**EXPERIMENT NO: 4**

**Date of Performance:   
Date of Submission:**

**AIM**:   
Apply DML Commands for the specified system.  
  
**THEORY**:

Data manipulation language allows the users to query and manipulate data in existing schema in object. It allows following data to insert, delete, update and recovery data in schema object.

**DML COMMANDS**

❖ INSERT

❖ UPDATE

❖ DELETE

❖ SELECT

**INSERT**

Values can be inserted into table using insert commands. There are two types of insert commands. They are multiple value insert commands (using ‘&’ symbol) single value insert command (without using ‘&’symbol)

Syntax:

INSERT INTO table\_name VALUES (value1, value2, value3,…..);

(OR)

INSERT INTO table\_name(column1, column2, column3,….) VALUES (value1,value2,value3,…..);

**UPDATE**

This allows the user to update the particular column value using the where clause condition.

Syntax:

UPDATE <table\_name> SET <col1=value> WHERE <column=value>;

**DELETE**

This allows you to delete the particular column values using where clause condition.

Syntax:

DELETE FROM <table\_name> WHERE <condition>;

**SELECT**

The select statement is used to query a database .This statement is used to retrieve the information from the database. The SELECT statement can be used in many ways.

**Selecting some columns:**

To select specified number of columns from the table the Following command is used.

Syntax**:**

SELECT column\_name FROM table\_name;

**Query All Columns**:

To select all columns from the table \* is used instead of column names.

Syntax**:**

SELECT \* FROM table\_name;

**Select using DISTINCT:**

The DISTINCT keyword is used to return only different values (i.e. ) this command does not select the duplicate values from the table.

Syntax**:**

SELECT DISTINCT column name(s) FROM table\_name;

**Select using IN:**

If you want to get the rows which contain certain values, the best way to do it is to use the IN conditional expression.

Syntax**:**

SELECT column name(s) FROM table\_name WHERE   
Column name IN (value1, value2, ……, value-n);

**Select using BETWEEN**:

BETWEEN can be used to get those items that fall within a range.

Syntax**:**

SELECT column name FROM table\_name WHERE Column name BETWEEN value1 AND value2;

**Renaming:**

The select statement can be used to rename either a column or the entire table.

Syntax**:**

**Renaming a column:**

SELECT column name AS new name FROM table\_name;

**Renaming a table:**

SELECT column name FROM table\_name AS newname;

**Sorting**:

The select statement with the **order by Clause** is used to sort the contents Table either in ascending or descending order.

Syntax**:**

SELECT column name FROM table\_name WHERE Condition ORDER BY column name ASC/DESC;

**To select by matching some patterns**:

The select statement along with **like clause** I is used to match strings. The **like** condition is used to specify a search pattern in a column.

Syntax**:**

SELECT column name FROM table\_name WHERE Column name LIKE “% or-“;

**%**: Matches any sub string.

**-** : Matches a single character.

**SELECT INTO statement:**

The SELECT INTO statement is most often used to create backup copies of tables or for archiving records.

Syntax**:**

SELECT Column\_name(s) INTO variable\_name(s) FROM table\_name WHERE condition.

**To Select NULL values**:

We can use the SELECT statement to select the ‘null’ values also.

For retrieving rows where some of the columns have been defined as NULLs there is a special comparison operator of the form IS [NOT]NULL.

Syntax:

SELECT column name FROM table\_name WHERE Column name IS NULL;

**Select using AND, OR, NOT**:

We can combine one or more conditions in a SELECT statement using the logical operators AND, OR, NOT.

**Syntax:**

SELECT column name FROM table\_name WHERE Condition1 LOGICAL OPERATOR condition2;

-- Database: ‘library’

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-- Table structure for table ‘author’

--

CREATE TABLE ‘author’ (

‘ISBN’ char(14) NOT NULL,

‘Author’ varchar(50) NOT NULL,

PRIMARY KEY (‘ISBN’,’Author’)

)

--

-- Dumping data for table ‘author’

--

INSERT INTO ‘author’ (‘ISBN’, ‘Author’) VALUES

('0123704901', 'David A. Patterson'),

('0123704901', 'John L. Hennessy'),

('0123944244', 'David Harris'),

('0123944244', 'Sarah Harris'),

('0124077269', 'David A. Patterson'),

('0124077269', 'John L. Hennessy'),

('0205973361', 'J. Noland White'),

('0205973361', 'Saundra K. Ciccarelli'),

('0321696867', 'Hugh D. Young'),

('0321696867', 'Roger A. Freedman'),

('0321740904', 'Randall D. Knight'),

('0321884078', 'George B. Thomas Jr'),

('0321884078', 'Joel R. Hass'),

('0321884078', 'Maurice D. Weir'),

('0470879521', 'John D. Cutnell'),

('0470879521', 'Kenneth W. Johnson'),

('0596802358', 'Philipp K. Janert'),

('099040207X', 'Mr. Martin Holzke'),

('099040207X', 'Mr. Tom Stachowitz'),

('1285057090', 'Bruce H. Edwards'),

('1285057090', 'Ron Larson'),

('1429237198', 'Daniel L. Schacter'),

('1429237198', 'Daniel T. Gilbert'),

('1429261781', 'David G. Myers'),

('1449600069', 'Julia Lobur'),

('1449600069', 'Linda Null'),

('1452257876', 'A. Michael Huberman'),

('1452257876', 'Matthew B. Miles'),

('1590597699', 'Clare Churcher');

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--

-- Table structure for table ‘book’

--

CREATE TABLE ‘book’ (

‘ISBN’ char(14) NOT NULL,

‘Title’ varchar(100) NOT NULL,

‘Cost’ decimal(5,2) NOT NULL,

‘IsReserved’ tinyint(1) NOT NULL,

‘Edition’ int(11) NOT NULL,

‘PubliPlace’ varchar(30) DEFAULT NULL,

‘Publisher’ varchar(30) NOT NULL,

‘CopyYr’ decimal(4,0) NOT NULL,

‘ShelfID’ int(11) DEFAULT NULL,

‘SubName’ varchar(30) DEFAULT NULL,

PRIMARY KEY (‘ISBN’),

KEY ‘ShelfID’ (‘ShelfID’),

KEY ‘SubName’ (‘SubName’)

)

--

-- Dumping data for table ‘book’

--

INSERT INTO ‘book’ (‘ISBN’, ‘Title’, ‘Cost’, ‘IsReserved’, ‘Edition’, ‘PubliPlace’, ‘Publisher’, ‘CopyYr’, ‘ShelfID’, ‘SubName’) VALUES

('0123704901', 'Computer Architecture: A Quantitative Approach', '24.95', 0, 4, 'US', 'Morgan Kaufmann', '2006', 321, 'Computer Architecture'),

('0123944244', 'Digital Design and Computer Architecture', '52.57', 0, 2, 'US', 'Morgan Kaufmann', '2012', 311, 'Computer Architecture'),

('0124077269', 'Computer Organization and Design', '75.74', 0, 5, 'US', 'Morgan Kaufmann', '2013', 312, 'Computer Architecture'),

('0205973361', 'Psychology', '158.53', 0, 4, '', 'Pearson', '2014', 232, 'Psychology'),

('0321696867', 'University Physics with Modern Physics', '225.76', 0, 13, 'UK', 'Addison-Wesley', '2011', 211, 'Physics'),

('0321740904', 'Physics for Scientists and Engineers: A Strategic Approach with Modern Physics', '228.16', 1, 3, 'US', 'Addison-Wesley', '2012', 212, 'Physics'),

('0321884078', 'Thomas'' Calculus: Early Transcendentals', '198.89', 0, 13, '', 'Pearson', '2013', 111, 'Calculus'),

('0470879521', 'Physics', '209.38', 0, 9, '', 'John Wiley and Sons', '2012', 212, 'Physics'),

('0596802358', 'Data Analysis with Open Source Tools', '26.69', 0, 1, 'US', 'O''Reilly Media', '2010', 131, 'Data Science'),

('099040207X', 'SQL Database for Beginners', '22.49', 0, 1, '', 'LearnToProgram, Incorporated ', '2014', 121, 'Data Science'),

('1285057090', 'Calculus', '245.84', 1, 10, 'US', 'Cengage Learning', '2013', 112, 'Calculus'),

('1429237198', 'Psychology ', '159.48', 1, 2, '', 'Worth Publishers', '2010', 231, 'Psychology'),

('1429261781', 'Psychology', '152.54', 0, 10, '', 'Worth Publishers', '2011', 222, 'Psychology'),

('1449600069', 'The Essentials of Computer Organization and Architecture', '215.95', 0, 3, '', 'Jones & Bartlett Learning', '2010', 322, 'Computer Architecture'),

('1452257876', 'Qualitative Data Analysis: A Methods Sourcebook', '72.42', 0, 3, 'US', 'SAGE Publications, Inc', '2013', 132, 'Data Science'),

('1590597699', 'Beginning Database Design: From Novice to Professional ', '25.82', 0, 1, 'US', 'Apress', '2007', 122, 'Data Science');

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--

-- Table structure for table ‘bookcopy’

--

CREATE TABLE ‘bookcopy’ (

‘ISBN’ char(14) NOT NULL,

‘CopyID’ int(11) NOT NULL,

‘IsChecked’ tinyint(1) NOT NULL DEFAULT '0',

‘IsHold’ tinyint(1) NOT NULL DEFAULT '0',

‘IsDamaged’ tinyint(1) NOT NULL DEFAULT '0',

‘FuRequester’ varchar(15) DEFAULT NULL,

PRIMARY KEY (‘ISBN’,’CopyID’)

)

--

-- Dumping data for table ‘bookcopy’

--

INSERT INTO ‘bookcopy’ (‘ISBN’, ‘CopyID’, ‘IsChecked’, ‘IsHold’, ‘IsDamaged’, ‘FuRequester’) VALUES

('0123704901', 1, 1, 0, 0, 'ywu'),

('0123704901', 2, 0, 0, 1, NULL),

('0123704901', 3, 0, 1, 0, 'hsun'),

('0123944244', 1, 1, 0, 0, NULL),

('0123944244', 2, 0, 1, 0, NULL),

('0124077269', 1, 1, 0, 0, NULL),

('0124077269', 2, 0, 1, 0, NULL),

('0124077269', 3, 0, 1, 0, NULL),

('0124077269', 4, 0, 0, 1, NULL),

('0124077269', 5, 0, 0, 0, NULL),

('0124077269', 6, 0, 0, 0, NULL),

('0124077269', 7, 0, 0, 1, NULL),

('0205973361', 1, 1, 0, 0, NULL),

('0205973361', 2, 0, 1, 0, NULL),

('0205973361', 3, 0, 0, 0, NULL),

('0321696867', 1, 0, 0, 0, NULL),

('0321696867', 2, 0, 0, 0, NULL),

('0321696867', 3, 0, 0, 0, NULL),

('0321696867', 4, 0, 0, 0, NULL),

('0321740904', 1, 0, 0, 1, NULL),

('0321740904', 2, 0, 0, 0, NULL),

('0321740904', 3, 0, 0, 0, NULL),

('0321740904', 4, 0, 0, 0, NULL),

('0321740904', 5, 0, 0, 1, NULL),

('0321740904', 6, 0, 0, 0, NULL),

('0321740904', 7, 0, 0, 0, NULL),

('0321884078', 1, 1, 0, 0, 'ediao'),

('0470879521', 1, 0, 0, 1, NULL),

('0470879521', 2, 0, 1, 0, NULL),

('0470879521', 3, 0, 0, 0, NULL),

('0470879521', 4, 0, 0, 0, NULL),

('0470879521', 5, 0, 0, 0, NULL),

('0470879521', 6, 0, 0, 0, NULL),

('0470879521', 7, 0, 0, 0, NULL),

('0596802358', 1, 0, 1, 0, NULL),

('0596802358', 2, 0, 0, 0, NULL),

('099040207X', 1, 1, 0, 0, 'apiper'),

('099040207X', 2, 0, 1, 0, 'nbatts'),

('099040207X', 3, 0, 0, 1, NULL),

('1285057090', 1, 0, 0, 0, NULL),

('1429237198', 1, 0, 0, 1, NULL),

('1429237198', 2, 0, 0, 0, NULL),

('1429237198', 3, 0, 0, 0, NULL),

('1429261781', 1, 1, 0, 0, NULL),

('1429261781', 2, 0, 0, 0, NULL),

('1449600069', 1, 0, 1, 0, NULL),

('1449600069', 2, 0, 0, 0, NULL),

('1449600069', 3, 0, 0, 1, NULL),

('1452257876', 1, 1, 0, 0, NULL),

('1452257876', 2, 0, 0, 1, NULL),

('1452257876', 3, 0, 0, 0, NULL),

('1452257876', 4, 0, 0, 0, NULL),

('1590597699', 1, 1, 0, 0, NULL);

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--

-- Table structure for table ‘floor’

--

CREATE TABLE ‘floor’ (

‘FloorID’ int(11) NOT NULL,

‘NumAssistant’ int(11) NOT NULL,

‘NumCopier’ int(11) NOT NULL,

PRIMARY KEY (‘FloorID’)

)

--

-- Dumping data for table ‘floor’

--

INSERT INTO ‘floor’ (‘FloorID’, ‘NumAssistant’, ‘NumCopier’) VALUES

(1, 2, 2),

(2, 3, 3),

(3, 2, 3);

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--

-- Table structure for table ‘issue’

--

CREATE TABLE ‘issue’ (

‘Username’ varchar(15) NOT NULL,

‘ISBN’ char(14) NOT NULL,

‘CopyID’ int(11) NOT NULL,

‘IssueID’ int(4) NOT NULL,

‘ExtenDate’ date DEFAULT NULL,

‘IssueDate’ date NOT NULL,

‘ReturnDate’ date NOT NULL,

‘NumExten’ int(11) NOT NULL DEFAULT '0',

PRIMARY KEY (‘Username’,’ISBN’,’CopyID’),

UNIQUE KEY ‘IssueID’ (‘IssueID’),

KEY ‘ISBN’ (‘ISBN’),

KEY ‘issue\_ibfk\_2’ (‘ISBN’,’CopyID’)

)

--

-- Dumping data for table ‘issue’

--

INSERT INTO ‘issue’ (‘Username’, ‘ISBN’, ‘CopyID’, ‘IssueID’, ‘ExtenDate’, ‘IssueDate’, ‘ReturnDate’, ‘NumExten’) VALUES

('aclark', '0124077269', 1, 115, '2015-04-13', '2015-03-31', '2015-04-27', 1),

('ahart', '0123704901', 1, 45, '2015-01-03', '2015-01-03', '2015-01-17', 0),

('ahart', '0123704901', 3, 150, NULL, '2015-04-19', '2015-05-03', 0),

('ahart', '0124077269', 7, 82, '2015-02-05', '2015-02-05', '2015-02-19', 0),

('apiper', '0124077269', 2, 143, NULL, '2015-04-18', '2015-05-02', 0),

('apiper', '0321696867', 1, 64, '2015-01-12', '2015-01-12', '2015-01-26', 0),

('bturner', '0124077269', 3, 169, NULL, '2015-04-20', '2015-05-04', 0),

('bturner', '0321884078', 1, 119, '2015-04-07', '2015-04-07', '2015-04-21', 0),

('cbenson', '1452257876', 1, 116, '2015-04-15', '2015-04-11', '2015-04-29', 1),

('ediao', '0124077269', 1, 74, '2015-02-10', '2015-02-10', '2015-02-24', 0),

('ediao', '0321696867', 1, 89, '2015-02-10', '2015-02-10', '2015-02-24', 0),

('ediao', '099040207X', 2, 148, NULL, '2015-04-16', '2015-04-30', 0),

('gkimberly', '0123704901', 1, 85, '2015-03-03', '2015-03-03', '2015-03-17', 0),

('gkimberly', '0596802358', 1, 177, NULL, '2015-04-20', '2015-05-04', 0),

('gstarr', '0124077269', 2, 73, '2015-01-05', '2015-01-05', '2015-01-19', 0),

('hclifton', '0205973361', 2, 166, NULL, '2015-04-21', '2015-05-05', 0),

('hclifton', '0470879521', 2, 120, NULL, '2015-04-17', '2015-05-01', 0),

('hclifton', '099040207X', 3, 52, '2015-01-11', '2015-01-11', '2015-01-25', 0),

('hsun', '0123704901', 3, 47, '2015-01-05', '2015-01-05', '2015-01-19', 0),

('hsun', '1449600069', 1, 157, NULL, '2015-04-20', '2015-05-04', 0),

('hsun', '1590597699', 1, 72, '2015-02-03', '2015-02-03', '2015-02-17', 0),

('kburns', '0123944244', 1, 61, '2015-01-25', '2015-01-25', '2015-02-09', 0),

('kburns', '0321696867', 2, 54, '2015-01-19', '2015-01-16', '2015-02-03', 1),

('kburns', '099040207X', 1, 117, '2015-04-15', '2015-04-15', '2015-04-29', 0),

('kburns', '1429261781', 1, 111, '2015-04-19', '2015-04-14', '2015-05-03', 1),

('kburns', '1429261781', 2, 88, '2015-03-15', '2015-03-15', '2015-03-29', 0),

('lnarang', '0123944244', 1, 79, '2015-02-11', '2015-02-04', '2015-02-25', 1),

('lnarang', '099040207X', 2, 53, '2015-01-12', '2015-01-12', '2015-01-26', 0),

('lnarang', '1429261781', 1, 75, '2015-03-05', '2015-02-05', '2015-02-26', 2),

('lnoel', '0123704901', 2, 44, '2015-01-01', '2015-01-01', '2015-01-05', 0),

('lnoel', '1590597699', 1, 114, '2015-04-21', '2015-04-14', '2015-05-05', 1),

('nbatts', '0123704901', 2, 65, '2015-01-01', '2015-01-01', '2015-01-15', 0),

('nbatts', '0123944244', 2, 94, '2015-03-30', '2015-03-21', '2015-04-14', 1),

('sgarner', '0124077269', 6, 81, '2015-02-12', '2015-02-12', '2015-02-26', 0),

('sgarner', '0205973361', 1, 112, '2015-04-13', '2015-04-01', '2015-04-27', 1),

('ssong', '0123944244', 2, 184, NULL, '2015-04-21', '2015-05-05', 0),

('ssong', '099040207X', 2, 83, '2015-02-11', '2015-02-11', '2015-02-25', 0),

('thwang', '0205973361', 2, 90, '2015-03-10', '2015-03-10', '2013-03-24', 0),

('thwang', '0470879521', 4, 78, '2015-02-03', '2015-02-03', '2015-02-17', 0),

('ywu', '0123944244', 1, 118, '2015-04-12', '2015-04-12', '2015-04-26', 0);

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--

-- Table structure for table ‘keyword’

--

CREATE TABLE ‘keyword’ (

‘SName’ varchar(30) NOT NULL,

‘Keyword’ varchar(25) NOT NULL,

PRIMARY KEY (‘SName’,’Keyword’)

)

--

-- Dumping data for table ‘keyword’

--

INSERT INTO ‘keyword’ (‘SName’, ‘Keyword’) VALUES

('Calculus', 'Convergent'),

('Calculus', 'Derivative'),

('Calculus', 'Differential Equation'),

('Calculus', 'Integral'),

('Computer Architecture', 'Assembly'),

('Computer Architecture', 'Cache'),

('Computer Architecture', 'Instruction Set'),

('Computer Architecture', 'Memory'),

('Data Science', 'Cloud Computing'),

('Data Science', 'Computer Vision'),

('Data Science', 'Database'),

('Data Science', 'Statistics'),

('Physics', 'Electron'),

('Physics', 'Photoelectric Effect'),

('Physics', 'Quantum Physics'),

('Physics', 'Relativity'),

('Psychology', 'Cognitive'),

('Psychology', 'Neuropsychology');

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--

-- Table structure for table ‘shelf’

--

CREATE TABLE ‘shelf’ (

‘ShelfID’ int(11) NOT NULL,

‘FloorID’ int(11) NOT NULL,

‘AisleID’ int(11) NOT NULL,

PRIMARY KEY (‘ShelfID’),

KEY ‘FloorID’ (‘FloorID’)

)

--

-- Dumping data for table ‘shelf’

--

INSERT INTO ‘shelf’ (‘ShelfID’, ‘FloorID’, ‘AisleID’) VALUES

(111, 1, 11),

(112, 1, 11),

(121, 1, 12),

(122, 1, 12),

(131, 1, 13),

(132, 1, 13),

(211, 2, 21),

(212, 2, 21),

(221, 2, 22),

(222, 2, 22),

(231, 2, 23),

(232, 2, 23),

(311, 3, 31),

(312, 3, 31),

(321, 3, 32),

(322, 3, 32),

(331, 3, 33),

(332, 3, 33);

-- --------------------------------------------------------

--

-- Table structure for table ‘staff’

--

CREATE TABLE ‘staff’ (

‘Username’ varchar(15) NOT NULL,

PRIMARY KEY (‘Username’)

)

--

-- Dumping data for table ‘staff’

--

INSERT INTO ‘staff’ (‘Username’) VALUES

('amoore'),

('mross');

-- --------------------------------------------------------

--

-- Table structure for table ‘student\_faculty’

--

CREATE TABLE ‘student\_faculty’ (

‘Username’ varchar(15) NOT NULL,

‘Name’ varchar(30) NOT NULL,

‘DOB’ date DEFAULT NULL,

‘Email’ varchar(30) NOT NULL,

‘IsDebarred’ tinyint(1) NOT NULL DEFAULT '0',

‘Gender’ char(1) NOT NULL,

‘Address’ varchar(50) DEFAULT NULL,

‘IsFaculty’ tinyint(1) NOT NULL,

‘Penalty’ decimal(5,2) NOT NULL DEFAULT '0.00',

‘Dept’ varchar(50) DEFAULT NULL,

PRIMARY KEY (‘Username’)

)

--

-- Dumping data for table ‘student\_faculty’

--

INSERT INTO ‘student\_faculty’ (‘Username’, ‘Name’, ‘DOB’, ‘Email’, ‘IsDebarred’, ‘Gender’, ‘Address’, ‘IsFaculty’, ‘Penalty’, ‘Dept’) VALUES

('aclark', 'Anne Clark', '1975-04-19', 'aclark@gatech.edu', 0, 'F', '801 Atlantic Dr NW, Atlanta, GA', 1, '0.00', 'College of Computing'),

('ahart', 'Annis Hart', '1987-06-12', 'ahart@gatech.edu', 0, 'F', '209 Oak Street, Dacula, GA', 0, '5.00', NULL),

('amoore', 'Alice Moore', NULL, 'amoore@gatech.edu', 0, 'F', '435 Williams St, Duluth, GA', 0, '0.00', NULL),

('apiper', 'Agustina Piper', '1995-07-09', 'apiper@gatech.edu', 0, 'F', NULL, 0, '0.00', NULL),

('bturner', 'Buck Turner', '1970-11-12', 'bturner@gatech.edu', 0, 'M', '777 Atlantic Drive, Atlanta, GA', 1, '0.00', 'School of Electrical & Computer Engineering'),

('cbenson', 'Carol Benson', '1975-03-21', 'cbenson@gatech.edu', 0, 'M', '801 Atlantic Dr NW, Atlanta, GA', 1, '0.00', 'College of Computing'),

('ediao', 'Enmao Diao', NULL, 'ediao@gatech.edu', 0, 'M', NULL, 0, '0.00', NULL),

('gkimberly', 'Geraldo Kimberly', '1987-09-03', 'gkimberly@gatech.edu', 0, 'M', NULL, 0, '0.00', NULL),

('gmat', 'Gene Mat', '1989-03-25', 'gmat@gatech.edu', 1, 'M', '250 Union Street, Stone Mountain, GA', 0, '110.00', NULL),

('gstarr', 'Gordon Starr', '1989-03-04', 'gstarr@gatech.edu', 0, 'M', NULL, 0, '0.00', NULL),

('hclifton', 'Harriet Clifton', '1965-09-08', 'hclifton@gatech.edu', 0, 'F', '755 Ferst Drive, NW, Atlanta, GA', 1, '12.00', 'School of Industrial & Systems Engineering'),

('hsun', 'Haitian Sun', NULL, 'hsun@gatech.edu', 0, 'M', NULL, 0, '0.00', NULL),

('kburns', 'Katey Burns', '1984-02-28', 'kburns@gatech.edu', 0, 'F', '15 Water Street, Jacksonville Beach, FL', 0, '40.00', NULL),

('kwalls', 'Kathy Walls', '1986-06-12', 'kwalls@gatech.edu', 1, 'F', '48 Bank Street Roswell, Atlanta, GA ', 0, '140.00', NULL),

('lnarang', 'Lina Narang', '1985-08-15', 'lnarang@gatech.edu', 0, 'F', '950 Marietta St NW, Atlanta, GA ', 0, '30.00', NULL),

('lnoel', 'Lazare Noel', '1988-12-10', 'lnoel@gatech.edu', 0, 'M', NULL, 0, '5.10', NULL),

('mross', 'Michael Ross', '1991-10-01', 'mross@gatech.edu', 0, 'M', '282 Sycamore Drive, Hephzibah, GA', 0, '31.20', NULL),

('nbatts', 'Norman Batts', '1992-02-09', 'nbatts@gatech.edu', 0, 'M', NULL, 0, '0.00', NULL),

('sgarner', 'Sheard Garner', '1969-05-30', 'sgarner@gatech.edu', 0, 'M', '777 Atlantic Drive, Atlanta, GA', 1, '35.50', 'School of Electrical & Computer Engineering'),

('ssong', 'Seok Song', '1992-07-05', 'ssong@gatech.edu', 0, 'M', '470 16th St, Atlanta, GA', 0, '0.00', NULL),

('thwang', 'Tiffany Hwang', '1989-08-01', 'thwang@gatech.edu', 0, 'F', '942 Union Street, Stone Mountain, GA', 0, '0.00', NULL),

('ywu', 'Yuxiao Wu', '1993-07-01', 'ywu@gatech.edu', 0, 'F', '935 Marietta St NW, Atlanta, GA', 0, '0.00', NULL),

('zhui', 'Hui Zan', '1995-05-03', 'zhui@gatech.edu', 1, 'M', '350 Ferst Drive, NW, Atlanta, GA', 0, '120.00', NULL);

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--

-- Table structure for table ‘subject’

--

CREATE TABLE ‘subject’ (

‘SubName’ varchar(30) NOT NULL,

‘FloorID’ int(11) NOT NULL,

‘NumJournal’ int(11) NOT NULL,

PRIMARY KEY (‘SubName’),

KEY ‘FloorID’ (‘FloorID’)

)

--

-- Dumping data for table ‘subject’

--

INSERT INTO ‘subject’ (‘SubName’, ‘FloorID’, ‘NumJournal’) VALUES

('Calculus', 1, 23),

('Computer Architecture', 3, 20),

('Data Science', 1, 32),

('Physics', 2, 14),

('Psychology', 2, 18);

-- --------------------------------------------------------

--

-- Table structure for table ‘user’

--

CREATE TABLE ‘user’ (

‘Username’ varchar(15) NOT NULL,

‘Password’ varchar(20) NOT NULL,

PRIMARY KEY (‘Username’)

)

--

-- Dumping data for table ‘user’

--

INSERT INTO ‘user’ (‘Username’, ‘Password’) VALUES

('aclark', 'aclark123'),

('ahart', 'ahart123'),

('amoore', 'amoore123'),

('apiper', 'apiper123'),

('bturner', 'bturner123'),

('cbenson', 'cbenson123'),

('ediao', 'ediao123'),

('gkimberly', 'gkimberly123'),

('gmat', 'gmat123'),

('gstarr', 'gstarr123'),

('hclifton', 'hclifton123'),

('hsun', 'hsun123'),

('kburns', 'kburns123'),

('kwalls', 'kwalls123'),

('lnarang', 'lnarang123'),

('lnoel', 'lnoel123'),

('mross', 'mross123'),

('nbatts', 'nbatts123'),

('sgarner', 'sgarner123'),

('ssong', 'ssong123'),

('thwang', 'thwang123'),

('ywu', 'ywu123'),

('zhui', 'zhui123');

--

-- Constraints for dumped tables

--

--

-- Constraints for table ‘author’

--

ALTER TABLE ‘author’

ADD CONSTRAINT ‘author\_ibfk\_1’ FOREIGN KEY (‘ISBN’) REFERENCES ‘book’ (‘ISBN’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘book’

--

ALTER TABLE ‘book’

ADD CONSTRAINT ‘book\_ibfk\_1’ FOREIGN KEY (‘ShelfID’) REFERENCES ‘shelf’ (‘ShelfID’) ON DELETE SET NULL ON UPDATE CASCADE,

ADD CONSTRAINT ‘book\_ibfk\_2’ FOREIGN KEY (‘SubName’) REFERENCES ‘subject’ (‘SubName’) ON DELETE SET NULL ON UPDATE CASCADE;

--

-- Constraints for table ‘bookcopy’

--

ALTER TABLE ‘bookcopy’

ADD CONSTRAINT ‘bookcopy\_ibfk\_1’ FOREIGN KEY (‘ISBN’) REFERENCES ‘book’ (‘ISBN’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘issue’

--

ALTER TABLE ‘issue’

ADD CONSTRAINT ‘issue\_ibfk\_1’ FOREIGN KEY (‘Username’) REFERENCES ‘student\_faculty’ (‘Username’) ON DELETE CASCADE ON UPDATE CASCADE,

ADD CONSTRAINT ‘issue\_ibfk\_2’ FOREIGN KEY (‘ISBN’, ‘CopyID’) REFERENCES ‘bookcopy’ (‘ISBN’, ‘CopyID’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘keyword’

--

ALTER TABLE ‘keyword’

ADD CONSTRAINT ‘keyword\_ibfk\_1’ FOREIGN KEY (‘SName’) REFERENCES ‘subject’ (‘SubName’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘shelf’

--

ALTER TABLE ‘shelf’

ADD CONSTRAINT ‘shelf\_ibfk\_1’ FOREIGN KEY (‘FloorID’) REFERENCES ‘floor’ (‘FloorID’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘staff’

--

ALTER TABLE ‘staff’

ADD CONSTRAINT ‘staff\_ibfk\_1’ FOREIGN KEY (‘Username’) REFERENCES ‘user’ (‘Username’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘student\_faculty’

--

ALTER TABLE ‘student\_faculty’

ADD CONSTRAINT ‘student\_faculty\_ibfk\_1’ FOREIGN KEY (‘Username’) REFERENCES ‘user’ (‘Username’) ON DELETE CASCADE ON UPDATE CASCADE;

--

-- Constraints for table ‘subject’

--

ALTER TABLE ‘subject’

ADD CONSTRAINT ‘subject\_ibfk\_1’ FOREIGN KEY (‘FloorID’) REFERENCES ‘floor’ (‘FloorID’) ON DELETE CASCADE ON UPDATE CASCADE;

**CONCLUSION / OUTCOME**:

**MARKS & SIGNATURE:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **R1  (3 Marks)** | **R2  (5 Marks)** | **R3  (4 Marks)** | **R4  (3 Marks)** | **Total  (15 Marks)** | **Signature** |
|  |  |  |  |  |  |