MOTOGP

Stage 1:-

Overview-   
  
This System allows the user to know all the details he needs for MotoGP racing, from rankings to details of their bike. This will be a user’s key guid to follow MotoGP on his phone or his computer.

Description-

In this website you will be able to view all the details related to riders, for example the country the represent to their height and weight. We would also be able to see which riders have contract with the teams. Big fan of KTM Factory? With just one click you will be able to find their history as well as want makes them so unique. Not only this you would be also able to find the details about the circuits where the most iconic races took place.

In MotoGP Racing as much as engine of the bike track condition also matters. As much as talent is important to ride a bike, it is also important to have bike with the best tuning so you would be also able to see details of their bike of your favourite racer.

If new to MotoGP, why not look at carrier ranking to see the past performance of top racers.

Stage 2:-

MotoGP database is a database system which stores all the data of motogp racing. It has six tables which are ***riders, assigned\_riders , teams, circuits, bikes*** and ***ranking***.   
after stage 1 I understood which tables aren’t needed and how to manage the data in an efficient manner. So I then changed most of the attributes from the first stage sample ER diagram to better structured database.

Final Scenario

In the final scenario I have six tables listed below with their primary keys and foreign keys..

-riders [riderID(PK)]

-assigned\_riders [riderID(PK)] [teamID(FK)]

-teams [teamID(PK)]

-circuits [circuitID(PK)]

-bikes [teamID(FK,PK)]

-rankings [riderID(PK,FK) race\_date(PK)] [teamID(FK)] [circuitID(FK)]

Riders table will have all the data of riders with there riderID as primary key which can be linked to assigned\_riders by riderID as foreign key and primary key. Assigned\_riders also had teamID as foreign key which is helpful to link it to teams table.. assigned\_riders stores the ridersID with respect to the teams which they will be representing in the race.

Teams table has all the data related to teams and has a primary key teamID.

Circuit tables has all the data related to circuit and has primary key circuitID which can be then linked to rankings table to get what race was held in which circuit and its related data.

Bikes table stores all the data of bikes and using the teamID as primary key and foreign key, as bikes are usually provided by the teams.

Ranking table is a collection of all the primary keys from all of the table so we can link all the data directly to the rankings table vice versa. The primary key of rankings table is riderID and race\_date as same rider can’t race multiple times on the same date.

Final ER Diagram

Diagram

Description automatically generated

SQL CREATE TABLE STATEMENTS-  
  
DROP DATABASE IF EXISTS motogp\_database;

CREATE DATABASE IF NOT EXISTS motogp\_database;

USE motogp\_database;

DROP TABLE IF EXISTS riders, teams, assigned\_rider,bikes,rankings,circuits;

CREATE TABLE riders (

riderID VARCHAR(5) NOT NULL,

rider\_name VARCHAR(30) NOT NULL,

date\_of\_birth DATE,

place\_of\_birth VARCHAR(15),

country VARCHAR(20),

PRIMARY KEY (riderID));

CREATE TABLE teams (

teamID VARCHAR(5) NOT NULL,

team\_name VARCHAR(30) NOT NULL,

team\_founded\_by VARCHAR(30),

total\_wins INT,

PRIMARY KEY (teamID));

CREATE TABLE assigned\_rider (

riderID VARCHAR(5) NOT NULL,

teamID VARCHAR(5) NOT NULL,

rider\_wins int,

PRIMARY KEY (riderID),

FOREIGN KEY (riderID) REFERENCES riders(riderID),

FOREIGN KEY (teamID) REFERENCES teams(teamID));

CREATE TABLE bikes (

teamID VARCHAR(5) NOT NULL,

bike\_name VARCHAR(20) NOT NULL,

engine\_type VARCHAR(30),

max\_power INT,

max\_speed INT,

tires VARCHAR(15),

fuel\_capacity DOUBLE(4,2),

dry\_weight DOUBLE (6,3),

PRIMARY KEY (teamID),

FOREIGN KEY (teamID) REFERENCES teams(teamID));

CREATE TABLE circuits (

circuitID VARCHAR(5) NOT NULL,

circuit\_name VARCHAR(35) NOT NULL,

track\_length DOUBLE(5,2),

average\_track\_condition VARCHAR(10),

average\_temperature INT,

PRIMARY KEY (circuitID));

CREATE TABLE rankings (

ranking INT NOT NULL,

riderID VARCHAR(5) NOT NULL,

teamID VARCHAR(5) NOT NULL,

circuitID VARCHAR(5) NOT NULL,

race\_date DATE,

PRIMARY KEY (riderID,race\_date),

FOREIGN KEY (riderID) REFERENCES riders(riderID),

FOREIGN KEY (teamID) REFERENCES teams(teamID),

FOREIGN KEY (circuitID) REFERENCES circuits(circuitID));

ALTER TABLE bikes CHANGE tires bike\_tires varchar(15);

INSERT INTO `riders` (`riderID`, `rider\_name`, `date\_of\_birth`, `place\_of\_birth`, `country`)

VALUES ('RD12', 'Maverick Vinales', '12/01/1995', 'Figueres', 'Spain');

UPDATE `riders` SET `date\_of\_birth` = '1995-01-12' WHERE `riders`.`riderID` = 'RD12';

INSERT

INTO `riders` (`riderID`, `rider\_name`, `date\_of\_birth`, `place\_of\_birth`, `country`)

VALUES

('RD44', 'Pol Espargaro', '1991-06-10', 'Granollers', 'Spain'),

('RD5', 'Johann Zarco', '1990-07-16', 'Cannes', 'France');

INSERT INTO `riders` (`riderID`, `rider\_name`, `date\_of\_birth`, `place\_of\_birth`, `country`)

VALUES ('RD33', 'Brad Binder', '1995-08-11', 'Potchefstroom', 'South Africa'),

('RD25', 'Miguel Oliveira', '1995-01-04', 'Pragal', 'Portugal '),

('RD23', 'Enea Bastianin', '1997-12-30', 'Rimini', 'Italy'),

('RD63', 'Francesco Bagnaia', '1997-01-14', 'Torino', 'Italy'),

('RD20', 'Fabio Quartararo', '1999-04-20', 'Nice', 'France'),

('RD16', 'Jorge Martin', '1998-01-29', 'Madrid', 'Spain');

INSERT INTO `riders` (`riderID`, `rider\_name`, `date\_of\_birth`, `place\_of\_birth`, `country`)

VALUES ('RD36', 'Joan Mir', '1997-09-01', 'Palma de Mallorca', 'Spain');

ALTER TABLE `riders` CHANGE `place\_of\_birth` `place\_of\_birth` VARCHAR(20) CHARACTER SET utf8mb4 COLLATE utf8mb4\_general\_ci NULL DEFAULT NULL;

UPDATE `riders` SET `place\_of\_birth` = 'Palma de Mallorca' WHERE `riders`.`riderID` = 'RD36';

SELECT place\_of\_birth FROM riders WHERE riders.riderID = 'RD36';

INSERT INTO `teams` (`teamID`, `team\_name`, `team\_founded\_by`, `total\_wins`)

VALUES

('T01', 'Red Bull KTM Factory Racing', 'Pit beirer', '1'),

('T02', 'Monster Energy Yamaha MotoGP™', 'Yamaha', '105'),

('T03', 'Ducati Lenovo Team', 'Claudio Domenicali', '50'),

('T04', 'Gresini Racing MotoGP', 'Fausto Gresini', '1'),

('T05', 'Repsol Honda Team', 'Honda', '5'),

('T06', 'Pramac Racing', "Luis d'Antin", '0'),

('T07', 'Aprilia Racing', 'Alberto Beggio', '294'),

('T08', 'Suzuki Ecstar', 'Livio Suppo', '1'),

('T09', 'Mooney VR46 Racing Team', 'Valentino Rossi', '0'),

('T10', 'Team HRC', 'Honda', '0');

INSERT INTO `assigned\_rider` (`riderID`, `teamID`, `rider\_wins`)

VALUES

('RD5', 'T06', '0'),

('RD12', 'T07', '9'),

('RD16', 'T06', '1'),

('RD20', 'T02', '8'),

('RD23', 'T04', '1'),

('RD25', 'T01', '4'),

('RD33', 'T01', '2'),

('RD36', 'T08', '3'),

('RD44', 'T05', '0'),

('RD63', 'T03', '4');

INSERT INTO `circuits` (`circuitID`, `circuit\_name`, `track\_length`, `average\_track\_condition`, `average\_temperature`)

VALUES

('CR01', 'Lusail International Circuit', '5.380', 'Dry', '23'),

('CR02', 'Pertamina Mandalika Circuit', '4.313', 'Wet', '25'),

('CR03', 'Termas de Río Hondo', '4.805', 'Dry', '26'),

('CR04', 'Circuit Of The Americas', '5.514', 'Dry', '26'),

('CR05', 'Autódromo Internacional do Algarve', ' 4.653', 'Dry', '18'),

('CR06', 'Circuito de Jerez', '4.428', 'Dry', '27'),

('CR07', 'Circuito de Derek', '5.369', 'Wet', '23'),

('CR08', 'Le Mans', '4.185', 'Dry', '17'),

('CR09', 'Autodromo Internazionale del Mugello', '5.245', 'Dry', '23'),

('CR10', 'Circuit de Barcelona-Catalunya', '4.655', 'Dry', '25');

ALTER TABLE circuits CHANGE circuit\_name circuit\_name varchar(40);

UPDATE `circuits` SET `circuit\_name` = 'Autodromo Internazionale del Mugello' WHERE `circuits`.`circuitID` = 'CR09';

INSERT INTO `bikes` (`teamID`, `bike\_name`, `engine\_type`, `max\_power`, `max\_speed`, `bike\_tires`, `fuel\_capacity`, `dry\_weight`)

VALUES

('T01', 'KTM RC16', 'Four-stroke V4', '198', '339', 'Marchesini', '22', '157'),

('T02', 'Yamaha YZR-M1', 'DOHC 4-stroke with 16-valve ', '183', '340', 'Michelin', '21', '157');

ALTER TABLE `bikes` CHANGE `bike\_name` `bike\_name` VARCHAR(35) CHARACTER SET utf8mb4 COLLATE utf8mb4\_general\_ci NOT NULL;

INSERT INTO `bikes` (`teamID`, `bike\_name`, `engine\_type`, `max\_power`, `max\_speed`, `bike\_tires`, `fuel\_capacity`, `dry\_weight`)

VALUES

('T03', 'Ducati Desmosedici GP22', ' V4 4-stroke with 16-valve', '186.42', '350', 'Bridgestone', '21', '157'),

('T04', 'Ducati Desmosedici GP21', ' V4 4-stroke with 16-valve', '149.14', '350', 'Bridgestone', '21', '150'),

('T05', 'Honda RC213V', '4-stroke DOHC 4-valve V4', '237', '355', 'Michelin', '16', '160'),

('T06', 'Ducati Desmosedici GP21', ' V4 4-stroke with 16-valve', '149.14', '350', 'Bridgestone', '21', '150'),

('T07', 'Aprilia RS-GP', 'Four-stroke V4 75°, liquid-cooled', '251', '350', '', '22', '160'),

('T08', 'Suzuki GSX-RR', 'DOHC 16-valve', '237', '340 ', 'Bridgestone', '22', '157'),

('T09', 'Ducati Desmosedici GP22', ' V4 4-stroke with 16-valve', '186.42', '350', 'Bridgestone', '21', '157'),

('T10', 'Honda RC213V', ' V4 4-stroke with 16-valve', '185', '355', 'Michelin', '20', '160');

UPDATE `bikes` SET `engine\_type` = 'Four-stroke V4 liquid-cooled' WHERE `bikes`.`teamID` = 'T07';

INSERT INTO `rankings` (`ranking`, `riderID`, `teamID`, `circuitID`, `race\_date`)

VALUES

('1', 'RD23', 'T04', 'CR01', '2022-03-06'),

('2', 'RD33', 'T01', 'CR01', '2022-03-06'),

('3', 'RD44', 'T05', 'CR01', '2022-03-06'),

('4', 'RD20', 'T02', 'CR01', '2022-03-06'),

('5', 'RD5', 'T06', 'CR01', '2022-03-06'),

('1', 'RD25', 'T01', 'CR02', '2022-03-20'),

('2', 'RD23', 'T04', 'CR02', '2022-03-20'),

('3', 'RD36', 'T08', 'CR02', '2022-03-20'),

('4', 'RD63', 'T03', 'CR02', '2022-03-20'),

('5', 'RD12', 'T07', 'CR02', '2022-03-20');

ALTER TABLE rankings ADD avg\_speed INT;

ALTER TABLE `rankings` CHANGE `avg\_speed` `avg\_speed` DOUBLE;

UPDATE rankings SET avg\_speed = 154.2 WHERE riderID = "RD23";

UPDATE rankings SET avg\_speed = 154.3 WHERE riderID = "RD23" AND race\_date="2022-03-06";

UPDATE rankings SET avg\_speed = 154.1 WHERE riderID = "RD20" AND race\_date ="2022-03-06";

UPDATE rankings SET avg\_speed = 154.0 WHERE riderID = "RD5" AND race\_date ="2022-03-06";

UPDATE rankings SET avg\_speed = 154.2 WHERE riderID = "RD33" AND race\_date ="2022-03-06";

UPDATE rankings SET avg\_speed = 154.2 WHERE riderID = "RD44" AND race\_date ="2022-03-06";

UPDATE rankings SET avg\_speed = 168.2 WHERE riderID = "RD25" AND race\_date="2022-03-20";

UPDATE rankings SET avg\_speed = 168.1 WHERE riderID = "RD23" AND race\_date ="2022-03-20";

UPDATE rankings SET avg\_speed = 168.1 WHERE riderID = "RD36" AND race\_date ="2022-03-20";

UPDATE rankings SET avg\_speed = 168.0 WHERE riderID = "RD63" AND race\_date ="2022-03-20";

UPDATE rankings SET avg\_speed = 167.9 WHERE riderID = "RD12" AND race\_date ="2022-03-20";