**SCENARIU – Formula 1: sezon competitional 2018**

In acest scenariu am sa prezint o competitie foarte draga sufletului meu si pe care o urmaresc de mai multi ani, Formula 1 sau “Marele Circ”. Aceasta competitie este alcatuita din mai multe departamente si mult mai multe persoane.

Activitatea acesteia se bazeaza pe organizarea de curse, “Mari Premii” pentru mai multe echipe inspre deliciul publicului. Pentru a putea exemplifica cum functioneaza si a da o intelegere mai amanuntita atat pentru fanii acestei competitii cat si pentru cei care acum incep sa o urmareasca vom crea urmatoarea structura:

* Vom crea 6 entitati: drivers, drivers\_final\_standings, teams, team\_final\_standings, engine\_manufacturers si team\_principal.
* Fiecare entitate are un numar de attribute insa acestea vor fi prezentate in continuarea acestei lucrari.
* Vor fi create relatii intre aceste 6 entitati astfel incat redundanta va fi eliminata iar rezultatul va fi cel dorit.

Pe baza acestei structuri si a paginilor urmatoare, scopul este acela de a intelege mai bine aceasta competitive si modul in care fiecare entitate comunica cu cealalta in vederea obtinerii rezultatului final.

**Diagrama ERD**

Dupa cum am amintit mai sus, fiecare entitate are un numar de attribute dupa cum urmeaza a fi prezentate in diagrama ERD:

**DRIVERS\_FINAL\_STANDINGS**

#pilot\_number

\*position

\*first\_name

\*last\_name, \*total\_drivers\_points

**CONSTRUCTOR\_FINAL\_STANDINGS**

#team\_name

\*position

\*total\_constructor\_points

**DRIVERS**

\*pilot\_number

#team\_name

\*first\_name

\*last\_name

\*date\_of\_birth

o nationality

\*AustralianGP\_points, \*BahrainGP\_points \*ChineseGP\_points \*AzerbaijanGP\_points \*SpainGP\_points

\*MonacoGP\_points \*CanadaGP\_points

\*FranceGP\_points \*GreatBritainGP\_points \*GermanyGP\_points

\*HungaryGP\_points \*BelgiumGP\_points \*ItalyGP\_points \*SingaporeGP\_points \*RussiaGP\_points

\*JapanGP\_points

\*USAGP\_points \*MexicoGP\_points \*BrazilGP\_points \*AbuDhabiGP\_points

\*total\_drivers\_points

**TEAMS**

#team\_name

\*team\_ID

\*num\_of\_cars

\*AustralianGP\_points

\*BahrainGP\_points

\*ChineseGP\_points

\*AzerbaijanGP\_points

\*SpainGP\_points

\*MonacoGP\_points

\*CanadaGP\_points

\*FranceGP\_points

\*GreatBritainGP\_points

\*GermanyGP\_points

\*HungaryGP\_points

\*BelgiumGP\_points

\*ItalyGP\_points

\*SingaporeGP\_points

\*RussiaGP\_points

\*JapanGP\_points

\*USAGP\_points

\*MexicoGP\_points

\*BrazilGP\_points

\*AbuDhabiGP\_points \*total\_points

**TEAM\_PRINCIPAL**

#team\_principal\_ID

\*First\_name

\*last\_name

\*date\_of\_birth

o nationality

\*team\_ID

**ENGINE\_MANUFACTURERS**

#eng\_man\_name \*num\_of\_engines \*team\_principal\_ID

**TEAMS**

#team\_name

\*team\_ID

\*num\_of\_cars

\*AustralianGP\_points

\*BahrainGP\_points

\*ChineseGP\_points

\*AzerbaijanGP\_points

\*SpainGP\_points

\*MonacoGP\_points

\*CanadaGP\_points

\*FranceGP\_points

\*GreatBritainGP\_points

\*GermanyGP\_points

\*HungaryGP\_points

\*BelgiumGP\_points

\*ItalyGP\_points

\*SingaporeGP\_points

\*RussiaGP\_points

\*JapanGP\_points

\*USAGP\_points

\*MexicoGP\_points

\*BrazilGP\_points

\*AbuDhabiGP\_points

\*total\_points

**Schema bazei de date normalizata**

Entitatile din diagrama ERD devin tabele, atributele devin coloane ale acestor tabele, iar relatiile devin chei externe.

1.Entitatea TEAMS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Nume coloana | | Optionalitate | Tip Cheie | |
| team\_name | | # | Cheie primara | |
| \*team\_ID | | \* | Cheie unica | |
| \*num\_of\_cars | | \* |  | |
| \*AustralianGP\_points | | \* |  | |
| \*BahrainGP\_points | | \* |  | |
| \*ChineseGP\_points | | \* |  | |
| \*AzerbaijanGP\_points | | \* |  | |
| \*SpainGP\_points | | \* |  | |
| \*MonacoGP\_points | | \* |  | |
| \*CanadaGP\_points | | \* |  | |
| \*FranceGP\_points | | \* |  | |
| \*GreatBritainGP\_points | | \* |  | |
| \*GermanyGP\_points | | \* |  | |
| \*HungaryGP\_points | | \* |  | |
| \*BelgiumGP\_points | | \* |  | |
| \*ItalyGP\_points | | \* |  | |
| \*SingaporeGP\_points | | \* |  | |
| \*RussiaGP\_points | | \* |  | |
| \*JapanGP\_points | | \* |  | |
| \*USAGP\_points | \* | | |  |
| \*MexicoGP\_points | \* | | |  |
| \*BrazilGP\_points | \* | | |  |
| \*AbuDhabiGP\_points | \* | | |  |
| \*total\_points | \* | | |  |

2. Entitatea CONSTRUCTOR\_FINAL\_STANDINGS

|  |  |  |
| --- | --- | --- |
| Nume coloana | Optionalitate | Tip cheie |
| team\_name | # | Cheie primara |
| position | \* |  |
| total\_points | \* | Cheie straina pentru entitatea TEAMS |

3. Entitatea TEAM\_PRINCIPAL

|  |  |  |
| --- | --- | --- |
| Nume coloana | Optionalitate | Tip cheie |
| team\_principal\_ID | # | Cheie primara |
| first\_name | \* |  |
| last\_name | \* |  |
| date\_of\_birth | \* |  |
| nationality | o |  |
| team\_ID | \* | Cheie straina pentru entitatea TEAMS |

4. Entitatea ENGINE\_MANUFACTURERS

|  |  |  |
| --- | --- | --- |
| Nume coloana | Optionalitate | Tip cheie |
| eng\_man\_name | # | Cheie primara |
| num\_of\_engines | \* |  |
| team\_principal\_ID | \* | Cheie straina pentru Entitatea TEAM\_PRINCIPAL |

5. Entitatea DRIVERS

|  |  |  |
| --- | --- | --- |
| Nume coloana | Optionalitate | Tip cheie |
| pilot\_number | # | Cheie primara |
| team\_name | \* |  |
| first\_name | \* |  |
| last\_name | \* |  |
| date\_of\_birth | \* |  |
| nationality | o |  |
| AustralianGP\_points | \* |  |
| BahrainGP\_points | \* |  |
| ChineseGP\_points | \* |  |
| AzerbaijanGP\_points | \* |  |
| SpainGP\_points | \* |  |
| MonacoGP\_points | \* |  |
| CanadaGP\_points | \* |  |
| FranceGP\_points | \* |  |
| GreatBritainGP\_points | \* |  |
| GermanyGP\_points | \* |  |
| HungaryGP\_points | \* |  |
| BelgiumGP\_points | \* |  |
| ItalyGP\_points | \* |  |
| SingaporeGP\_points | \* |  |
| RussiaGP\_points | \* |  |
| JapanGP\_points | \* |  |
| USAGP\_points | \* |  |
| MexicoGP\_points | \* |  |
| BrazilGP\_points | \* |  |
| AbuDhabiGP\_points | \* |  |
| total\_drivers\_points | \* | Cheie unica |

6. Entitatea DRIVERS\_FINAL\_STANDINGS

|  |  |  |
| --- | --- | --- |
| Nume coloana | Optionalitate | Tip cheie |
| pilot\_number | # | Cheie primara |
| position | \* |  |
| first\_name | \* |  |
| last\_name | \* |  |
| total\_drivers\_points | \* | Cheie straina pentru entitatea DRIVERS |

**Explicatii legate de campuri, attribute**

* Tabelul “TEAMS” are campul “team\_name” cheie primara si campul “Team\_ID” cheie unica.
* Tabelul “CONSTRUCTOR\_FINAL\_STANDINGS” are campul “team\_name” cheie primara si campul “total\_points” cheie straina.
* Tabelul “TEAM\_PRINCIPAL” are campul “team\_principal\_ID” cheie primara, si campul “team\_ID” cheie straina.
* Tabelul “ENGINE\_MANUFACTURERS” are campul “eng\_man\_name” cheie primara, si campul “team\_principal\_ID” cheie straina
* Tabelul “DRIVERS” are campul “pilot\_number” cheie primara, campul total\_drivers\_points cheie unica, si toate campurile de tipul \_\_\_GP\_points au o contrangere legata de maximul pe care il pot avea(25).
* Tabelul “DRIVERS\_FINAL\_STANDINGS” are campul “pilot\_number” cheie primara si campul “total\_drivers\_points” cheie straina.

**Evidentierea legaturilor dintre tabele**

* Pentru relatia TEAMS-CONSTRUCTOR\_FINAL\_STANDINGS atributul total\_points, relatie one-to-many:O echipa trebuie sa fie in Clasamentul final al constructorilor, Clasamentul final al constructorilor trebuie sa contina mai multe echipe.
* Pentru relatia TEAMS-TEAM\_PRINCIPAL atributul team\_ID: O echipa trebuie sa ai un director de echipa, fiecare director trebuie sa apartina unei echipe.
* Pentru relatia TEAM\_PRINCIPAL-ENGINE\_MANUFACTURERS atributul team\_principal\_ID: Fiecare director de echipa trebuie sa aiba un producator de motoare, fiecare producator de motoare trebuie sa aiba unul si doar unul director de cursa.
* Pentru relatia TEAMS-DRIVERS atributul team\_name: Fiecare echipa trebuie sa aiba unul sau mai multi soferi, Fiecare sofer trebuie sa apartina de o singura echipa.
* Pentru relatia DRIVERS-DRIVERS\_FINAL\_STANDINGS atributul total\_drivers\_points; Fiecare sofer trebuie sa apartina unui clasament final al soferilor, Clasamentul final al pilotilor trebuie sa contina unul sau mai multi soferi.

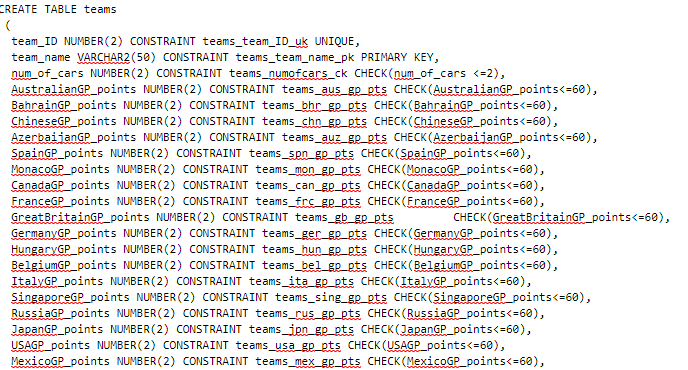
**Constrangeri legate de campuri**

* Campul “team\_ID” din tabelul TEAMS sa fie unic deoarece fiecare echipa trebuie sa aiba un numar de identificare uni. Acesta este o cheie unica insa create artificial din motive de functionalitate a bazei de date
* Campurile “\_\_\_\_GP\_points” (adica toate campurile care se termina in acest mod) din tabelul TEAMS sa aiba o valoare de maxim 60 deoarece acesta este punctajul in cadrul competitiei pentru echipele participante.
* Campurile “drivers\_\_\_\_\_\_GP\_point” (adica toate campurile de aceasta forma) din tabelul DRIVERS sa aiba o valoare de maxim 25 pentru fiecare sofer deoarece acesta este regulamentul competitiei.
* Campul “team\_principal\_ID” din cadrul tabelului TEAM\_PRINCIPAL sa fie unic deoarece se atribui un ID artificial uni fiecarui director de echipa.

Implementarea bazei de date prin intermediul comenzilor SQL

* Pentru crearea tabelului TEAMS:

|  |
| --- |
| CREATE TABLE teams  (  team\_ID NUMBER(2) CONSTRAINT teams\_team\_ID\_uk UNIQUE,  team\_name VARCHAR2(50) CONSTRAINT teams\_team\_name\_pk PRIMARY KEY,  num\_of\_cars NUMBER(2) CONSTRAINT teams\_numofcars\_ck CHECK(num\_of\_cars <=2),  AustralianGP\_points NUMBER(2) CONSTRAINT teams\_aus\_gp\_pts CHECK(AustralianGP\_points<=60),  BahrainGP\_points NUMBER(2) CONSTRAINT teams\_bhr\_gp\_pts CHECK(BahrainGP\_points<=60),  ChineseGP\_points NUMBER(2) CONSTRAINT teams\_chn\_gp\_pts CHECK(ChineseGP\_points<=60),  AzerbaijanGP\_points NUMBER(2) CONSTRAINT teams\_auz\_gp\_pts CHECK(AzerbaijanGP\_points<=60),  SpainGP\_points NUMBER(2) CONSTRAINT teams\_spn\_gp\_pts CHECK(SpainGP\_points<=60),  MonacoGP\_points NUMBER(2) CONSTRAINT teams\_mon\_gp\_pts CHECK(MonacoGP\_points<=60),  CanadaGP\_points NUMBER(2) CONSTRAINT teams\_can\_gp\_pts CHECK(CanadaGP\_points<=60),  FranceGP\_points NUMBER(2) CONSTRAINT teams\_frc\_gp\_pts CHECK(FranceGP\_points<=60),  GreatBritainGP\_points NUMBER(2) CONSTRAINT teams\_gb\_gp\_pts CHECK(GreatBritainGP\_points<=60),  GermanyGP\_points NUMBER(2) CONSTRAINT teams\_ger\_gp\_pts CHECK(GermanyGP\_points<=60),  HungaryGP\_points NUMBER(2) CONSTRAINT teams\_hun\_gp\_pts CHECK(HungaryGP\_points<=60),  BelgiumGP\_points NUMBER(2) CONSTRAINT teams\_bel\_gp\_pts CHECK(BelgiumGP\_points<=60),  ItalyGP\_points NUMBER(2) CONSTRAINT teams\_ita\_gp\_pts CHECK(ItalyGP\_points<=60),  SingaporeGP\_points NUMBER(2) CONSTRAINT teams\_sing\_gp\_pts CHECK(SingaporeGP\_points<=60),  RussiaGP\_points NUMBER(2) CONSTRAINT teams\_rus\_gp\_pts CHECK(RussiaGP\_points<=60),  JapanGP\_points NUMBER(2) CONSTRAINT teams\_jpn\_gp\_pts CHECK(JapanGP\_points<=60),  USAGP\_points NUMBER(2) CONSTRAINT teams\_usa\_gp\_pts CHECK(USAGP\_points<=60),  MexicoGP\_points NUMBER(2) CONSTRAINT teams\_mex\_gp\_pts CHECK(MexicoGP\_points<=60),  BrazilGP\_points NUMBER(2) CONSTRAINT teams\_brz\_gp\_pts CHECK(BrazilGP\_points<=60),  AbuDhabiGP\_points NUMBER(2) CONSTRAINT teams\_abdb\_gp\_pts CHECK(AbuDhabiGP\_points<=60),  total\_points NUMBER(5) CONSTRAINT teams\_total\_points\_uk UNIQUE; ) |



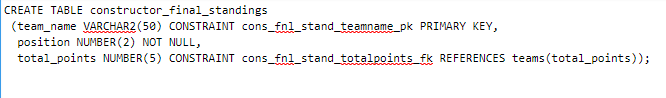
* Pentru crearea tabelului CONSTRUCTOR\_FINAL\_STANDINGS

CREATE TABLE constructor\_final\_standings

( team\_name VARCHAR2(50) CONSTRAINT cons\_fnl\_stand\_teamname\_pk PRIMARY KEY,

position NUMBER(2) NOT NULL,

total\_points NUMBER(5) CONSTRAINT cons\_fnl\_stand\_totalpoints\_fk REFERENCES teams(total\_points) );



* Pentru crearea tabelului TEAM\_PRINCIPAL

CREATE TABLE team\_principal

(team\_principal\_ID NUMBER(2) CONSTRAINT team\_princ\_ID\_pk PRIMARY KEY,

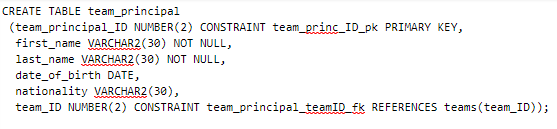
first\_name VARCHAR2(30) NOT NULL,

last\_name VARCHAR2(30) NOT NULL,

date\_of\_birth DATE,

nationality VARCHAR2(30),

team\_ID NUMBER(2) CONSTRAINT team\_principal\_teamID\_fk REFERENCES teams(team\_ID) );



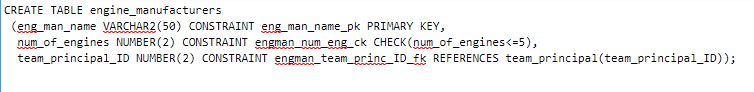
* Pentru crearea tabelului ENGINE\_MANUFACTURERS:

CREATE TABLE engine\_manufacturers

(eng\_man\_name VARCHAR2(50) CONSTRAINT eng\_man\_name\_pk PRIMARY KEY,

num\_of\_engines NUMBER(2) CONSTRAINT engman\_num\_eng\_ck CHECK(num\_of\_engines<=5),

team\_principal\_ID NUMBER(2) CONSTRAINT engman\_team\_princ\_ID\_fk REFERENCES team\_principal(team\_principal\_ID) );



* Pentru crearea tabelului DRIVERS:

CREATE TABLE drivers

(pilot\_number NUMBER(2) CONSTRAINT drivers\_plt\_num\_pk PRIMARY KEY,

team\_name VARCHAR2(50) CONSTRAINT drivers\_teamname\_fk REFERENCES teams(team\_name),

first\_name VARCHAR2(30) NOT NULL,

last\_name VARCHAR2(30) NOT NULL,

date\_of\_birth DATE NOT NULL,

nationality VARCHAR2(30),

AustralianGP\_points NUMBER(2) CONSTRAINT drivers\_aus\_gp\_pts CHECK(AustralianGP\_points<=25),

BahrainGP\_points NUMBER(2) CONSTRAINT drivers\_bhr\_gp\_pts CHECK(BahrainGP\_points<=25),

ChineseGP\_points NUMBER(2) CONSTRAINT drivers\_chn\_gp\_pts CHECK(ChineseGP\_points<=25),

AzerbaijanGP\_points NUMBER(2) CONSTRAINT drivers\_auz\_gp\_pts CHECK(AzerbaijanGP\_points<=25),

SpainGP\_points NUMBER(2) CONSTRAINT drivers\_spn\_gp\_pts CHECK(SpainGP\_points<=25),

MonacoGP\_points NUMBER(2) CONSTRAINT drivers\_mon\_gp\_pts CHECK(MonacoGP\_points<=25),

CanadaGP\_points NUMBER(2) CONSTRAINT drivers\_can\_gp\_pts CHECK(CanadaGP\_points<=25),

FranceGP\_points NUMBER(2) CONSTRAINT drivers\_frc\_gp\_pts CHECK(FranceGP\_points<=25),

GreatBritainGP\_points NUMBER(2) CONSTRAINT drivers\_gb\_gp\_pts CHECK(GreatBritainGP\_points<=25),

GermanyGP\_points NUMBER(2) CONSTRAINT drivers\_ger\_gp\_pts CHECK(GermanyGP\_points<=25),

HungaryGP\_points NUMBER(2) CONSTRAINT drivers\_hun\_gp\_pts CHECK(HungaryGP\_points<=25),

BelgiumGP\_points NUMBER(2) CONSTRAINT drivers\_bel\_gp\_pts CHECK(BelgiumGP\_points<=25),

ItalyGP\_points NUMBER(2) CONSTRAINT drivers\_ita\_gp\_pts CHECK(ItalyGP\_points<=25),

SingaporeGP\_points NUMBER(2) CONSTRAINT drivers\_sing\_gp\_pts CHECK(SingaporeGP\_points<=25),

RussiaGP\_points NUMBER(2) CONSTRAINT drivers\_rus\_gp\_pts CHECK(RussiaGP\_points<=25),

JapanGP\_points NUMBER(2) CONSTRAINT drivers\_jpn\_gp\_pts CHECK(JapanGP\_points<=25),

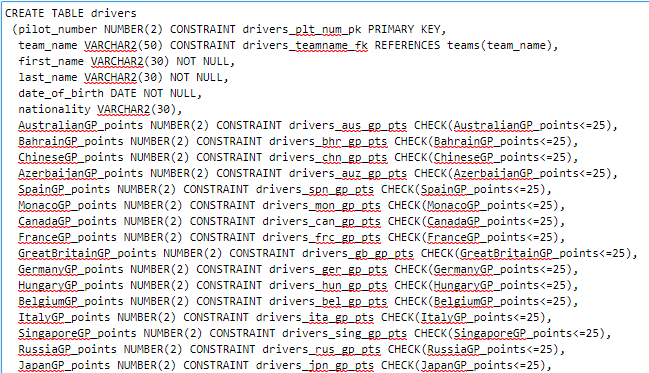
USAGP\_points NUMBER(2) CONSTRAINT drivers\_usa\_gp\_pts CHECK(USAGP\_points<=25),

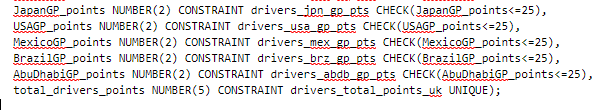
MexicoGP\_points NUMBER(2) CONSTRAINT drivers\_mex\_gp\_pts CHECK(MexicoGP\_points<=25),

BrazilGP\_points NUMBER(2) CONSTRAINT drivers\_brz\_gp\_pts CHECK(BrazilGP\_points<=25),

AbuDhabiGP\_points NUMBER(2) CONSTRAINT drivers\_abdb\_gp\_pts CHECK(AbuDhabiGP\_points<=25),

total\_drivers\_points NUMBER(5) CONSTRAINT drivers\_total\_points\_uk UNIQUE);





* Pentru crearea tabelului DRIVERS\_FINAL\_STANDINGS:

CREATE TABLE drivers\_final\_standings

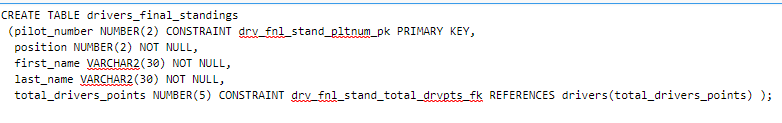
(pilot\_number NUMBER(2) CONSTRAINT drv\_fnl\_stand\_pltnum\_pk PRIMARY KEY,

position NUMBER(2) NOT NULL,

first\_name VARCHAR2(30) NOT NULL,

last\_name VARCHAR2(30) NOT NULL,

total\_drivers\_points NUMBER(5) CONSTRAINT drv\_fnl\_stand\_total\_drvpts\_fk REFERENCES drivers(total\_drivers\_points) );



**Popularea datelor cu inregistrari**

* Tabelul TEAMS

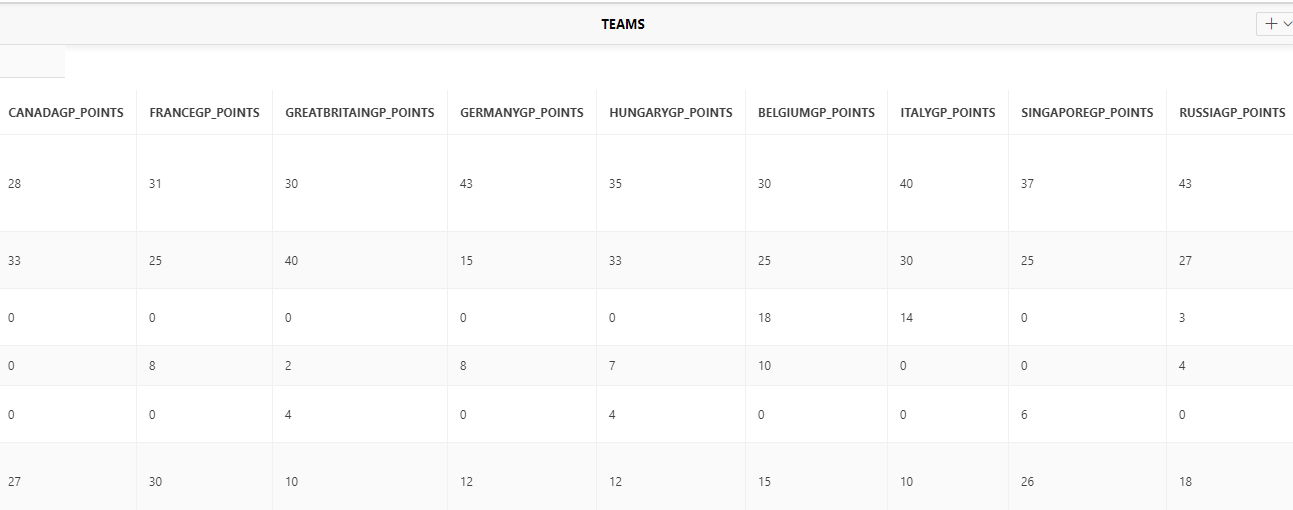
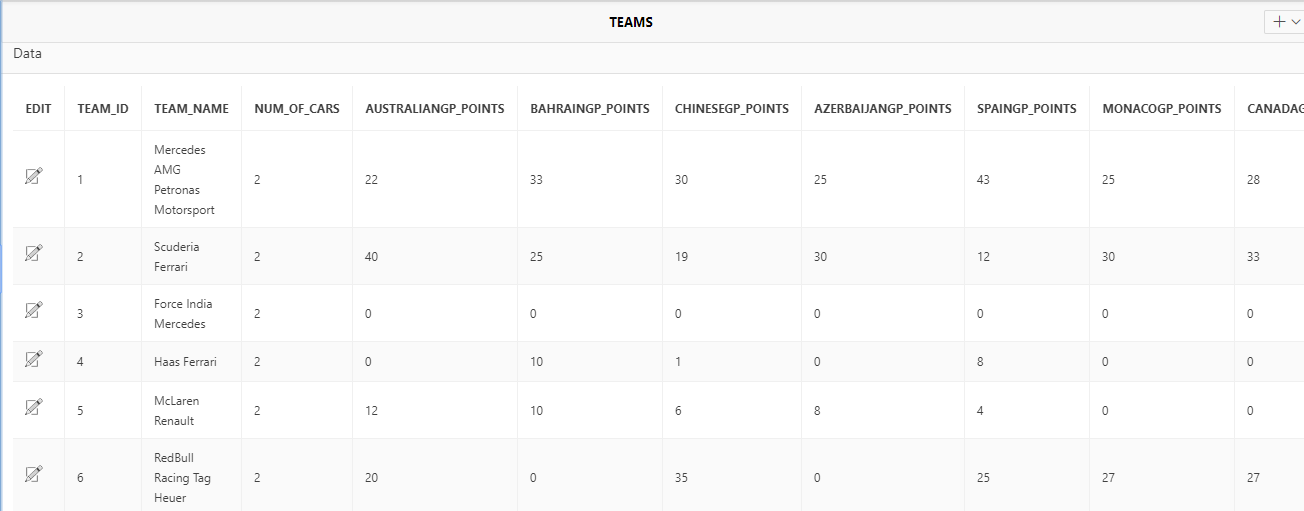
Inserare:

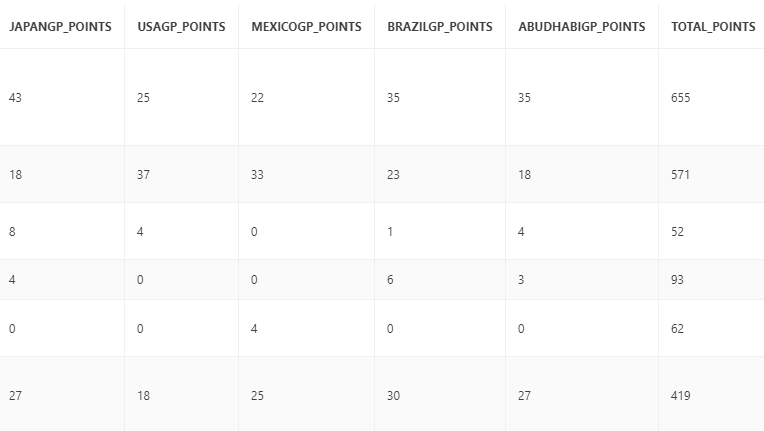
INSERT INTO teams

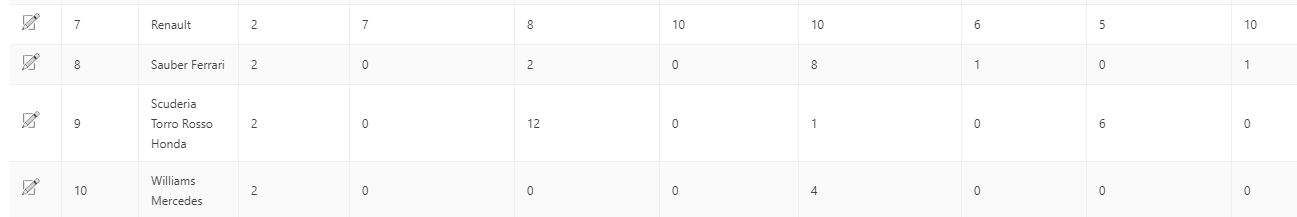
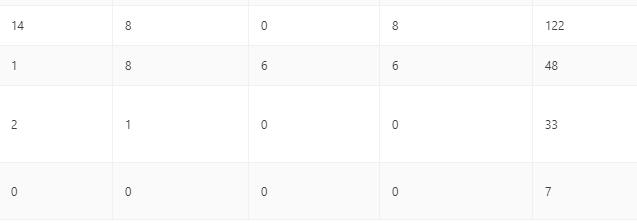
(team\_ID, team\_name,num\_of\_cars, AustralianGP\_points, BahrainGP\_points,ChineseGP\_points, AzerbaijanGP\_points, SpainGP\_points, MonacoGP\_points, CanadaGP\_points, FranceGP\_points, GreatBritainGP\_points, GermanyGP\_points, HungaryGP\_points, BelgiumGP\_points, ItalyGP\_points, SingaporeGP\_points, RussiaGP\_points, JapanGP\_points, USAGP\_points, MexicoGP\_points, BrazilGP\_points, AbuDhabiGP\_points, total\_points )

VALUES

(1, 'Mercedes AMG Petronas Motorsport', 22, 33, 30, 25, 43, 25, 28, 31, 30, 43, 35, 30, 40, 37, 43, 43, 25, 22, 35, 35, 655);







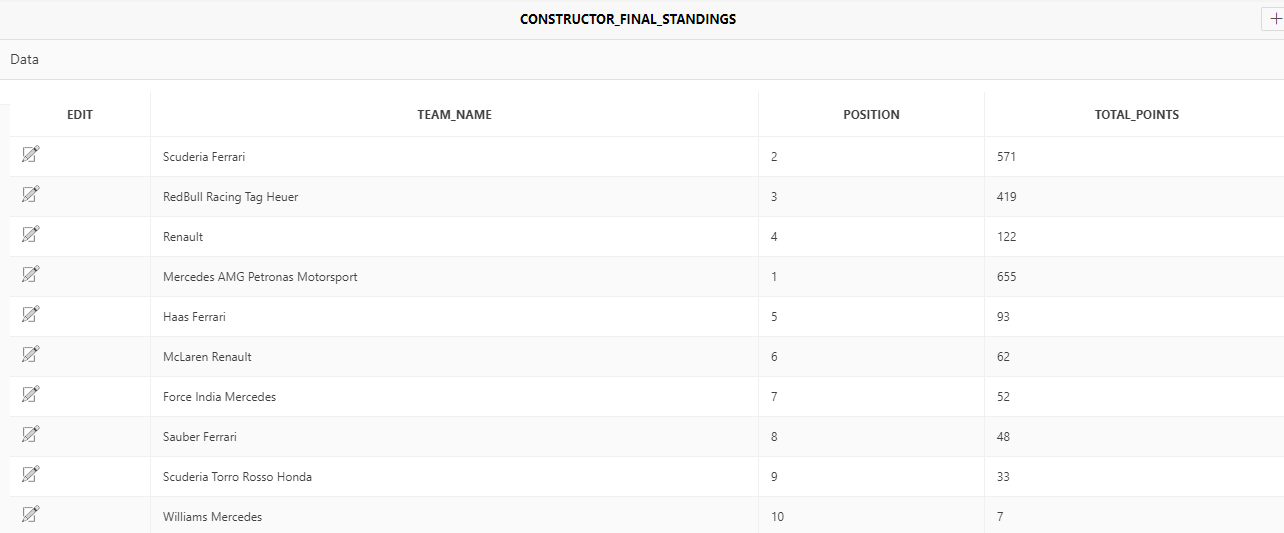
* Tabelul CONCTRUCTOR\_FINAL\_STANDINGS

Inserare:

INSERT INTO constructor\_final\_standings

(team\_name, position, total\_constructor\_points)

VALUES

('Mercedes AMG Petronas Motorsport', 1, 655);

* Tabelul TEAM\_PRINCIPAL

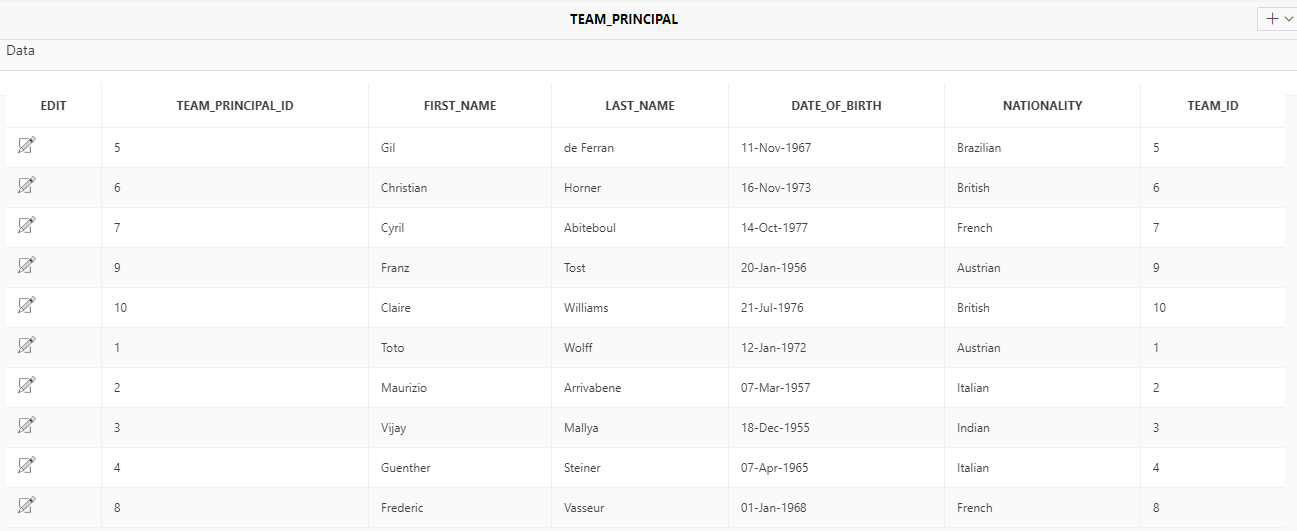
Inserare:

INSERT INTO team\_principal

(team\_principal\_ID, first\_name, last\_name, date\_of\_birth, nationality, team\_ID)

VALUES

(1, 'Toto','Wolff','12-JAN-1972','Austrian', 1);



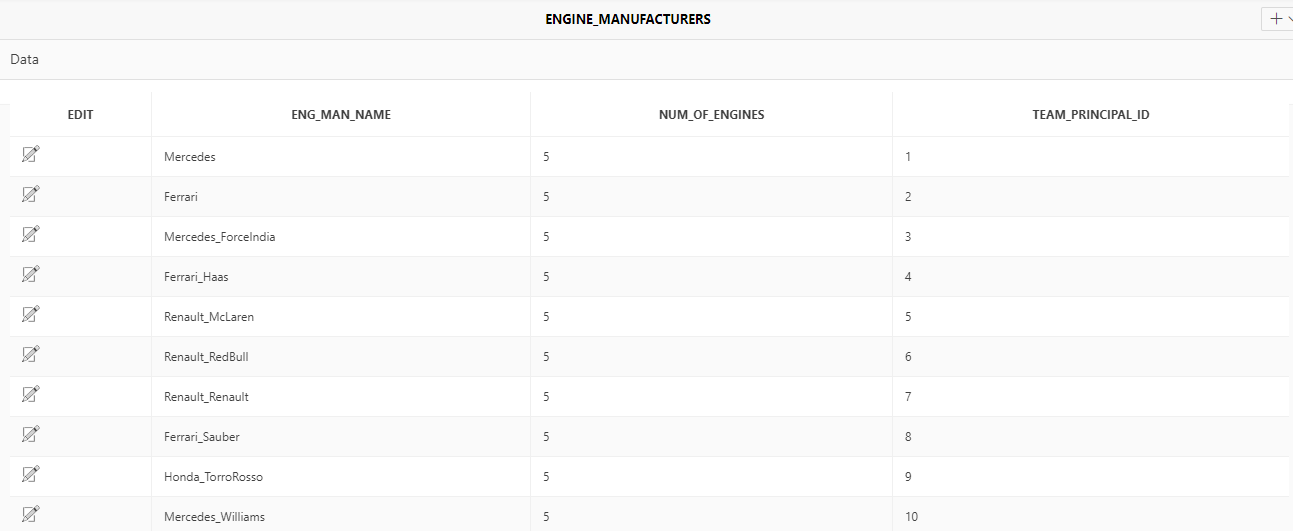
* Tabelul ENGINE\_MANUFACTURERS

Inserare:

INSERT INTO engine\_manufacturers

(eng\_man\_name, num\_of\_engines, team\_principal\_ID)

VALUES

('Mercedes', 5, 1);

* Tabelul DRIVERS

Inserare:

INSERT INTO drivers

(pilot\_number, team\_name, first\_name, last\_name, date\_of\_birth, nationality,

AustralianGP\_points, BahrainGP\_points, ChineseGP\_points, AzerbaijanGP\_points, SpainGP\_points,

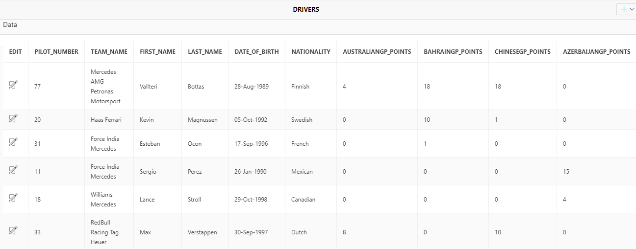
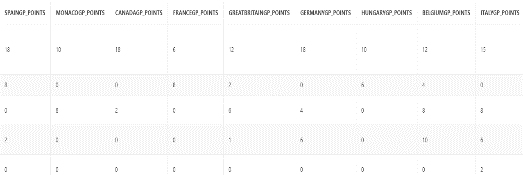
MonacoGP\_points, CanadaGP\_points, FranceGP\_points, GreatBritainGP\_points, GermanyGP\_points, HungaryGP\_points, BelgiumGP\_points, ItalyGP\_points, SingaporeGP\_points, RussiaGP\_points,

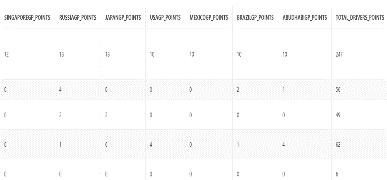
JapanGP\_points, USAGP\_points, MexicoGP\_points, BrazilGP\_points, AbuDhabiGP\_points,

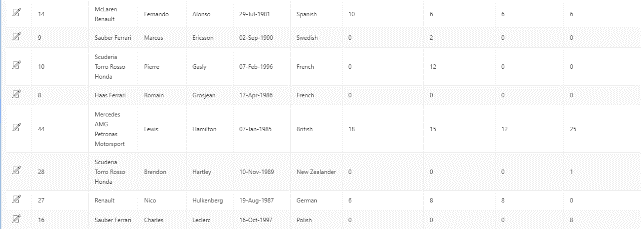
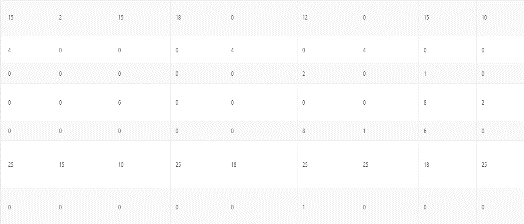
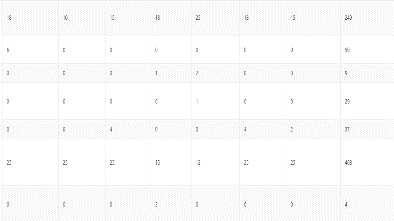
total\_drivers\_points)

VALUES

(14, 'McLaren Renault', 'Fernando', 'Alonso', '29-JUL-1981', 'Spanish', 10, 6, 6, 6, 4, 0, 0, 0, 4, 0, 4, 0, 0, 6, 0, 0, 0, 0, 0, 0, 50)









!Am aratat doar o parte din tabel insa acesta are 20 de valori, toate testate in prealabil pe platforma ORACLE!

* Tabelul DRIVERS\_FINAL\_STANDINGS

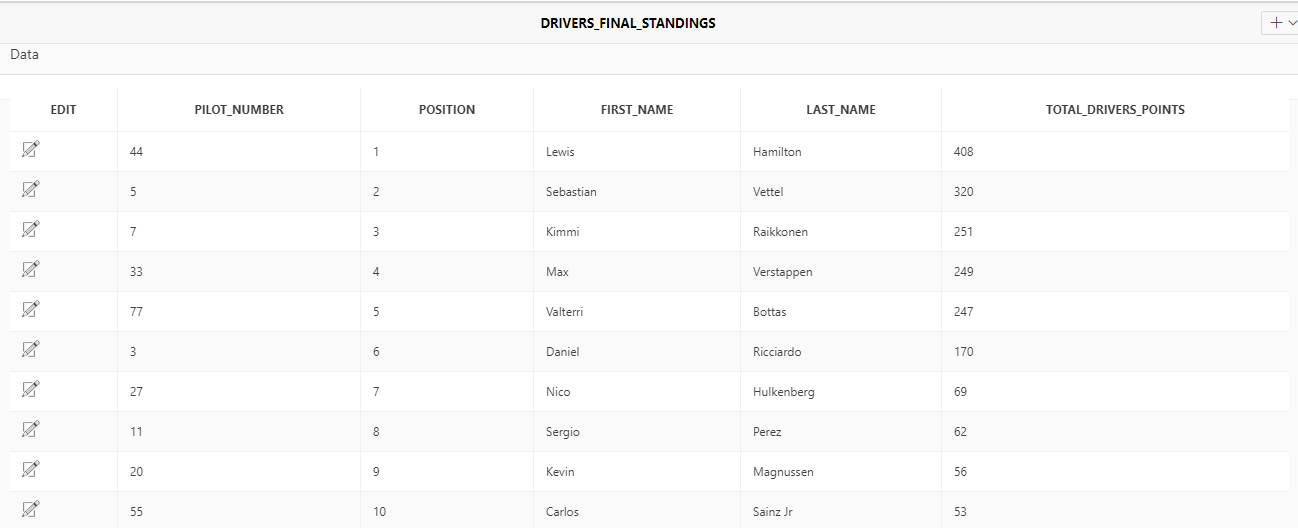
Inserare:

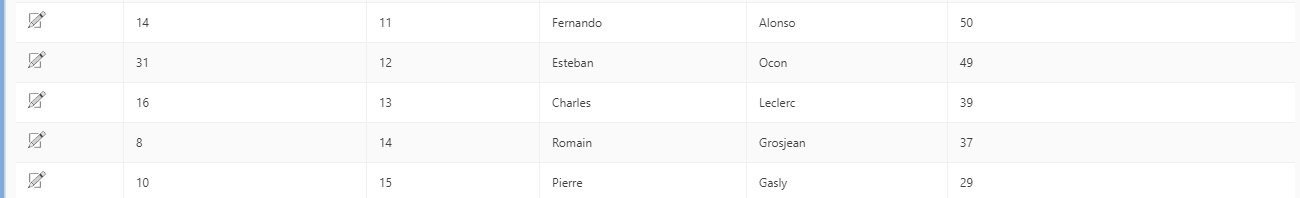
INSERT INTO drivers\_final\_standings

(pilot\_number, position, first\_name, last\_name, total\_drivers\_points)

VALUES

(44, 1, 'Lewis', 'Hamilton', 408)







**Modificari de structura si actualizari de continut**

1. Pentru modificare de structura numarul 1 am decis modificarea tipului de variabila din cadrul team\_name, am facut aceasta modificare pentru a avea in vedere cazul in care o echipa isi modifica numele iar aceste exceed limita de caractere pusa la crearea tabelului:

ALTER TABLE teams

MODIFY team\_name VARCHAR2(100);

1. Pentru a doua modificare de structura a tabelului am decis adaugarea unei coloane care sa aiba in vedere nationalitatea echipelor, tara in care acestea au fost fondate:

ALTER TABLE teams

ADD team\_nationality VARCHAR2(50);

1. Pentru prima actualizare de continut trebuie avuta in vedere dobandirea unei noi cetatenii si nationalitati a unui pilot astfel: Fernando Alonso a dobandit cetatenie Americana si astfel trebuie modificata nationalitatea acestuia in tabelul DRIVERS.

UPDATE drivers

SET nationality='American'

WHERE first\_name='Fernando' AND last\_name='Alonso';

1. Pentru a doua actualizare avem in vedere modificarea punctajului obtinut de o echipa in cadrul unei etape in urma unei erori de calcul si de introducere a datelor in baza de date, astfel: Echipa McLaren a obtinut in Marele Premiu din Australia 10 puncte iar acest lucru trebuie reflectat in tabelul TEAMS.

UPDATE teams

SET AustralianGP\_points=10

WHERE team\_ID=5 AND total\_points=62;

1. Pentru cea de a treia modificare de continu vom avea in vedere faptul ca o echipa a schimbat producatorul motorului la jumatatea sezonului, astfel: McLaren a semnat cu Honda un nou contract iar asta trebuie actualizat in table.

UPDATE engine\_manufacturers

SET eng\_man\_name='McLaren\_Honda'

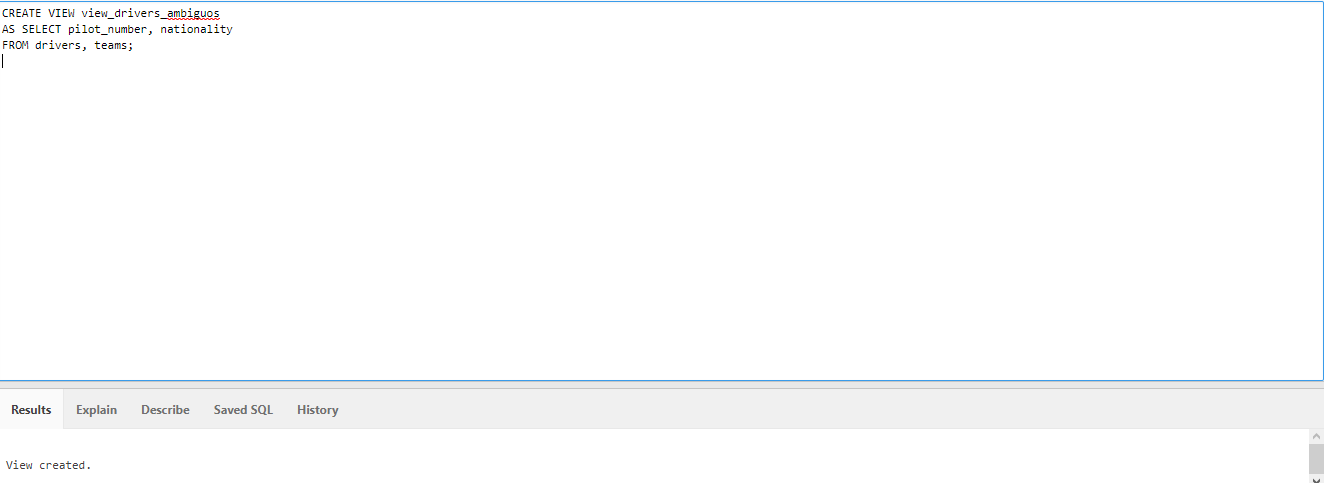
WHERE team\_principal\_ID=5 AND num\_of\_engines=5;

**2 views pe baza de tabele**

1. CREATE VIEW view\_drivers\_ambiguos

AS SELECT pilot\_number, nationality

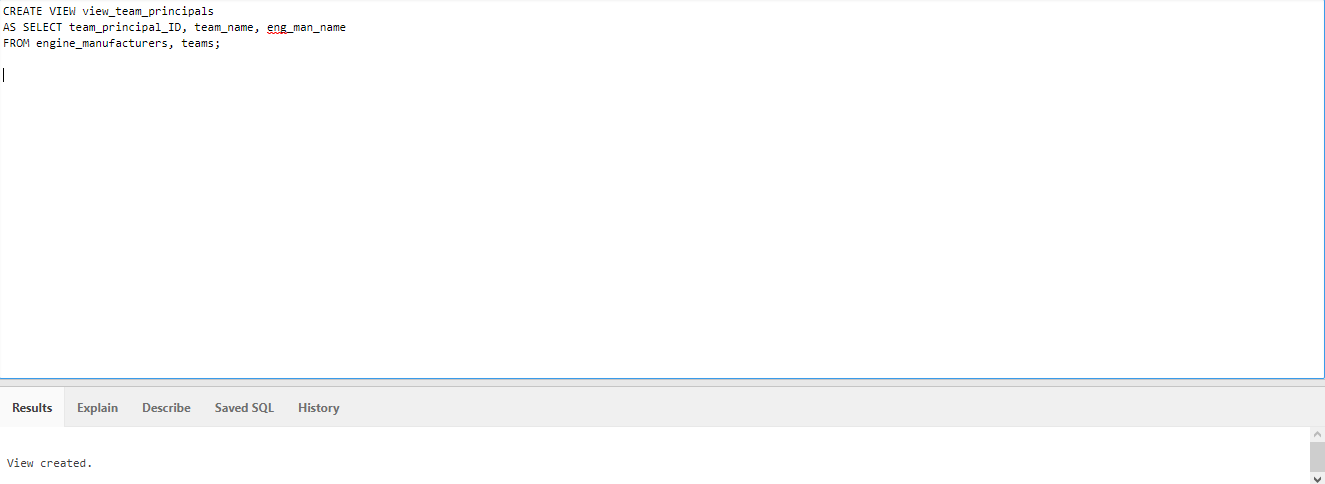
FROM drivers, teams;



1. CREATE VIEW view\_team\_principals

AS SELECT team\_principal\_ID, team\_name, eng\_man\_name

FROM engine\_manufacturers, teams;



**Interogari**

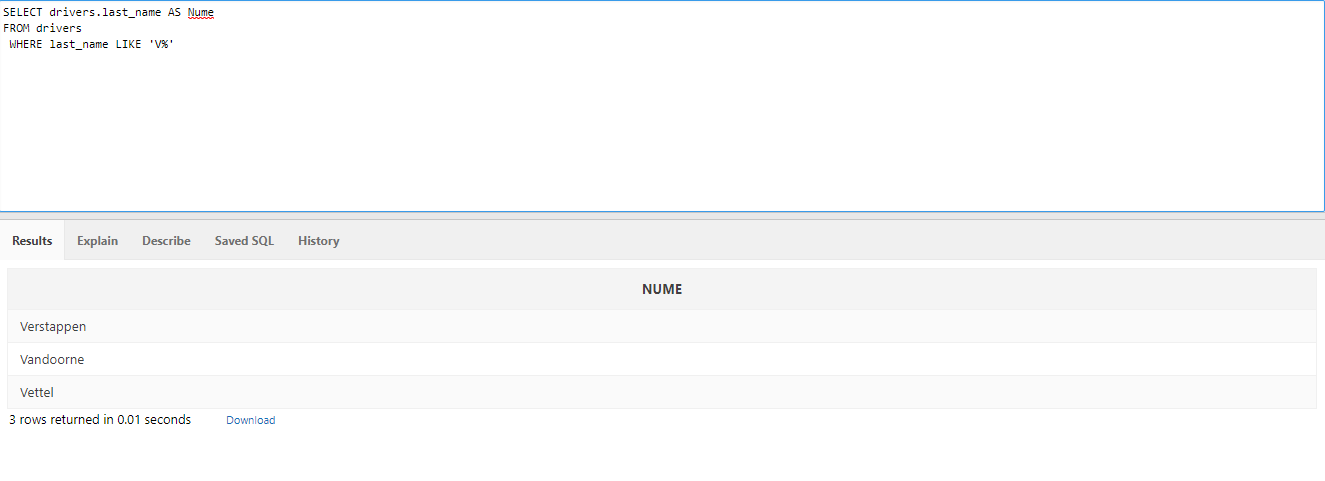
1. Drivers\_cu\_numele\_V

Sa se afieze toti pilotii al caror nume de familie incepe cu litera V

SELECT drivers.last\_name AS Nume

FROM drivers

WHERE last\_name LIKE 'V%'



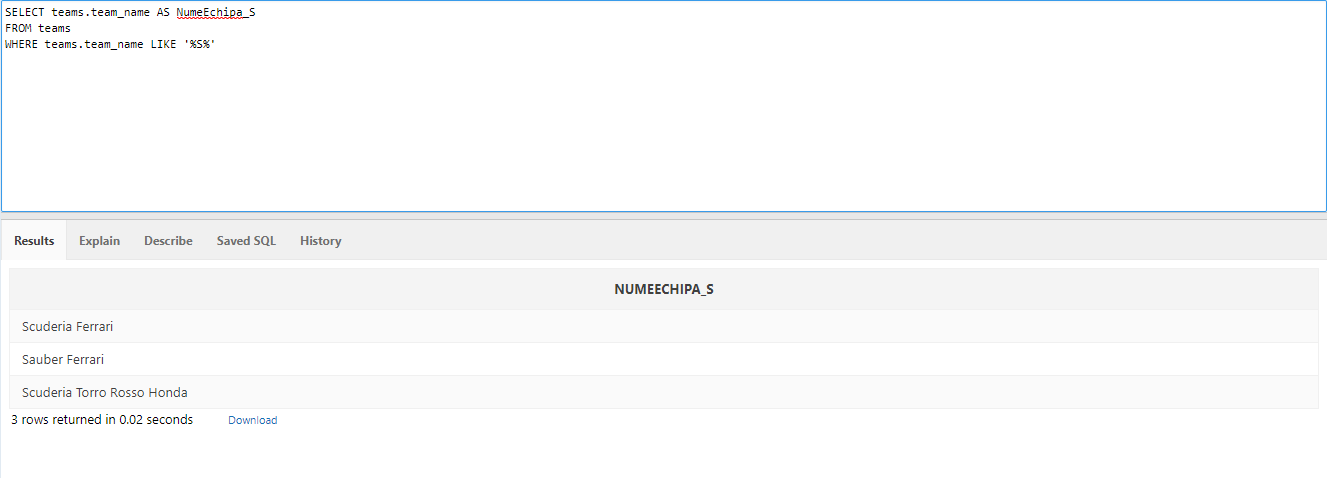
1. Echipa\_S

Sa se afiseze toate echipele care au in structura lor litera s.

SELECT teams.team\_name AS NumeEchipa\_S

FROM teams

WHERE teams.team\_name LIKE '%S%'



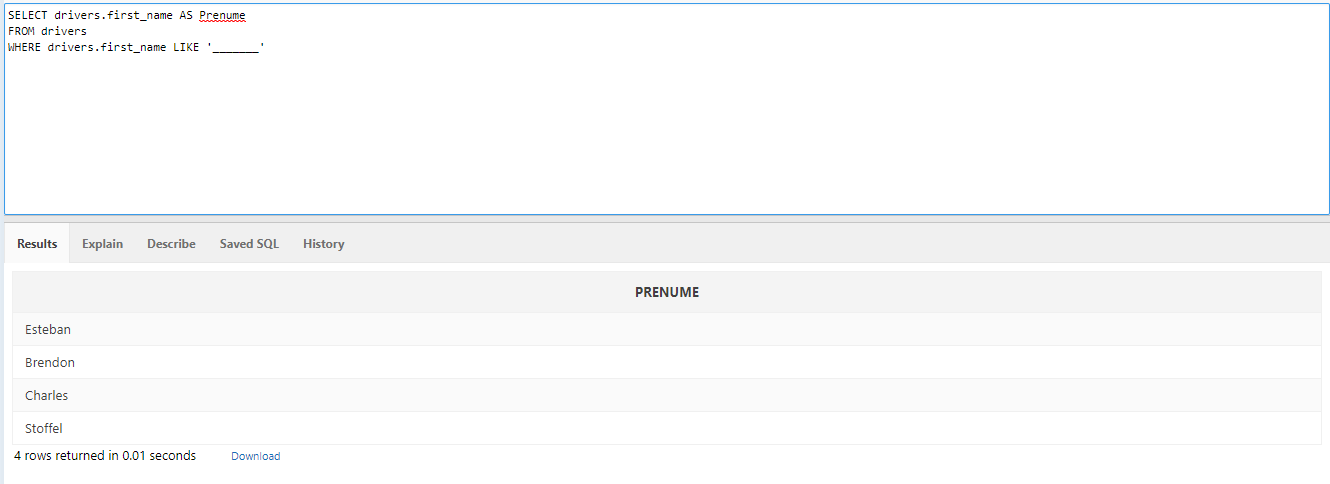
1. Nume\_Piloti\_7\_Caractere

Sa se afiseze toate prenumele pilotilor care au exact 7 caracterea in denumirea acestora.

SELECT drivers.first\_name AS Prenume

FROM drivers

WHERE drivers.first\_name LIKE '\_\_\_\_\_\_\_'



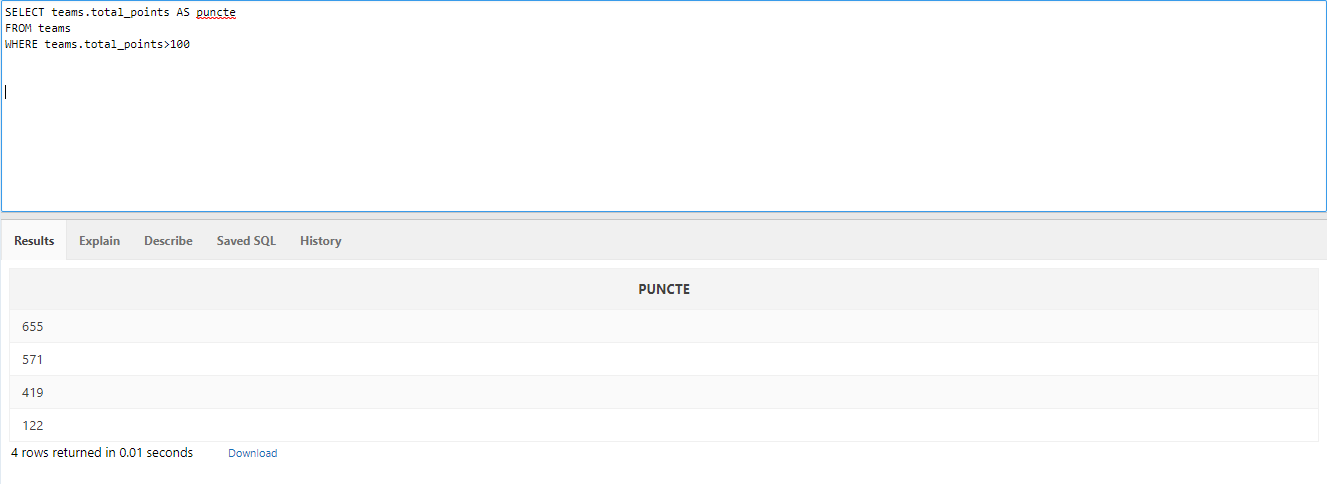
1. Echipe\_100

Sa se afiseze toate echipele care au mai mult de 100 de punct in total.

SELECT teams.total\_points AS puncta

FROM teams

WHERE teams.team\_points>100



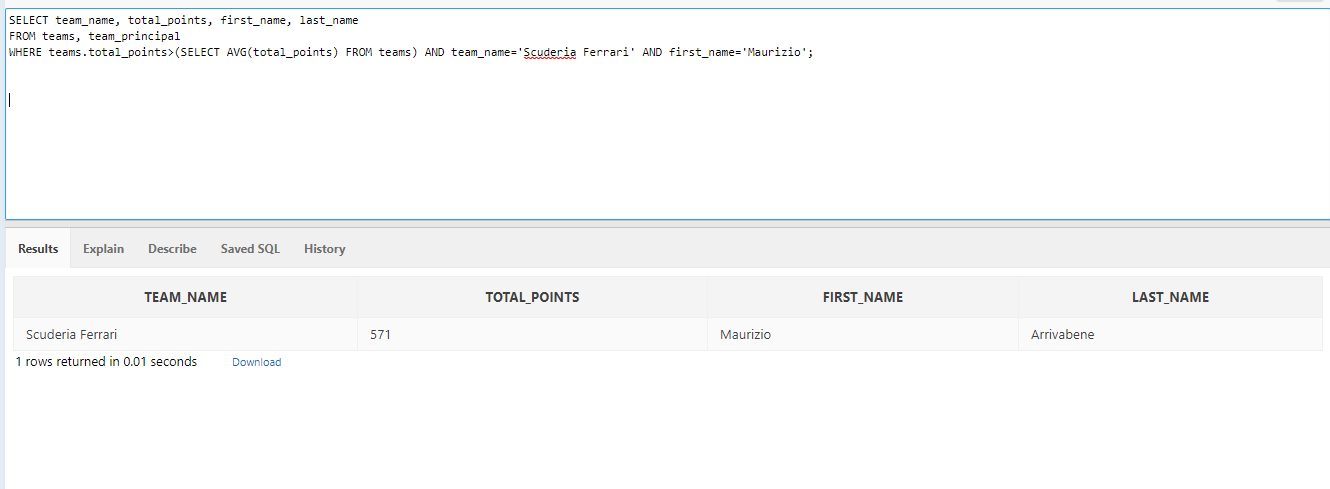
1. Puncte\_echipa\_peste\_medie

Sa se afiseze punctele echipelor care sunt peste medie si al caror prenume al directorului de echipa este ‘Maurizio’.

SELECT team\_name, total\_points, first\_name, last\_name

FROM teams, team\_principal

WHERE teams.total\_points>(SELECT AVG(total\_points) FROM teams) AND team\_name='Scuderia Ferrari' AND first\_name='Maurizio';



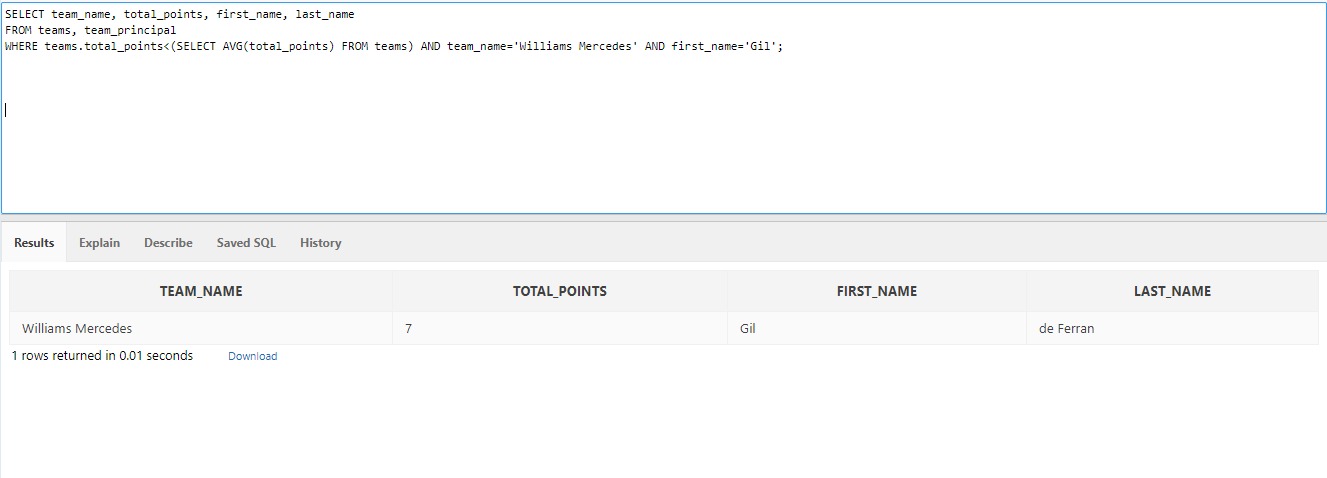
1. Puncte\_echipa\_sub\_medie

Sa se afiseze punctele echipelor care sunt peste medie si al caror prenume al directorului de echipa este ‘Gil’.

SELECT team\_name, total\_points, first\_name, last\_name

FROM teams, team\_principal

WHERE teams.total\_points<(SELECT AVG(total\_points) FROM teams) AND team\_name='Williams Mercedes' AND first\_name='Gil';



1. Sa se afiseze un table cu numele echipei, numele pilotilor, numele producatorului de motoare din sezonul competitional 2018.

SELECT team\_name, first\_name, last\_name, eng\_man\_name

FROM teams, drivers, engine\_manufacturers

WHERE num\_of\_engines=5;

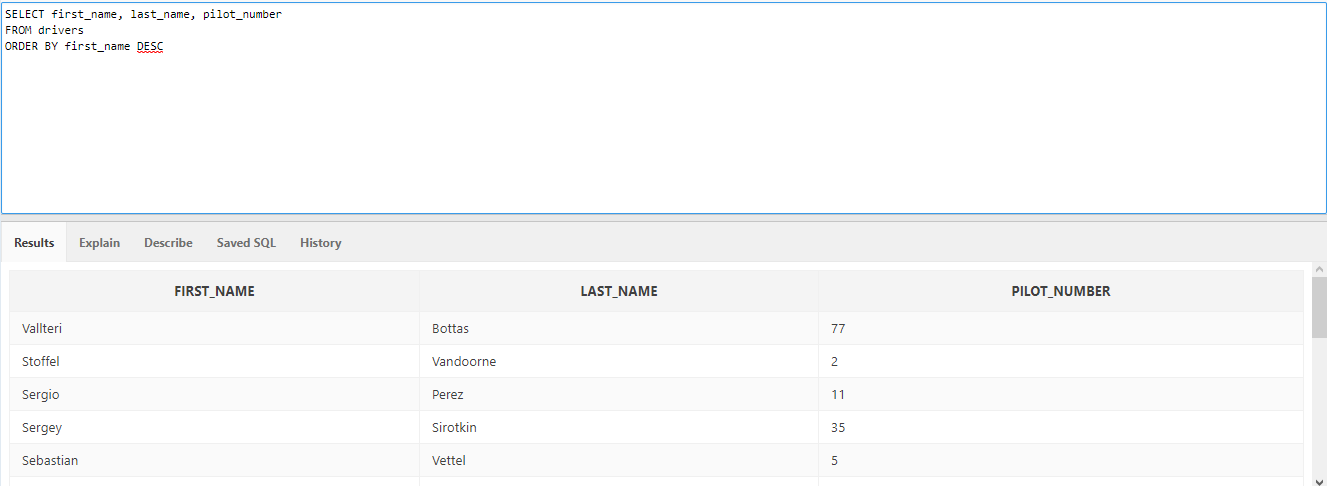
1. Ordonare\_piloti

Sa se ordoneze pilotii din tabelul DRIVERS in ordine descrescatoare dupa prenumele acestora.

SELECT first\_name, last\_name, pilot\_number

FROM drivers

ORDER BY first\_name DESC



1. Puncte\_intre\_x\_si\_y

Sa se afiseze toti pilotii care au realizat punctaje intre 100 si 200.

SELECT first\_name, last\_name, total\_drivers\_points

FROM drivers

WHERE total\_drivers\_points BETWEEN 100 AND 200;



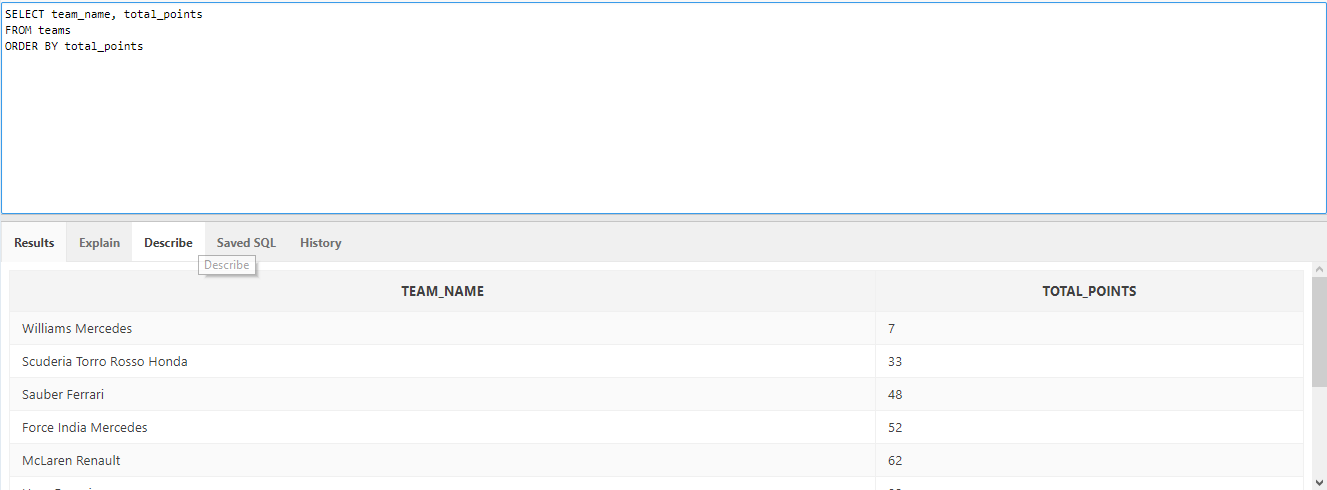
1. Echipe\_ordine\_crescatoare

Sa se afiseze ordinea echipelor pe baza ordonarii crescatoare a punctajelor acestora.

SELECT team\_name, total\_points

FROM teams

ORDER BY total\_points



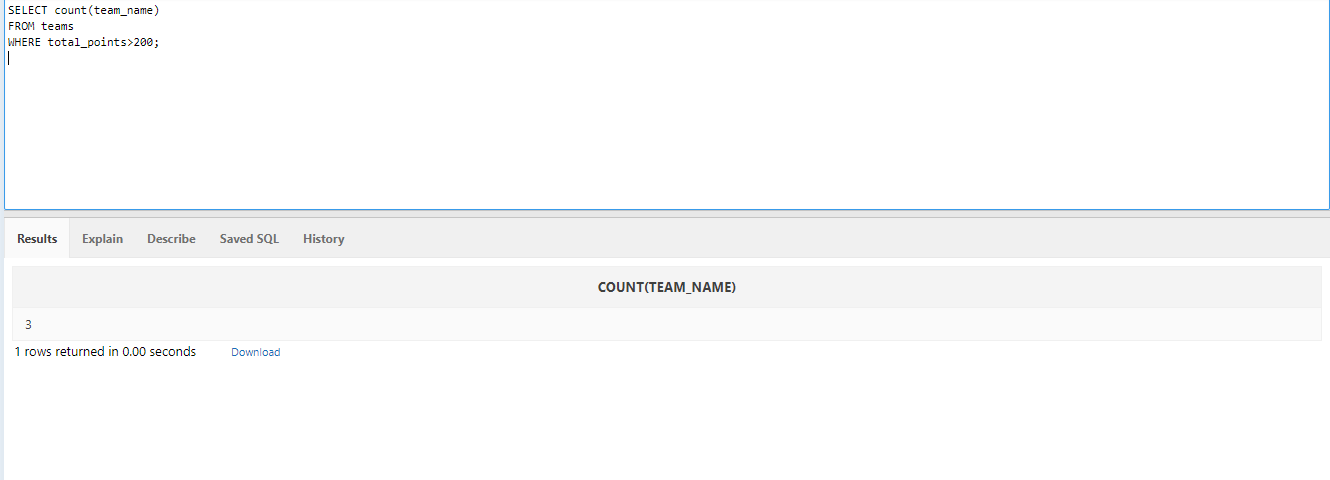
1. Numar\_total\_echipe

Sa se afisezze numarul total de echipe cu punctaje peste 200.

SELECT count(team\_name)

FROM teams

WHERE total\_points>200;



1. Data\_nasterii mai mare

Sa se arate toti pilotii si echiepele lor care sunt nascuti dupa 1 Ianuarie 1990.

SELECT DISTINCT drivers.first\_name AS prenume, drivers.last\_name AS nume, teams.team\_name AS echipa

FROM teams teams, drivers drivers

WHERE date\_of\_birth>'1-JAN-1990';

