"Introduction to Databases", Laboratory Exercise 1

Laboratory Exercise №1

What's inside our database. Additional tasks Week 02.

Introduction to Additional Task. Baseball is a very popular sport in the North American region as well as in some countries in East Asia. If you're not familiar, in baseball we have two teams of 9 players that take turns batting (hitting a ball) and fielding (catching and throwing hit balls). Points ("runs") are scored when a hitting team's player hits a ball and eventually touches all bases before the fielding team's players have the chance to get them "out". We have **a database called `players.db`, with a table called `players`. We will try to answer several questions about the players who've played from 1871 to 2023.**

In the `players` table, you'll find the following columns:

- `id`, which uniquely identifies each row (player) in the table
- `first_name`, which is the first name of the player
- `last_name`, which is the last name of the player
- `bats`, which is the side (R for right or L for left) the player bats on
- `throws`, which is the hand (R for right or L for left) the player throws with
- `weight`, which is the player's weight in pounds
- `height`, which is the player's height in inches
- `debut`, which is the date (expressed as YYYY-MM-DD) the player began their career in the MLB
- `final_game`, which is the date (expressed as YYYY-MM-DD) the player played their last game
- `birth_year`, which is the year the player was born
- `birth_month`, which is the month (expressed as an integer) the player was born
- `birth_day`, which is the day the player was born
- `birth_city`, which is the city in which the player was born
- `birth_state`, which is the state in which the player was born
- `birth_country`, which is the country in which the player was born

Task 1. For each of the following questions from the bullet list below, you should **write a single SQL query** that outputs the results specified by each problem. **Your response must take the form of a single SQL query**.

- Write a SQL query to find the hometown (including city, state, and country) of Jackie Robinson.
- Write a SQL query to find the side (e.g., right or left) Babe Ruth hit.
- Write a SQL query to find the ids of rows for which a value in the column debut is missing.
- Write a SQL query to find the first and last names of players who were not born in the United States. Sort the results alphabetically by first name, then by last name.
- Write a SQL query to return the first and last names of all right-handed batters. Sort the results alphabetically by first name, then by last name.
- Write a SQL query to return the first name, last name, and debut date of players born in Pittsburgh, Pennsylvania (PA). Sort the results first by debut date—from most recent to oldest—then alphabetically by first name, followed by last name.
- Write a SQL query to count the number of players who bat (or batted) right-handed and throw (or threw) left-handed, or vice versa.
- Write a SQL query to find the average height and weight, rounded to two decimal places, of baseball players who debuted on or after January 1st, 2000. Return the columns with the name "Average Height" and "Average Weight", respectively.

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- Write a SQL query to find the players who played their final game in 2022. Sort the results alphabetically by first name, then by last name.
- Write SQL query to answer a question of your choice. This query should:
    - Make use of `AS` to rename a column
    - Involve at least condition, using `WHERE`
    - Sort by at least one column using `ORDER BY`