDENT(StudentID, Name, Advisor), which one of the following SQL statements would be used to change the value of the Advisor field to 'Smith' for all rows in the STUDENT table?
    a. MODIFY Advisor SET STUDENT = 'Smith';
    b. UPDATE STUDENT SET Advisor = 'Smith';
    c. UPDATE Advisor = 'Smith';
    d. MODIFY STUDENT SET Advisor = 'Smith';

21. Applying a filter to a query will:
    a. further limit the records that are displayed in the query results
    b. allow you to specify which fields will be displayed in the query
    c. total the values of all the fields in the table
    d. apply the query to another table

22. If you want to export a database object to an HTML file with the best possible formatting, you should export a:
    a. report
    b. form
    c. query
    d. table

23. In the condition Balance > = 0, the >= are:
    a. mathematical operators
    b. comparison operators
    c. variable operators
    d. relational operators

24. Using the word **not** in a comparison expression would:
    a. have no effect on the query results
    b. retrieve similar results in the query
    c. retrieve the results not listed in the criteria
    d. retrieve no results in the query each time

25. Which one of the following SQL Statements will retrieve customer information?
    a. Select * from orders
    b. Select * from shippers
    c. Select * from employees
    d. Select * from customers

26. A relational database is a group of related:
    a. records
    b. fields
    c. tables
    d. rows

27. Which one of the following sections print headings at the top of each page:
    a. page footer
    b. top header
    c. detail
    d. page header

28. The ____ data type is a number automatically generated that produces unique values for each record.
    a. RecordNumber
    b. OLE Object
    c. AutoNumber or Identity
    d. Number

29. You must create ____ before any of the other database objects.
    a. reports
    b. queries
    c. tables
    d. data access pages

30. Some developers like to use the _ property for a field to document its contents such as identifying a field as a primary or foreign key or providing users instructions about entering values into the field.
    a. purpose
    b. description
    c. name
    d. data type

DATABASE DESIGN & APPLICATIONS SAMPLE PRODUCTION TEST

JOB 1: Populate Database with Sample Data

Create records in your tables to reflect the following timesheets. As a hint, each line with Work Hours is a WorkDetails record with its TimeSheetID foreign key pointing back to the appropriate TimeSheets record.

Employee Name:	Jan Doe	Emp ID:	H43AXT
Time sheet ID:	Auto#	Week Ending Date:	Oct 14,2008

ProjectID	Project Name	Work Date	Work Hours
TP001	Test Project 1	Oct 10, 2008	5.0
TP003	Test Project 3	Oct 10, 2008	3.0
TP002	Test Project 2	Oct 11, 2008	8.0
TP003	Test Project 3	Oct 12, 2008	8.0

Employee Name:	Pat Smith	Emp ID:	H57AXW
Time sheet ID:	Auto#	Week Ending Date:	Oct 14,2008

ProjectID	Project Name	Date	Hours
TP003	Test Project 3	Oct 13, 2008	3.8
TP002	Test Project 2	Oct 13, 2008	4.2
TP001	Test Project 1	Oct 14, 2008	8.0

Print Job 1-A Print the contents (not the definitions) of the TimeSheets table. **Print Job 1-B** Print the contents (not the definitions) of the WorkDetails table.

JOB 2: Design Database for New Requirement (15 points)

Create a time card report that best represents the data shown in the table below. Name the report Employee Time Card.

Employee Name:	Pat Smith	Emp ID:	H57AXW
Time sheet ID:	Auto#	Week Ending Date:	Oct 14,2008

ProjectID	Project Name	Date	Hours
TP003	Test Project 3	Oct 13, 2008	3.8
TP002	Test Project 2	Oct 13, 2008	4.2
TP001	Test Project 1	Oct 14, 2008	8.0

Print Job 2 Print the updated database relationships, showing tables, fields, and relationships.

JOB 3: Develop A Simple Select Query (15 points)

Create a query (e.g., name it qryJob4) that selects all Timesheets showing the Employee ID, Employee Name, TimeSheetID, and WeekEndingDate.

Print Job 3-A Print the query definition in design view.
Print Job 3-B Print the query.

JOB 4: Develop A Select Query with Criteria (15 points)

Create a query (e.g., name it qryJob5) that selects all "full day" WorkDetails records (these are records that show more than eight or more hours were worked), showing the Employee ID, Employee Name, Project ID, Project Name, WeekEndingDate (for the TimeSheet), WorkDate, and the WorkHours.

Print Job 4-A Print the query definition in design view.
Print Job 4-B Print the query.

JOB 5: Develop A Select Query that Summarizes (15 points)

Create a query (e.g., name it qryJob6) that totals all hours spent by employees on Projects. There should be one line for each Project showing the ProjectID, ProjectName, and the total hours spent on the project.

Print Job 5-A Print the query definition in design view.
Print Job 5-B Print the query.

Cyber Security Answer Key

1)	C	11)	D	21)	B
2)	A	12)	D	22)	D
3)	B	13)	A	23)	D
4)	B	14)	D	24)	D
5)	A	15)	A	25)	C
6)	D	16)	D	26)	D
7)	A	17)	D	27)	C
8)	C	18)	C	28)	C
9)	A	19)	A	29)	D
10)	C	20)	D	30)	C

Database Design & Applications Answer Key

1)	D	11)	A	21)	A
2)	C	12)	B	22)	B
3)	A	13)	A	23)	B
4)	A	14)	B	24)	C
5)	B	15)	C	25)	D
6)	D	16)	A	26)	C
7)	D	17)	B	27)	D
8)	D	18)	C	28)	C
9)	A	19)	D	29)	C
10)	A	20)	B	30)	B

Desktop Publishing Answer Key

1)	C	11)	A	21)	C
2)	C	12)	C	22)	B
3)	B	13)	A	23)	A
4)	C	14)	C	24)	A
5)	A	15)	A	25)	B
6)	B	16)	B	26)	B
7)	A	17)	A	27)	C
8)	B	18)	B	28)	A
9)	A	19)	C	29)	A
10)	B	20)	A	30)	A

Economics Answer Key

1)	A	11)	D	21)	B
2)	D	12)	A	22)	D
3)	B	13)	D	23)	D
4)	B	14)	C	24)	A
5)	A	15)	B	25)	D
6)	B	16)	C	26)	D
7)	C	17)	B	27)	C
8)	C	18)	A	28)	D
9)	D	19)	D	29)	B
10)	C	20)	A	30)	B

Entrepreneurship Answer Key

1)	B	11)	A	21)	C
2)	A	12)	B	22)	D
3)	B	13)	A	23)	C
4)	D	14)	D	24)	A
5)	C	15)	A	25)	A
6)	B	16)	C	26)	B
7)	B	17)	A	27)	B
8)	A	18)	C	28)	D
9)	C	19)	B	29)	C
10)	D	20)	B	30)	A

DATABASE DESIGN & APPLICATIONS PRODUCTION ANSWER KEY

JOB 1: Database

Job 1-A

Students should print something like the following but the TimeSheetID's may not match (since the database generates the numbers and the test taker may have deleted some records while working).

Timesheets		
TimeSheetID	EmployeeID	WeekEndingDate
1	H43AXT	10/14/2008
2	H57AXW	10/14/2008

Job 1-B

Students should print something like the following but WorkDetailID's may not match; they can be any set of unique numbers. Also, TimeSheetID's may not be 1 and 2 but they should match the two TimeSheetID's from Job 1-A.

WorkDetails				
WorkDetailID	TimeSheetID	ProjectID	WorkDate	WorkHours
1	1	TP001	10/10/2008	5
2	1	TP003	10/10/2008	3
3	1	TP002	10/11/2008	8
4	1	TP003	10/12/2008	8
5	2	TP003	10/13/2008	3.8
6	2	TP002	10/13/2008	4.2
7	2	TP001	10/14/2008	8

JOB 2: Database for New Requirement

Below is a diagram which exhibits the appropriate attributes but as noted there are some variations on a correct answer. A key component is for the test taker to realize that the data should be formatted in a way that is consistent with the original employee time card table.

Employee Time Card

Employee Name Jan Doe Employee ID H43AXT
Time Sheet ID 1 Week Ending Date 10/14/2008

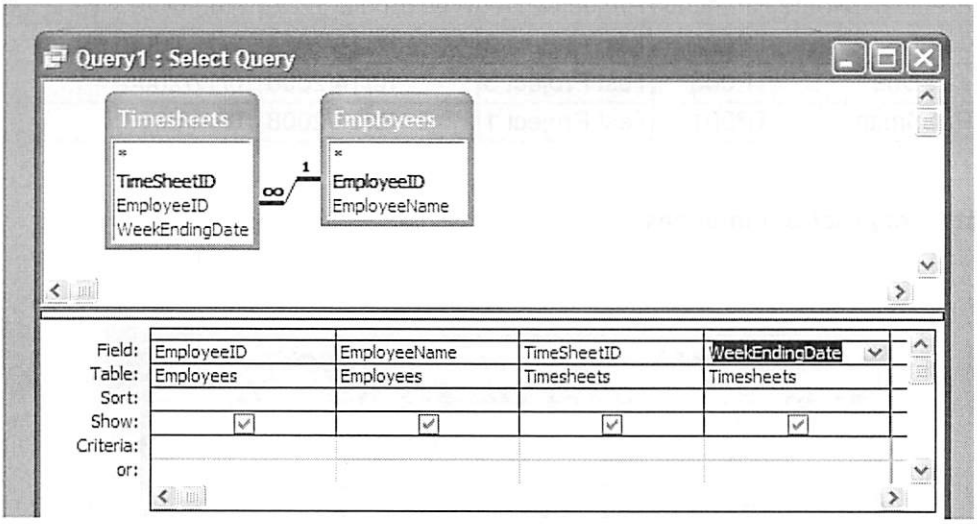
Project ID	Project Name	Work Date	Work Hours
TP003	Test Project 3	0/12/2008	8
TP003	Test Project 3	0/10/2008	3
TP002	Test Project 2	0/11/2008	8
TP001	Test Project 1	0/10/2008	5

Employee Name Pat Smith Employee ID H57AXW
Time Sheet ID 2 Week Ending Date 10/14/2008

Project ID	Project Name	Work Date	Work Hours
TP003	Test Project 3	0/13/2008	3.8
TP002	Test Project 2	0/13/2008	4.2
TP001	Test Project 1	0/14/2008	8

JOB 3: Simple Select Query

Job 3-A
Design View:

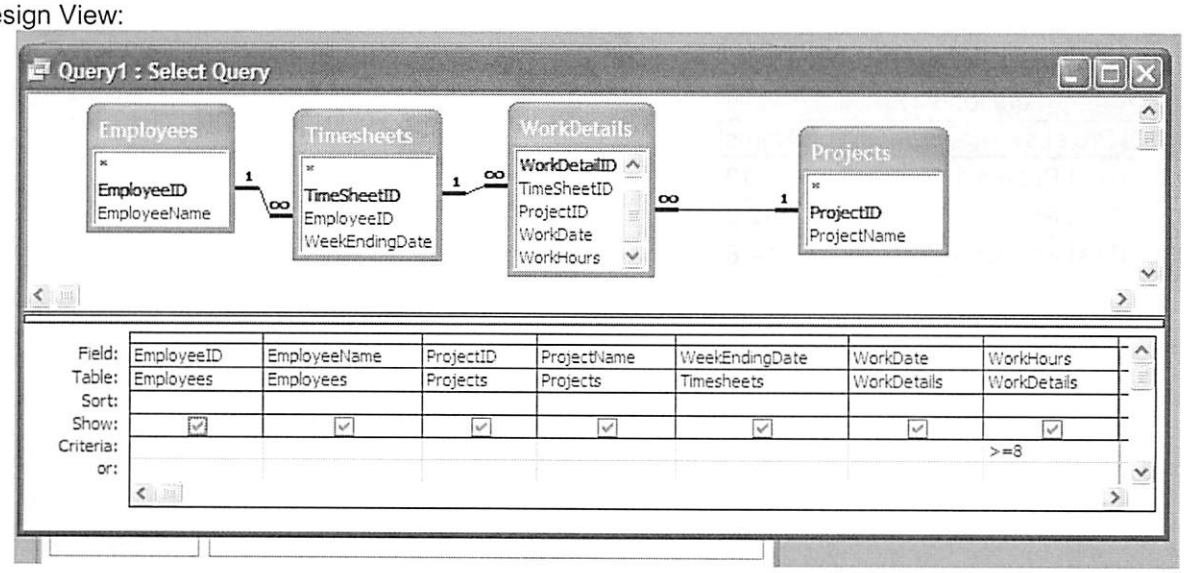


Job 3-B
Execution View:

qryJob4			
EmployeeID	EmployeeName	TimeSheetID	WeekEndingDate
H43AXT	Jan Doe	1	10/14/2008
H57AXW	Pat Smith	2	10/14/2008

JOB 4: Select Query with Criteria

Job 4-A
Design View:

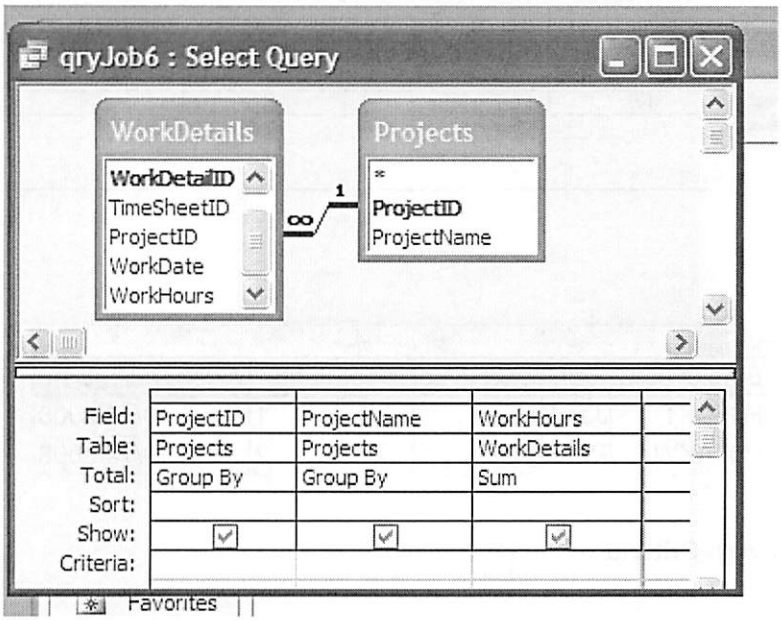


Job 4-B
Execution View:

qryJob5						
EmployeeID	EmployeeName	ProjectID	ProjectName	WeekEndingDate	WorkDate	WorkHours
H43AXT	Jan Doe	TP002	Test Project 2	10/14/2008	10/11/2008	8
H43AXT	Jan Doe	TP003	Test Project 3	10/14/2008	10/12/2008	8
H57AXW	Pat Smith	TP001	Test Project 1	10/14/2008	10/14/2008	8

JOB 5: Select Query that Summarizes

Job 5-A
Design View:



Job 5-B
Execution View:

qryJob6		
ProjectID	ProjectName	SumOfWorkHours
TP001	Test Project 1	13
TP002	Test Project 2	12.2
TP003	Test Project 3	14.8