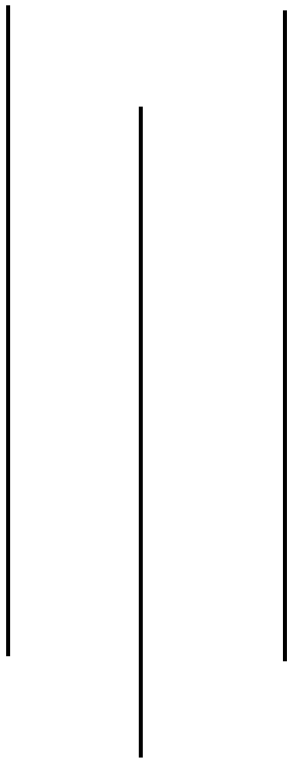
Submitted by:

SUBHECHHA SHRESTHA
1001393553

PROJECT 1

PHASE 1

DATABASE AND FILE STRUCTURES



HONOR CODE

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or that I contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Design Description

For the design, I divided the entities as Stadium, MATCH, PLAYERS and Teams/Countries based on the design ideas and they had their attributes clearly mentioned. For relationships, I chose three special relationships such as scored_goal, got_card and substitutes.

Scored_goal – As we need to connect players that scored goal in a match

Got_card – As we need to connect players that got disciplinary card in the match

Substitutes: I made a recursive relationship for players as players were substituted by players.

Knock out was divided as subtypes given in the description. But for G-types I decided to not create specialization.

Player was not divided into subclass as it was a weak entity.

Attributes with unique property were underlined to determine key attributes and one shorter attribute was chosen among the candidates for primary key.

For Example:

For Country entity, I chose CNAME as the primary attribute for relational table.

For Players entity, I did not have any primary key as player was a weak entity. But for its representation I chose Player Number (P No) as a partial key.

For Match entity, I chose GID as the primary attribute for relational table as it was the only key attribute.

For stadium entity, I chose Stadium ID as the main attribute as it was the only key attribute.

The EER diagram for description above is given in fig 1. below.

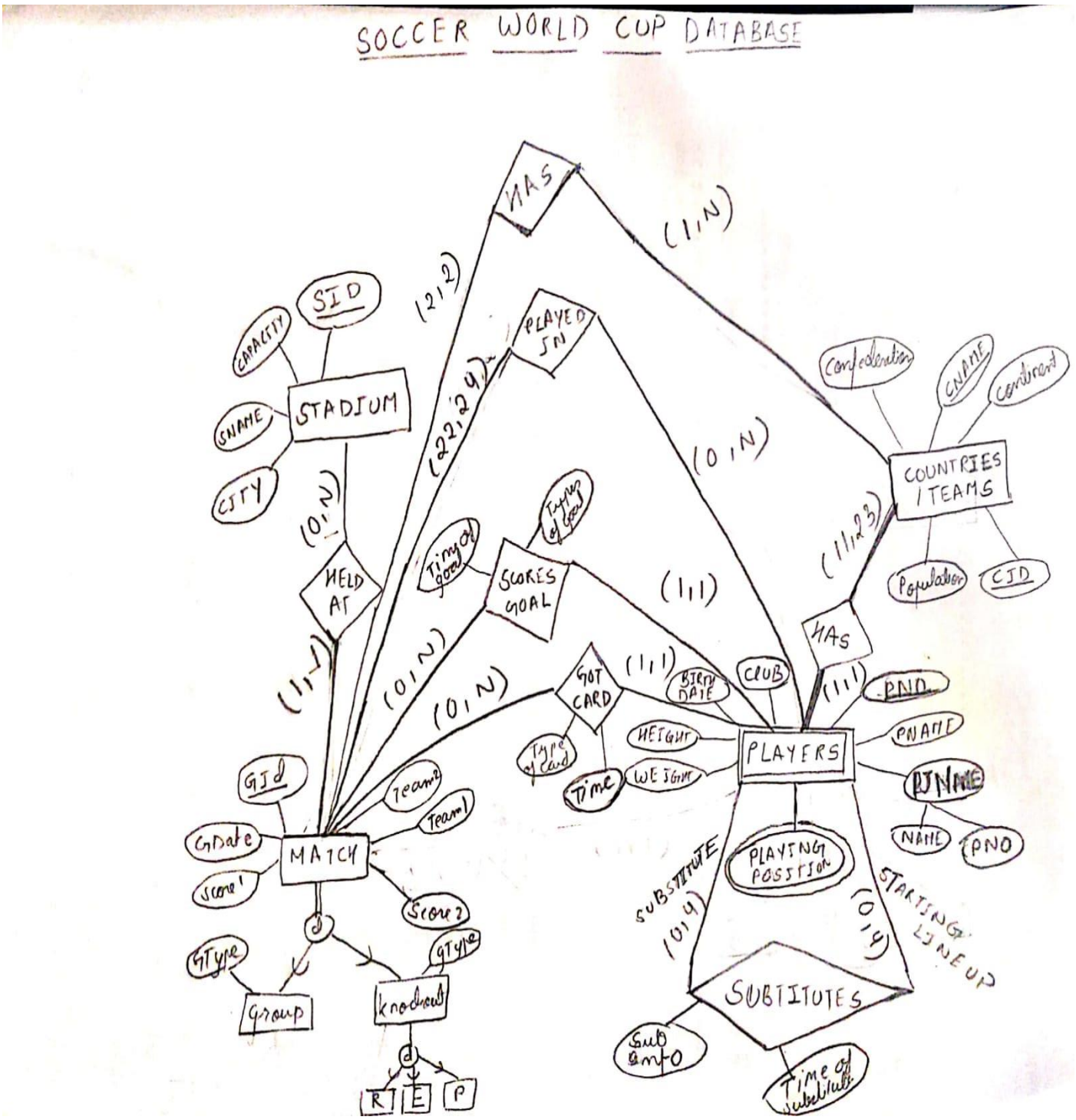


Fig: EER diagram representing conceptual schema for soccer world cup database

Relational Model Description (Mapping from conceptual to relation)

In the conceptual schema, there are different relationships established between the entities. Based on the relationship, they are mapped to the relational schema along with some relationship themselves.

We have,

Stadium(0,N)—Held At--Match(1,1)

Players(0,N)----played in -- Match(22,24)

Players(1,1)—Scored goal--Match(0,N)

Players(1,1)- Got Card---Match(0,N)

Players{Substitute}(0,4)---Substitutes----Player {StartingLineup}(0,4)

Match(2,2)-- has---Teams(1,N)

Countries/Teams(11,23)---has---Players(1,1)

This relationship is mapped out in a relational schema given in fig.2 below

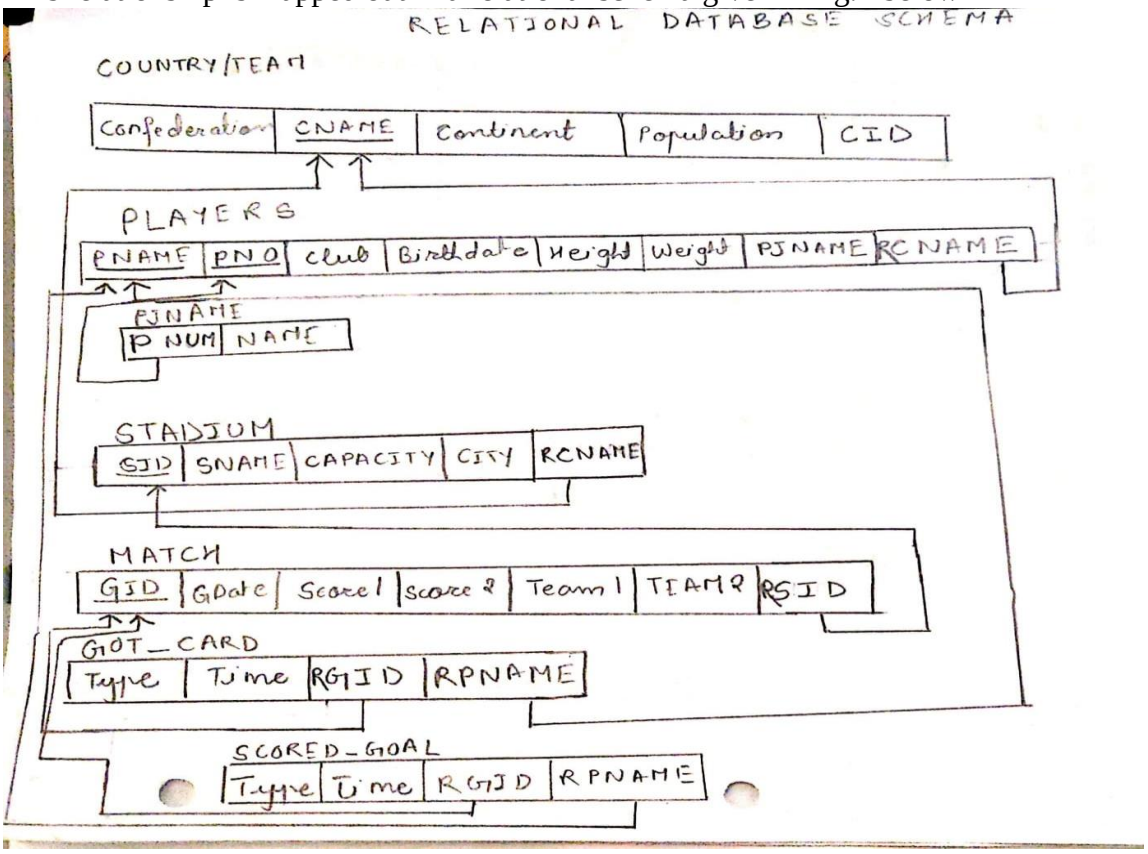


Fig 2: Figure representing relational database schema

Proof of Executing Create Statement along with figure for table in Xampp

CREATE DATABASE project1_phase1;
USE project1_phase1;
CREATE TABLE country (confederation VARCHAR (20), cname VARCHAR (20) NOT NULL, continent VARCHAR (15), population INT (20), cid CHAR (9) NOT NULL);

CREATE TABLE players (pname VARCHAR (20) NOT NULL, pjname VARCHAR (20), club VARCHAR (15), pno INT (20) NOT NULL, birthdate DATE, height DECIMAL (5,2), weight DECIMAL (5,2));

CREATE TABLE match_results (gid CHAR (9) NOT NULL, gdate DATE, score1 INT (3),score2 INT(3), team1 VARCHAR(20), team2 VARCHAR(20));

CREATE TABLE stadium (sid CHAR (9) NOT NULL, sname VARCHAR(20) NOT NULL, city VARCHAR(25), capacity INT(20));

CREATE TABLE got_card (type CHAR (20) NOT NULL, time TIME);

CREATE TABLE scored_goal (type CHAR (20) NOT NULL, time TIME);
SHOW TABLES;
All the figures obtained from create statement in Xampp is listed below along with create statements' screenshot.

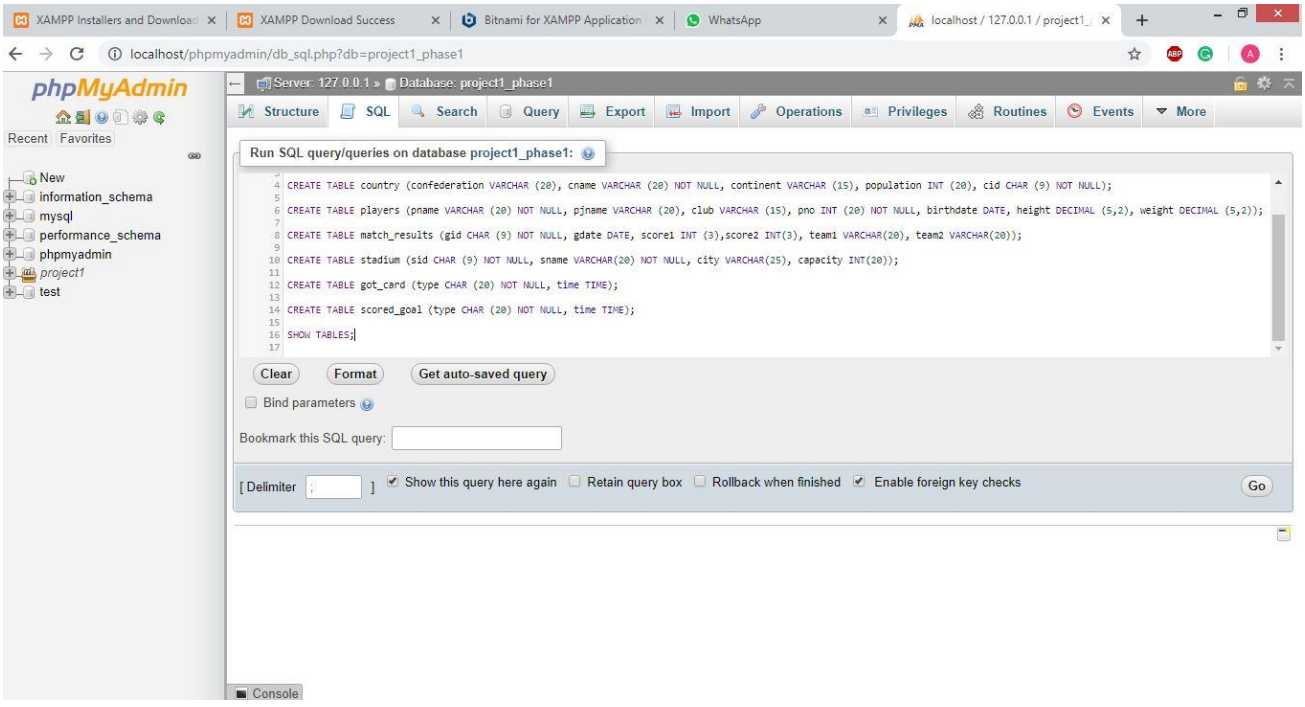


Fig 3 : Create Statements

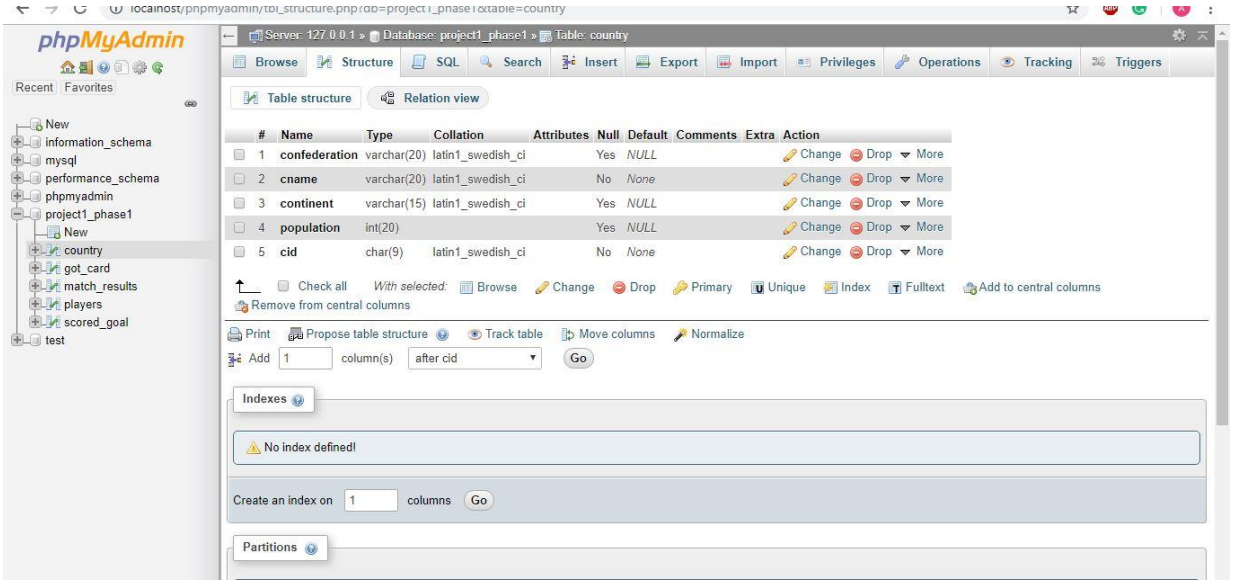


Fig 4: table for country entity

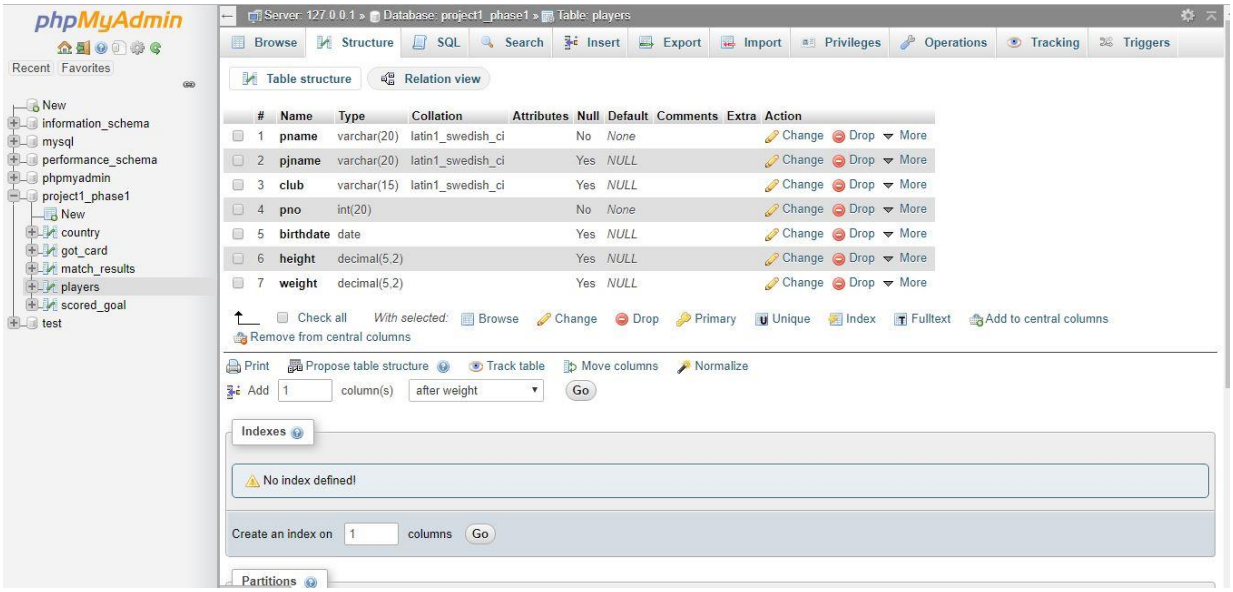


Fig 5: table for player entity

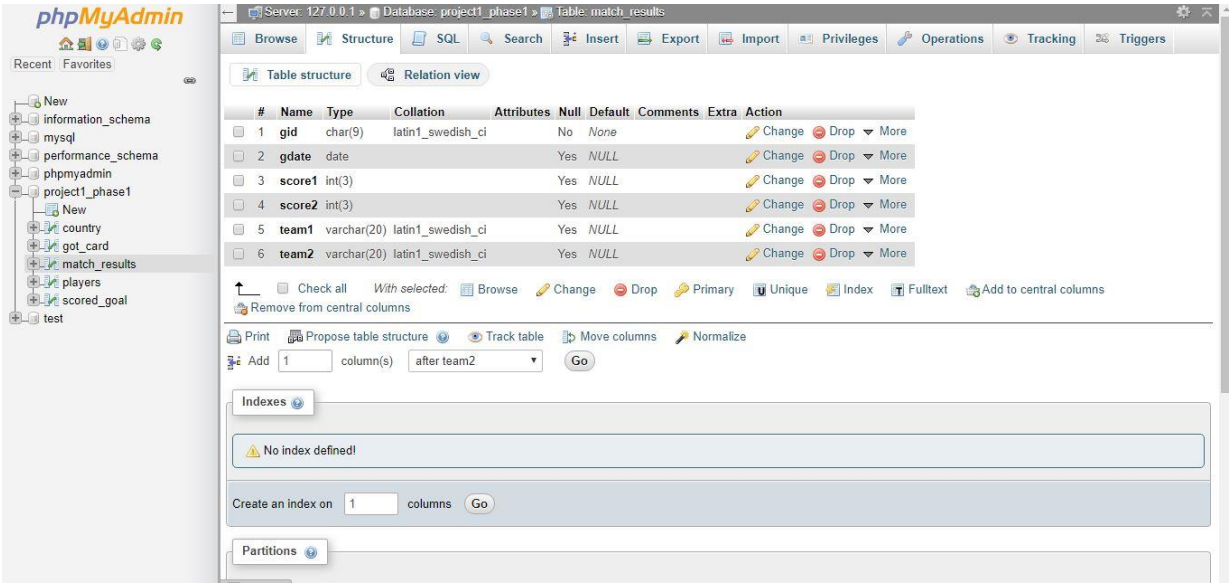


Fig 6: table for match_results

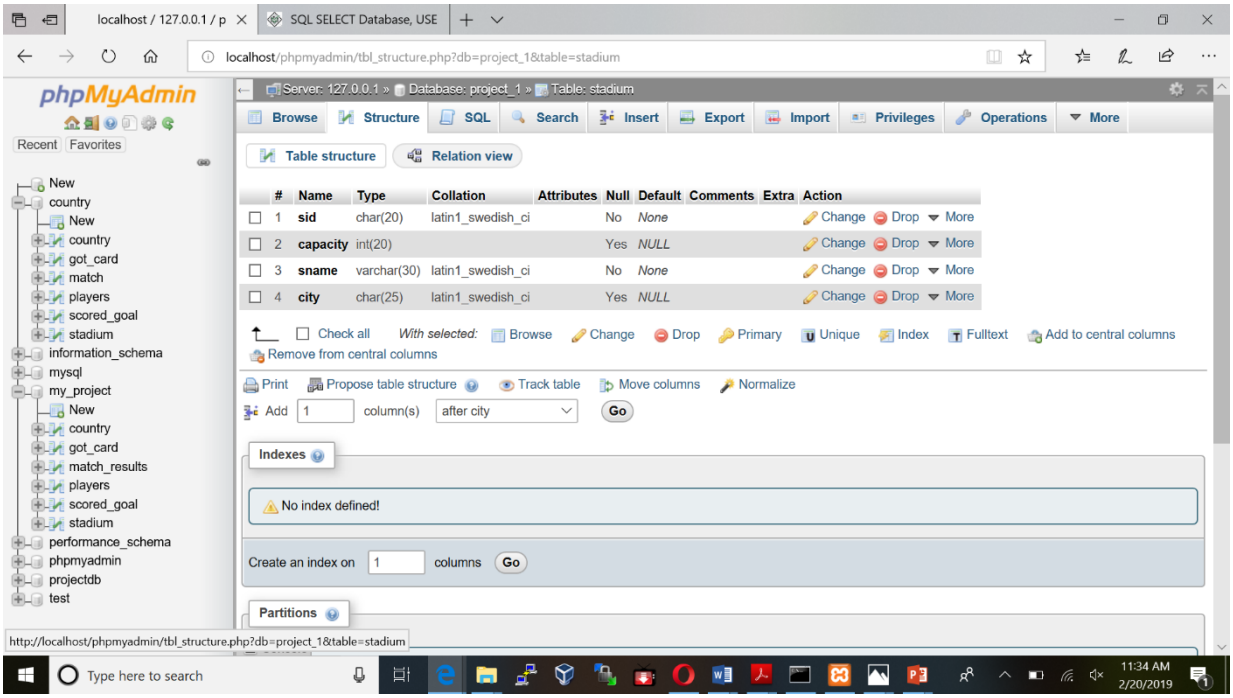


Fig 7: table for stadium

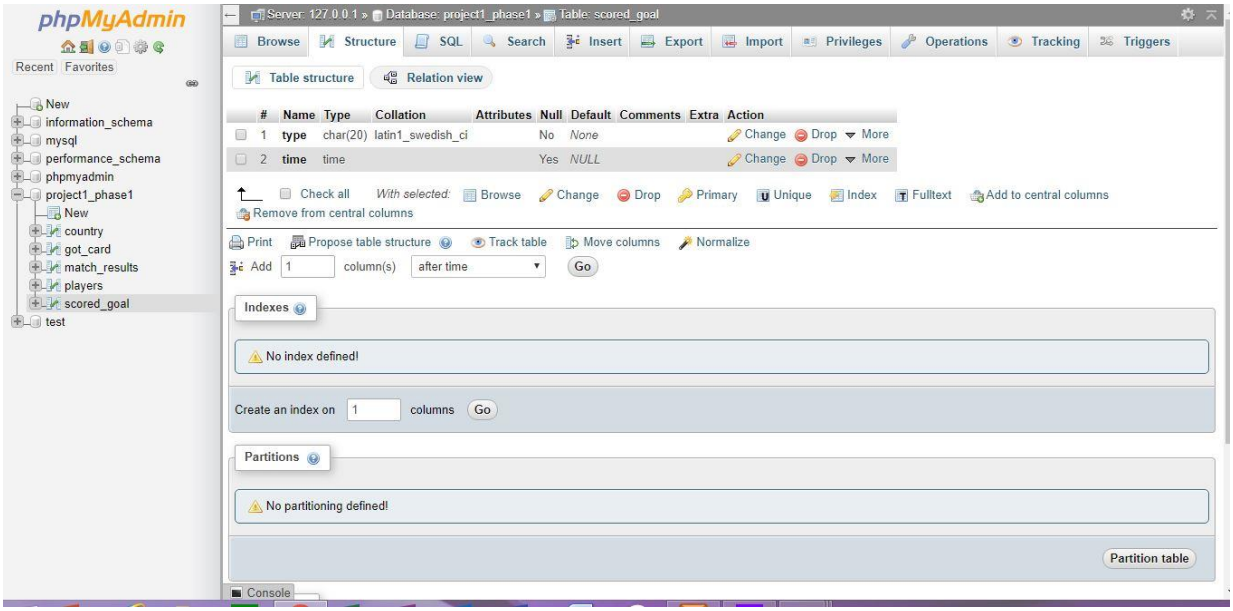


Fig 8: table for scored_goal relationship

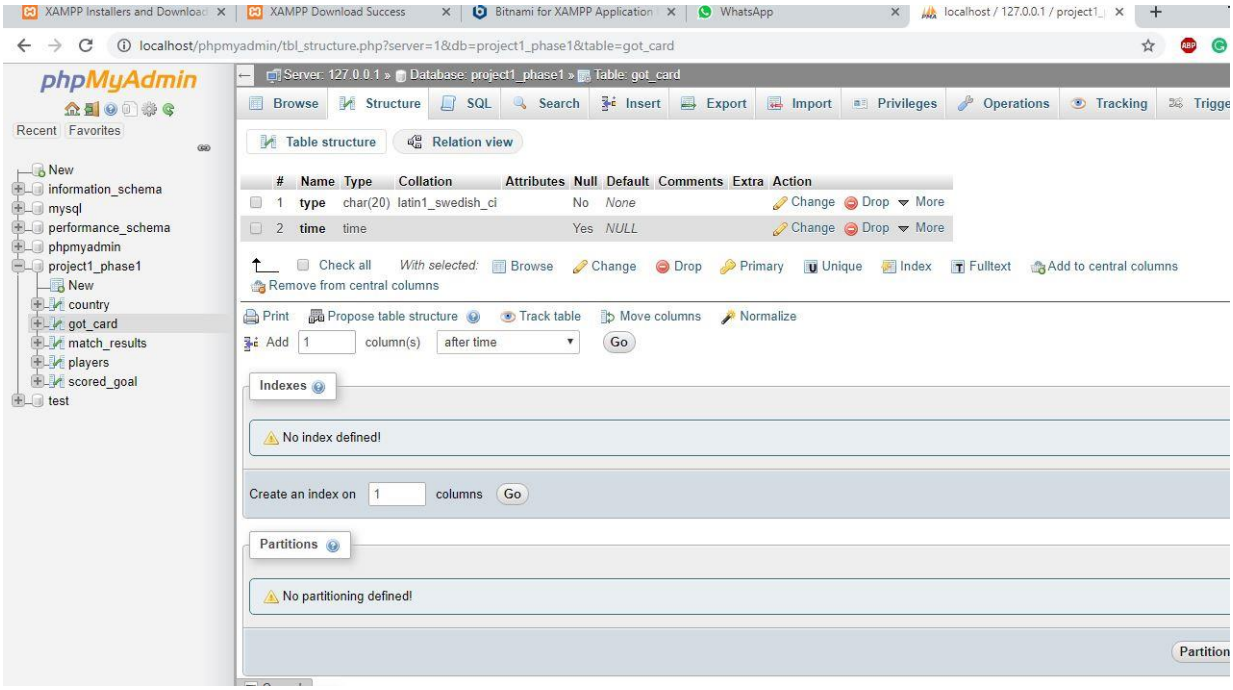


Fig 9: table for got_card relationship