

CS 260 - Database Systems

Lab 1

This lab will address SQL SELECT statements as well as usage of Oracle SQL Developer and MySQL Workbench. You will use the provided scripts to build the MLB database specified at the end of this document in both Oracle and MySQL. All keys are specified in **bold** text, primary keys are underlined and foreign keys are *italicized*.

Please produce two script files (similar to those provided for creating the database), one from Oracle SQL Developer and the other from MySQL Workbench, with the following requirements:

- The file name contains either “Oracle” or “MySQL” and ends in a .sql extension
- The file contains a semicolon (;) after each SQL statement
- The file contains a line comment including the answer number before each answer, as in:

```
-- 1 --  
SELECT *  
FROM MLB_TEAM;
```

These script files can be saved directly from the worksheets in Oracle SQL Developer and MySQL Workbench. They should run all queries in the assignment when executed.

Provide the following SQL queries. Each answer should consist of a single query (possibly containing nested queries).

1. List the team id, league, division, and name for all teams.
2. Find the largest number of complete games pitched.
3. Find the number of players who made their debut in September of last year.
4. Find the biggest difference between a player’s final game and debut dates (hint?: The max function can take another function as an argument).
5. Find the average opponents’ batting average for all pitchers who appeared in at least 25 games.
6. Find the biggest attendance, smallest attendance, and difference between the two amongst all teams.
7. List all of the stadium names that contain “park”, “field”, or “stadium” in ascending order (case insensitive) (you should not use any unnecessary functions in MySQL).
8. Find out how many teams had multiple managers last season. A team will have a separate stint for each manager (which also indicates the order in which that manager managed).

9. Find the best (highest) “stolen base percentage” statistic for all batters with at least 20 stolen base attempts (# of stolen bases + # of times caught stealing). This statistic is computed by dividing the number of stolen bases by the number of stolen base attempts.
10. List the team name, their league, whether they won the world series (WON_WS), their league (WON_LG), their division (WON_DIV), and/or a wild card (WON_WC) for those teams that made it into the playoffs. A team made it to the playoffs if they won their division or a wild card. List the world series winner first, followed by the league winners, division winners, then wild card winners. Otherwise, sort by team name in ascending order.

Assignment 1 Tables

MLB_TEAM	
<u>TEAM_ID</u>	VARCHAR2(3)
LEAGUE	VARCHAR2(2)
DIVISION	VARCHAR2(1)
RANK	NUMBER
GAMES	NUMBER
WINS	NUMBER
LOSSES	NUMBER
WON_DIV	VARCHAR2(1)
WON_WC	VARCHAR2(1)
WON_LG	VARCHAR2(1)
WON_WS	VARCHAR2(1)
NAME	VARCHAR2(50)
PARK	VARCHAR2(25)
ATTENDANCE	NUMBER

MLB_PITCHING	
<u>PLAYER_ID</u>	VARCHAR2(10)
<u>STINT</u>	NUMBER
<i>TEAM_ID</i>	VARCHAR2(3)
WINS	NUMBER
LOSSES	NUMBER
GAMES	NUMBER
COMPLETE_GAMES	NUMBER
SHUT_OUTS	NUMBER
SAVES	NUMBER
OUTS_PITCHED	NUMBER
HITS	NUMBER
EARNED_RUNS	NUMBER
HOMERUNS	NUMBER
WALKS	NUMBER
STRIKEOUTS	NUMBER
OPP_BATTING_AVG	NUMBER
ERA	NUMBER
INTENTIONAL_WALKS	NUMBER
WILD_PITCHES	NUMBER
HIT_BY_PITCH	NUMBER
RUNS_ALLOWED	NUMBER

MLB_MASTER	
<u>PLAYER_ID</u>	VARCHAR2(10)
NAME_FIRST	VARCHAR2(50)
NAME_LAST	VARCHAR2(50)
BIRTH_YEAR	NUMBER
BIRTH_MONTH	NUMBER
BIRTH_DAY	NUMBER
WEIGHT	NUMBER
HEIGHT	NUMBER
BATS	VARCHAR2(1)
THROWS	VARCHAR2(1)
DEBUT	DATE
FINAL_GAME	DATE

MLB_BATTING	
<u>PLAYER_ID</u>	VARCHAR2(9)
<u>STINT</u>	NUMBER
TEAM_ID	VARCHAR2(3)
GAMES	NUMBER
AT_BATS	NUMBER
RUNS	NUMBER
HITS	NUMBER
DOUBLES	NUMBER
TRIPLES	NUMBER
HOMERUNS	NUMBER
RBI	NUMBER
STOLEN_BASES	NUMBER
CAUGHT_STEALING	NUMBER
BASE_ON_BALLS	NUMBER
STRIKE_OUTS	NUMBER
INTENTIONAL_WALKS	NUMBER
HIT_BY_PITCH	NUMBER
MLB_MANAGER	
<u>TEAM_ID</u>	VARCHAR2(3)
<u>STINT</u>	NUMBER
PLAYER_ID	VARCHAR2(10)
GAMES	NUMBER
WINS	NUMBER
LOSSES	NUMBER
RANK	NUMBER