Chapter 6

Write sql statements that return the following:

1. select \* from author;
2. Select fname from author;
3. Select title, pubid as “Title Publish ID” from books;
4. Select cost + retail from books;
5. Select distinct category from books;

Finishing Data Handling and   
Review for Midterm Next Week  
  
Oracle 10*g*: SQL

Inserting NULL Value (3 options)

* Omit column name from INSERT INTO clause column list
* Substitute two single quotation marks

Use NULL keyword

Null Value Detection

* How to determine if a column in a row contains a NULL value?
* Select \*
* From <tablename>
* Where <columnname> is NULL;
* DBMS – Database Management System
* A database table is made up of columns and rows (fields and records)
* Each database table must be unique in name within the same schema
* Each field in a database table must be unique within that database table
* DAL stands for Data Access language
* DDL stands for Data Definition Language
* Data Dictionary – information about the structure of the database
* Designing a database, create an E-R Model
* Stands for Entity-Relationship Model
* 3 different types of relationships
  + 1 to 1, a football coach coaches only 1 team
  + 1 to many, many football teams play in only one division

Many to many, an order can contain multiple items, and an item can exist in multiple orders.

* 1NF – First Normal Form, all columns do not contain any repeating values
* SQL – Structured Query Language
* Oracle command: describe
* Use ; or / to execute a statement
* Select \* from <tablename> where <condition>;
* \* returns all rows
* Select fname || lname from author; returns only 1 column concatenating fname and lname
* Select fname, lname returns 2 columns
* Select pubdate as “publish date” from books; (as creates an alias)
* Select distinct fname from author;
  + Returns all fnames only 1 time, no duplicates
  + Select unique fname from author returns same results
* A line break added to a select statement is chr(10).
* Creating table names, must start with letter
* Up to 30 characters
* No spaces allowed in name
* Must contain at least 1 column
* Columns must:
  + Have a valid name, a type, max width, is the column required or not (not null).
  + Different datatypes: varchar2, char, number, date
  + Create table [schema] tablename (
  + Columnname datatype [default value] [not null]
  + …..);
* To delete a table, use drop table tablename;
* Select \* from user\_tables lists all database tables in database
* Describe tablename shows list of columns in tablename
* To create a table from subquery
  + CREATE TABLE tablename
  + AS (SELECT city, state, zip, referredto FROM customers);
* To add/drop/change columns:
  + ALTER TABLE tablename
  + ADD [MODIFY][DROP COLUMN] columnname definition;
* You can only drop one column at a time
* Deletion is permanent
* Primary key can not be dropped from a table
* Alter table tablename set unused (columnname);
* Why it’s good and bad, when should this be used?
* Alter table tablename drop unused columns;
* RENAME tablename TO tablename
* Deleting all rows in a table deletes the rows, but does not reallocate the memory used
* DROP TABLE tablename [PURGE]
* By default without the purge, table and data go to recycle bin.
* Constraints – used to enforce business rules, policies, accuracy of data
* Primary Key, Foreign Key, Unique, Check, Not Null
* Can create constraints at table creation or after
  + Column level approach or table level approach
  + Not null is column level
  + All others are at the table level
* If a data value violates a constraint, entire row is rejected
* ALTER TABLE tablename
* ADD CONSTRAINT pk\_name PRIMARY KEY (column);
* ALTER TABLE tablename
* ADD CONSTRAINT fk\_name FOREIGN KEY (column)
* REFERENCES fktablename (fkcolumnname);
* ALTER TABLE tablename
* ADD CONSTRAINT uk\_name UNIQUE (column);
* ALTER TABLE tablename
* ADD CONSTRAINT ck\_name CHECK (condition);
* ALTER TABLE tablename
* MODIFY (columnname NOT NULL);
* ALTER TABLE tablename
* DISABLE CONSTRAINT constraintname;
* ALTER TABLE tablename
* ENABLE CONSTRAINT constraintname;
* ALTER TABLE tablename
* DROP PRIMARY KEY | UNIQUE (columnname) CONSTRAINT constraintname;
* INSERT INTO tablename (column list)
* VALUES (data list);
* You don’t need to include all columns that exist in tablename
* Omitted ones that have no default value get null values entered
* You can explicitly insert a null value using NULL with no quotes
* Only inserts a single row in the database table
* Copy rows from existing table:
  + INSERT INTO footballteams2(teamid, teamdescription)
  + SELECT teamid, teamdescription
  + FROM footballteams;
* Update Command – adds or changes values to existing row
* UPDATE tablename
* SET columnname = value, columname = value……
* WHERE condition
* Substitution Variables
  + UPDATE footballteams
  + SET teamdescription = ‘&teamdesc’
  + WHERE teamid = &teamid;
* DELETE removes row(s) from a table
* DELETE FROM tablename
* WHERE condition;
* COMMIT
* SAVEPOINT
* ROLLBACK [TO SAVEPOINT name];
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* Table Locks
  + Shared – prevents DML operations from a portion of a database table
  + Exclusive – prevents DML operations from entire table
* LOCK TABLE tablename SHARE MODE;
* LOCK TABLE tablename EXCLUSIVE MODE;
* Lock released on commit or rollback;
* SELECT \* FROM footballteams FOR UPDATE;
* (LOCKS ALL SELECTED ROWS, PREVENTS AN UPDATE OR DELETE ON THE DATA BEING SELECTED)
* Released through commit;