

Why We're Here

I play a baseball sim called Out of the Park Baseball. I have been playing it since 2005. On and off for a couple of years, I have been fooling around with databases. I'm not a programmer or a DBA, but I love data. Ever since I learned how to do my first SELECT statement, something just clicked inside me. I dabbled in Access here and there with the Lahman Database but never went too deep because I had other commitments, other interests, and no goal in mind for any database knowledge.

Earlier this year, a project for work required me to get a quick understanding of Access and SQL Server. I loved learning it and I suddenly saw a potential goal to direct my efforts into learning more about database management: I would roll my own MySQL server to enhance my OOTP gameplay!

I would learn about remote database management; I would learn about complex JOINS, I would learn how to build complex queries in order to calculate advanced statistics.

Well, I started. Then I got overwhelmed and I stopped. Then I started again. Stopped again. I started again about a week ago- getting further than I had before, but still nowhere near my goal. Just as I started to get frustrated again, it occurred to me that I need to slow down.

That's what this blog is for: It will allow me to slow down, consider what I am doing, how I want to do it, give me a chance to learn, and to rubber-duck my way to success.

Comments will be open in case any of my imaginary readers want to chime in with advice or encouragement.

Since this is almost entirely for my own benefit, I am not going to explain much of the OOTP minutia or any but the more advanced statistics.

OK, here we go!

Tables Post 1: Some Notes, Creating the DB, Cities and Nations Tables

There are a lot of tables that can be dumped from OOTP, and at this point I don't need nearly all of them. With the exception of the 'nations' and 'cities' tables, they will all be focused on teams, leagues, and players.

A few important notes that I want to put up front so they don't get lost in the code:

- **I am not using Foreign Keys (FK's) in this database.** There are two reasons for this. First, probably due to ignorance, I was having a lot of trouble getting them set up. There are only so many hours a person can research solutions to Error 1215 before he just throws up his hands and quits. Second, as long as we're properly indexed, FK's shouldn't have much impact on query performance. As long as I can trust the data OOTP dumps to have referential integrity (and I do), then we should be OK.
- I've added AUTO_INCREMENT ID's to player_career and league_history tables. Without them, the Primary Keys for these tables would be ridiculously composite, and still have PK violations when data is imported. I will note these in the code.

Create the database. Easy enough. This bit wipes the database and starts fresh:

```
DROP DATABASE IF EXISTS TEST1;  
CREATE DATABASE TEST1;  
USE TEST1;
```

Create nations table

I don't have any plans to use this table right now, I can maybe see a potential use case when using a larger universe.

```
CREATE TABLE `nations` (  
  `nation_id` int(11) NOT NULL,  
  `name` varchar(50) DEFAULT NULL,  
  `short_name` varchar(50) DEFAULT NULL,  
  `abbreviation` varchar(50) DEFAULT NULL,  
  `demonym` varchar(50) DEFAULT NULL,  
  `population` int(11) DEFAULT NULL,
```

```

`gender` int(11) DEFAULT NULL,
`baseball_quality` int(11) DEFAULT NULL,
`continent_id` int(11) DEFAULT NULL,
`main_language_id` int(11) DEFAULT NULL,
`quality_total` int(11) DEFAULT NULL,
`capital_id` int(11) DEFAULT NULL,
`use_hardcoded_ml_player_origins` tinyint(4) DEFAULT NULL,
`this_is_the_usa` tinyint(4) DEFAULT NULL,
PRIMARY KEY (`nation_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

Create cities table

Similar to above, though more potential use cases. Particularly thinking about the owner goals in game where you are asked to sign a “home town player.”

```

CREATE TABLE `cities` (
  `city_id` int(11) NOT NULL,
  `nation_id` int(11) DEFAULT NULL,
  `state_id` int(11) DEFAULT NULL,
  `name` varchar(80) DEFAULT NULL,
  `abbreviation` varchar(10) DEFAULT NULL,
  `latitude` double DEFAULT NULL,
  `longitude` double DEFAULT NULL,
  `population` int(11) DEFAULT NULL,
  `main_language_id` int(11) DEFAULT NULL,
  PRIMARY KEY (`city_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

Tables 2: Leagues, Sub_Leagues, and Divisions

One interesting feature in each of these tables is the 'gender' column. Leaving aside the question of why leagues, subleagues, or divisions would need to be gendered (at least in English), it does beg the question of whether, perhaps OOTP will ever consider mixed or even female-only leagues.

Creating the leagues table

The **leagues** table has a LOT of columns. Part of me thinks that I should figure out a way to truncate the data before loading it into the database because there's just sooo many! And I really only need the first several. On the other hand, I would have to this every time I generated a data dump. There will never be so many leagues that *this* table will become too large, so I will leave it alone for now. Note that we are only interested in the first 4 columns:

```
CREATE TABLE `leagues` (  
  `league_id` int(11) NOT NULL,  
  `name` varchar(50) DEFAULT NULL,  
  `abbr` varchar(50) DEFAULT NULL,  
  `nation_id` int(11) DEFAULT NULL,  
  `language_id` int(11) DEFAULT NULL,  
  `gender` int(11) DEFAULT NULL,  
  `historical_league` tinyint(4) DEFAULT NULL,  
  `logo_file_name` varchar(200) DEFAULT NULL,  
  `players_path` varchar(200) DEFAULT NULL,  
  `start_date` date DEFAULT NULL,  
  `preferred_start_date` date DEFAULT NULL,  
  `pitcher_award_name` varchar(50) DEFAULT NULL,  
  `mvp_award_name` varchar(50) DEFAULT NULL,  
  `rookie_award_name` varchar(50) DEFAULT NULL,  
  `defense_award_name` varchar(50) DEFAULT NULL,  
  `fictional_players` tinyint(4) DEFAULT NULL,  
  `start_fantasy_draft` tinyint(4) DEFAULT NULL,  
  `trading_deadline` tinyint(4) DEFAULT NULL,  
  `winter_meetings` tinyint(4) DEFAULT NULL,  
  `arbitration_offering` tinyint(4) DEFAULT NULL,  
  `show_draft_pool` tinyint(4) DEFAULT NULL,  
  `rosters_expanded` tinyint(4) DEFAULT NULL,
```

```
`draft_date` date DEFAULT NULL,  
`rule_5_draft_date` date DEFAULT NULL,  
`roster_expand_date` date DEFAULT NULL,  
`trade_deadline_date` date DEFAULT NULL,  
`allstar_date` date DEFAULT NULL,  
`days_until_deadline` int(11) DEFAULT NULL,  
`next_draft_type` int(11) DEFAULT NULL,  
`parent_league_id` int(11) DEFAULT NULL,  
`league_state` smallint(6) DEFAULT NULL,  
`season_year` int(11) DEFAULT NULL,  
`historical_year` smallint(6) DEFAULT NULL,  
`league_level` smallint(6) DEFAULT NULL,  
`stats_detail` int(11) DEFAULT NULL,  
`historical_import_path` varchar(200) DEFAULT NULL,  
`foreigner_percentage` smallint(6) DEFAULT NULL,  
`was_ootp6` tinyint(4) DEFAULT NULL,  
`was_65` tinyint(4) DEFAULT NULL,  
`allstar_game` tinyint(4) DEFAULT NULL,  
`auto_schedule_allstar` tinyint(4) DEFAULT NULL,  
`allstar_team_id0` int(11) DEFAULT NULL,  
`allstar_team_id1` int(11) DEFAULT NULL,  
`schedule_file_1` varchar(200) DEFAULT NULL,  
`schedule_file_2` varchar(200) DEFAULT NULL,  
`rules_rule_5` tinyint(4) DEFAULT NULL,  
`rules_minor_league_options` tinyint(4) DEFAULT NULL,  
`rules_trading` tinyint(4) DEFAULT NULL,  
`rules_draft_pick_trading` tinyint(4) DEFAULT NULL,  
`rules_financials` tinyint(4) DEFAULT NULL,  
`rules_amateur_draft` tinyint(4) DEFAULT NULL,  
`rules_fa_compensation` tinyint(4) DEFAULT NULL,  
`rules_schedule_balanced` tinyint(4) DEFAULT NULL,  
`rules_schedule_inter_league` tinyint(4) DEFAULT NULL,  
`rules_schedule_force_start_day` tinyint(4) DEFAULT NULL,  
`rules_trades_other_leagues` tinyint(4) DEFAULT NULL,  
`rules_free_agents_from_other_leagues` tinyint(4) DEFAULT NULL,  
`rules_free_agents_leave_other_leagues` tinyint(4) DEFAULT NULL,  
`rules_allstar_game` tinyint(4) DEFAULT NULL,  
`rules_spring_training` tinyint(4) DEFAULT NULL,  
`rules_active_roster_limit` smallint(6) DEFAULT NULL,  
`rules_secondary_roster_limit` smallint(6) DEFAULT NULL,  
`rules_expanded_roster_limit` smallint(6) DEFAULT NULL,
```

```

`rules_min_service_days` smallint(6) DEFAULT NULL,
`rules_waiver_period_length` smallint(6) DEFAULT NULL,
`rules_dfa_period_length` smallint(6) DEFAULT NULL,
`rules_fa_minimum_years` smallint(6) DEFAULT NULL,
`rules_salary_arbitration_minimum_years` smallint(6) DEFAULT NULL,
`rules_minor_league_fa_minimum_years` smallint(6) DEFAULT NULL,
`rules_foreigner_limit` smallint(6) DEFAULT NULL,
`rules_foreigner_pitcher_limit` smallint(6) DEFAULT NULL,
`rules_foreigner_hitter_limit` smallint(6) DEFAULT NULL,
`rules_schedule_games_per_team` smallint(6) DEFAULT NULL,
`rules_schedule_typical_series` smallint(6) DEFAULT NULL,
`rules_schedule_preferred_start_day` smallint(6) DEFAULT NULL,
`rules_amateur_draft_rounds` smallint(6) DEFAULT NULL,
`rules_minimum_salary` int(11) DEFAULT NULL,
`rules_salary_cap` int(11) DEFAULT NULL,
`rules_player_salary0` int(11) DEFAULT NULL,
`rules_player_salary1` int(11) DEFAULT NULL,
`rules_player_salary2` int(11) DEFAULT NULL,
`rules_player_salary3` int(11) DEFAULT NULL,
`rules_player_salary4` int(11) DEFAULT NULL,
`rules_player_salary5` int(11) DEFAULT NULL,
`rules_player_salary6` int(11) DEFAULT NULL,
`rules_player_salary7` int(11) DEFAULT NULL,
`rules_average_coach_salary` int(11) DEFAULT NULL,
`rules_average_attendance` int(11) DEFAULT NULL,
`rules_average_national_media_contract` int(11) DEFAULT NULL,
`rules_cash_maximum` int(11) DEFAULT NULL,
`rules_average_ticket_price` double DEFAULT NULL,
`rules_revenue_sharing` tinyint(4) DEFAULT NULL,
`rules_national_media_contract_fixed` tinyint(4) DEFAULT NULL,
`rules_owner_decides_budget` tinyint(4) DEFAULT NULL,
`rules_schedule_auto_adjust_dates` tinyint(4) DEFAULT NULL,
`rules_historical_import_rookies` tinyint(4) DEFAULT NULL,
`avg_rating_contact` int(11) DEFAULT NULL,
`avg_rating_gap` int(11) DEFAULT NULL,
`avg_rating_power` int(11) DEFAULT NULL,
`avg_rating_eye` int(11) DEFAULT NULL,
`avg_rating_strikeouts` int(11) DEFAULT NULL,
`avg_rating_stuff` int(11) DEFAULT NULL,
`avg_rating_movement` int(11) DEFAULT NULL,
`avg_rating_control` int(11) DEFAULT NULL,

```

```
`avg_rating_fielding0` int(11) DEFAULT NULL,  
`avg_rating_fielding1` int(11) DEFAULT NULL,  
`avg_rating_fielding2` int(11) DEFAULT NULL,  
`avg_rating_fielding3` int(11) DEFAULT NULL,  
`avg_rating_fielding4` int(11) DEFAULT NULL,  
`avg_rating_fielding5` int(11) DEFAULT NULL,  
`avg_rating_fielding6` int(11) DEFAULT NULL,  
`avg_rating_fielding7` int(11) DEFAULT NULL,  
`avg_rating_fielding8` int(11) DEFAULT NULL,  
`avg_rating_fielding9` int(11) DEFAULT NULL,  
`avg_rating_overall` int(11) DEFAULT NULL,  
`avg_rating_age` double DEFAULT NULL,  
`league_totals_ab` int(11) DEFAULT NULL,  
`league_totals_h` int(11) DEFAULT NULL,  
`league_totals_d` int(11) DEFAULT NULL,  
`league_totals_t` int(11) DEFAULT NULL,  
`league_totals_hr` int(11) DEFAULT NULL,  
`league_totals_bb` int(11) DEFAULT NULL,  
`league_totals_hp` int(11) DEFAULT NULL,  
`league_totals_k` int(11) DEFAULT NULL,  
`league_totals_pa` int(11) DEFAULT NULL,  
`league_totals_babip` double DEFAULT NULL,  
`league_totals_mod_h` double DEFAULT NULL,  
`league_totals_mod_d` double DEFAULT NULL,  
`league_totals_mod_t` double DEFAULT NULL,  
`league_totals_mod_hr` double DEFAULT NULL,  
`league_totals_mod_bb` double DEFAULT NULL,  
`league_totals_mod_hp` double DEFAULT NULL,  
`league_totals_mod_k` double DEFAULT NULL,  
`league_totals_mod_babip` double DEFAULT NULL,  
`ml_equivalencies_avg` double DEFAULT NULL,  
`ml_equivalencies_hr` double DEFAULT NULL,  
`ml_equivalencies_eb` double DEFAULT NULL,  
`ml_equivalencies_bb` double DEFAULT NULL,  
`ml_equivalencies_k` double DEFAULT NULL,  
`ml_equivalencies_hp` double DEFAULT NULL,  
`player_creation_modifier_contact` double DEFAULT NULL,  
`player_creation_modifier_gap` double DEFAULT NULL,  
`player_creation_modifier_power` double DEFAULT NULL,  
`player_creation_modifier_eye` double DEFAULT NULL,  
`player_creation_modifier_strikeouts` double DEFAULT NULL,
```

```

`player_creation_modifier_stuff` double DEFAULT NULL,
`player_creation_modifier_movement` double DEFAULT NULL,
`player_creation_modifier_control` double DEFAULT NULL,
`player_creation_modifier_speed` double DEFAULT NULL,
`player_creation_modifier_fielding` double DEFAULT NULL,
`financial_coefficient` double DEFAULT NULL,
`world_start_year` int(11) DEFAULT NULL,
`current_date` date DEFAULT NULL,
`background_color_id` varchar(8) DEFAULT NULL,
`text_color_id` varchar(8) DEFAULT NULL,
`scouting_coach_id` int(11) DEFAULT NULL,
PRIMARY KEY (`league_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

Creating the sub_leagues table

The **sub_leagues** table is much more manageable. It serves to name each league's sub_leagues and attach them to a parent league. Note here that I made a composite PK rather than adding an AUTO_INCREMENT:

```

CREATE TABLE `sub_leagues` (
  `league_id` int(11) NOT NULL,
  `sub_league_id` int(11) NOT NULL,
  `name` varchar(50) DEFAULT NULL,
  `abbr` varchar(50) DEFAULT NULL,
  `gender` int(11) DEFAULT NULL,
  `designated_hitter` tinyint(4) DEFAULT NULL,
  PRIMARY KEY (`league_id`,`sub_league_id`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

Creating the divisions table

This one, too, is very straightforward. Again, a composite primary key rather than an AUTO_INCREMENT:

```

CREATE TABLE `divisions` (
  `league_id` int(11) NOT NULL,
  `sub_league_id` int(11) NOT NULL,
  `division_id` int(11) NOT NULL,
  `name` varchar(50) DEFAULT NULL,
  `gender` int(11) DEFAULT NULL,
  PRIMARY KEY (`league_id`,`sub_league_id`,`division_id`)
)

```



```
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

