Programming Assignment 01

Online Submission by February 12th (11:59pm)

1. Introduction

The goal of this assignment is for you to create a database of living astronauts and use the database to answer a few queries.

2. Database Schema

2.1. Database Name

You should use `prg01` as the name for your database.

2.2. Table Schema

You should create a single table named `Astronauts` with the following schema.

```
Astronauts (
     id: integer,
     lastName: string,
     firstName: string,
     suffix: string,
     gender: string,
     birth: date,
     city: string,
     state: string,
     country: string,
     status: string )
```

Primary key `id` should be an auto-incremented field. Attributes `city`, `state`, and `country` define the location where each astronaut was born. The attribute `state` should be set to `NULL` if `country` is different than United States. The attribute `status` can be: "active" (currently working), "management" (currently working but not eligible anymore for future flight assignments), and "former" (not working anymore).

2.3. Table Population

You should be able to find information about living astronauts searching the internet. For example, the National Aeronautics and Space Administration (NASA) maintains a web page of astronaut[1] biographies at http://www.jsc.nasa.gov/Bios. Wikipedia is also a good source of information. You should try to make your

[1] For this assignment, an astronaut is a person that was trained by a spaceflight program and served in a space mission. That includes astronauts, cosmonauts, and "taikonauts".

database as comprehensive and accurate as possible. Bonus points will be given to the team that presents the best collection of information.

3. Queries

When you are done populating your table, you should write the following queries using SQL syntax. Assume all queries are restricted to living astronauts.

a) the total number of astronauts.

b) the total number of American astronauts.

c) the list of nationalities of all astronauts in alphabetical order.

d) all astronaut names ordered by last name (use the format `Last Name, First Name, Suffix` to display the names).

e) the total number of astronauts by gender.

f) the total number of female astronauts that are still active.

g) the total number of American female astronauts that are still active.

h) the list of all American female astronauts that are still active ordered by last name (use the same name format used in d).

i) the list of Chinese astronauts, displaying only their names and ages (use the same name format used in d).

j) the total number of astronauts by country.

k) the total number of American astronauts per state ordered by the totals in descendent order.

l) the total number of astronauts by statuses (i.e., active, management, or former).

m) name and age of all non-American astronauts in alphabetical order (use the same name format used in d).

n) the average age of all American astronauts that are still active.

4. Submission

This programming assignment can be done by teams of two students. Only one of the members of the team needs to submit. Submission should be done online using Canvas by February 12th (11:59pm).

You should submit two files only: `Astronauts.sql` and `Astronauts.csv`.

`Astronauts.sql` is a SQL source file containing all the necessary SQL commands to create the database, create the table, populate the table using `LOAD DATA INFILE`, and query the table. The `LOAD DATA INFILE` should be used to read the `Astronauts.csv` file that contains all of the astronaut records. Add comments to your `Astronauts.sql` file explaining each SQL command. Add a header comment with the teammate names.

5. Point Distribution

Points	Description
02	Database was created with the correct name
10	Table follows specification
03	Table has primary key and `id` is an auto-incremented field
15	Table was populated using `LOAD DATA INFILE`
70	5 points for each query
100	TOTAL

+5 points will be assigned to the team that had the most comprehensive and accurate table.

+5 points will be assigned to any team that added at least one extra attribute and had one query that used the new attribute(s). For example, it would be interesting to add the number of days in space and be able to ask questions like: which astronaut stayed the longest time in space?