

CSC1-314 Database Management

Sample question from old exams relevant to exam

1) (3 pts.) Distinguish between Char and VarChar data types in SQL

2) (4 pts.) Explain two methods for defining a primary key using SQL.

SQL.

15) (12 pts) Consider the following tables in an ArtCourse database:

The screenshot shows three database tables:

- CUSTOMER Table:** Columns: CustomerNumber, CustomerName, Phone. Data rows include Ariel Johnson, Robin Green, Charles Jackson, Jeffrey Pearson, Miguel Sears, Leah Kyle, and Lynda Myers.
- COURSE Table:** Columns: CourseNumber, Course, CourseDate, Fee. Data rows include Adv Pastels, Beg Oils, and Int Pastels.
- ENROLLMENT Table:** Columns: CustomerNumber, CourseNumber, AmountPaid. Data rows show enrollment records for various customers and courses.

```

CREATE TABLE CUSTOMER (
    CustomerNumber      Int           NOT NULL AUTO_INCREMENT,
    CustomerName        Char(50)      NOT NULL,
    Phone               Char(12)     NOT NULL,
    CONSTRAINT          CUSTOMER_PK   PRIMARY KEY (CustomerNumber)
);

CREATE TABLE ENROLLMENT (
    CustomerNumber      Int           NOT NULL,
    CourseNumber        Int           NOT NULL,
    AmountPaid          Numeric(8,2)  NULL,
    CONSTRAINT          ENROLLMENT_PK PRIMARY KEY (CustomerNumber, CourseNumber),
    CONSTRAINT          ENROLL_CUST_FK FOREIGN KEY (CustomerNumber)
        REFERENCES CUSTOMER (CustomerNumber)
        ON UPDATE NO ACTION
        ON DELETE NO ACTION,
    CONSTRAINT          ENROLL_COURSE_FK FOREIGN KEY (CourseNumber)
        REFERENCES COURSE (CourseNumber)
        ON UPDATE NO ACTION
        ON DELETE NO ACTION
);

```

a. Provide the SQL to produce the COURSE table structure.

15) b. Explain the meaning of each part of the third CONSTRAINT statement in the ENROLLMENT table.

16. (8pts.) a. Using the tables and values above, what is the result of the following query:

```
SELECT Course  
FROM COURSE;
```

b. This result is, in a way, problematic. In what way is it problematic, and how can this be fixed?

17. (5 pts.) Write an SQL query to list all occurrences of Adv. Pastels. Include all associated data for each occurrence of the class.

18. (7 pts.) Write a SQL query to list all students and courses they are registered for. Include, in this order, CustomerName, Phone, CourseNumber, and AmountPaid. Use a JOIN.

19. (8 pts.) Choose a query—your choice—that illustrates the SQL subquery command. Briefly explain how your query works.

3. (5 pts.) What is indexing when implementing relations? Give the **primary** benefit and the **primary** disadvantage of indexing. When should this technique be used?

7. (6 pts) What is a SQL View? Give three purposes the VIEW might serve in working with a database.

8. (16 pts.) Use the tables provided on the next page for this problem.

a. Write a SQL statement to create a SQL View called PropertyOwners that lists all properties and their owners.

b. Give an SQL query that will list all states with properties, together with how many properties are in each state.

c. Give an SQL query that will list all employees whose first name begins with S.

d. Give an SQL query that will give the names of all employees who worked on property owned by a corporation. (The Initials field is the primary key of the Employee table.)

OWNER:

	OwnerID	OwnerName	Email	Type
1	1	Mary Jones	MJones@somewhere.com	Individual
2	2	DT Enterprises	DTE@dte.com	Corporation
3	3	Sam Douglas	SDouglas@somewhere.com	Individual
4	4	UNY Enterprises	UNYE@unye.com	Corporation
5	5	Doug Samuels	DSamuels@somewhere.com	Individual

EMPLOYEE:

	Initials	Name	CellPhone	ExperienceLevel
1	DRM	Dale R. Murray	206-254-3456	Junior
2	JDM	Jerry D. Murphy	585-545-8765	Master
3	JEF	Joan E. Fontaine	206-254-4567	Senior
4	JHE	John H. Evanston	206-254-2345	Senior
5	SJS	Sam J. Smith	206-254-1234	Master

PROPERTY:

	PropertyID	PropertyName	Street	City	State	Zip	OwnerID
1	1	Eastlake Building	123 Eastlake	Seattle	WA	98119	2
2	2	Elm St Apts	4 East Elm	Lynwood	WA	98223	1
3	3	Jefferson Hill	42 West 7th St	Bellevue	WA	98007	2
4	4	Lake View Apts	1265 32nd Avenue	Redmond	WA	98052	3
5	5	Kodak Heights Apts	65 32nd Avenue	Rochester	NY	14604	4
6	6	Private Residence	1456 48th St	Bellevue	WA	98007	1
7	7	Private Residence	1567 51st St	Bellevue	WA	98007	3
8	8	Private Residence	567 151st St	Rochester	NY	14604	5

SERVICE:

	PropertyID	Initials	Date	HoursWorked
1	1	SJS	2006-05-05 ...	4.50
2	2	JHE	2006-05-08 ...	2.75
3	3	DRM	2006-05-08 ...	4.50
4	4	SJS	2006-05-19 ...	3.00
5	5	JDM	2006-05-12 ...	7.50
6	6	JEF	2006-05-10 ...	2.50
7	7	JHE	2006-05-19 ...	2.50
8	8	JDM	2006-05-15 ...	2.75

1. (8 pts.) What does the acronym ACID refer to with respect to a database management system? Briefly define each term.

2. (6 pts) a. Give a scenario that would result in a lost update problem.

b. Define the term dirty read.

PHP Multiple choice. Circle the correct answer. 2 pts. each

3. How do you write "Hello World" in PHP

- a. `print "Hello World";`
- b. `echo "Hello World";`
- c. `Document.Write("Hello World");`

4. All variables in PHP start with which symbol?

- a. `$`
- b. `!`
- c. `&`

5. How do you get information from a form that is submitted using the "get" method?

- a. `Request.QueryString;`
- b. `Request.Form;`
- c. `$_GET[];`