

ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ
ΤΜΗΜΑ ΜΗΧ. Η/Υ & ΠΛΗΡΟΦΟΡΙΚΗΣ

ΠΡΟΧΩΡΗΜΕΝΑ ΘΕΜΑΤΑ
ΤΕΧΝΟΛΟΓΙΑΣ ΚΑΙ ΕΦΑΡΜΟΓΩΝ
ΒΑΣΕΩΝ ΔΕΔΟΜΕΝΩΝ

ΠΡΟΓΡΑΜΜΑΤΙΣΤΙΚΗ ΕΡΓΑΣΙΑ ΓΙΑ ΤΟ
ΑΚΑΔΗΜΑΪΚΟ ΕΤΟΣ 2024 - 2025

ΟΜΑΔΑ STATISTIC STRIKERS

ΠΗΤΤΑΣ ΝΙΚΟΛΑΟΣ, 5007

ΑΠΟΛΛΩΝ ΠΕΤΡΟΣ ΚΑΛΛΙΠΟΛΙΤΗΣ, 4963

ΙΩΑΝΝΗΣ ΓΙΑΝΝΑΚΟΣ, 4970

ΤΕΛΙΚΗ ΑΝΑΦΟΡΑ

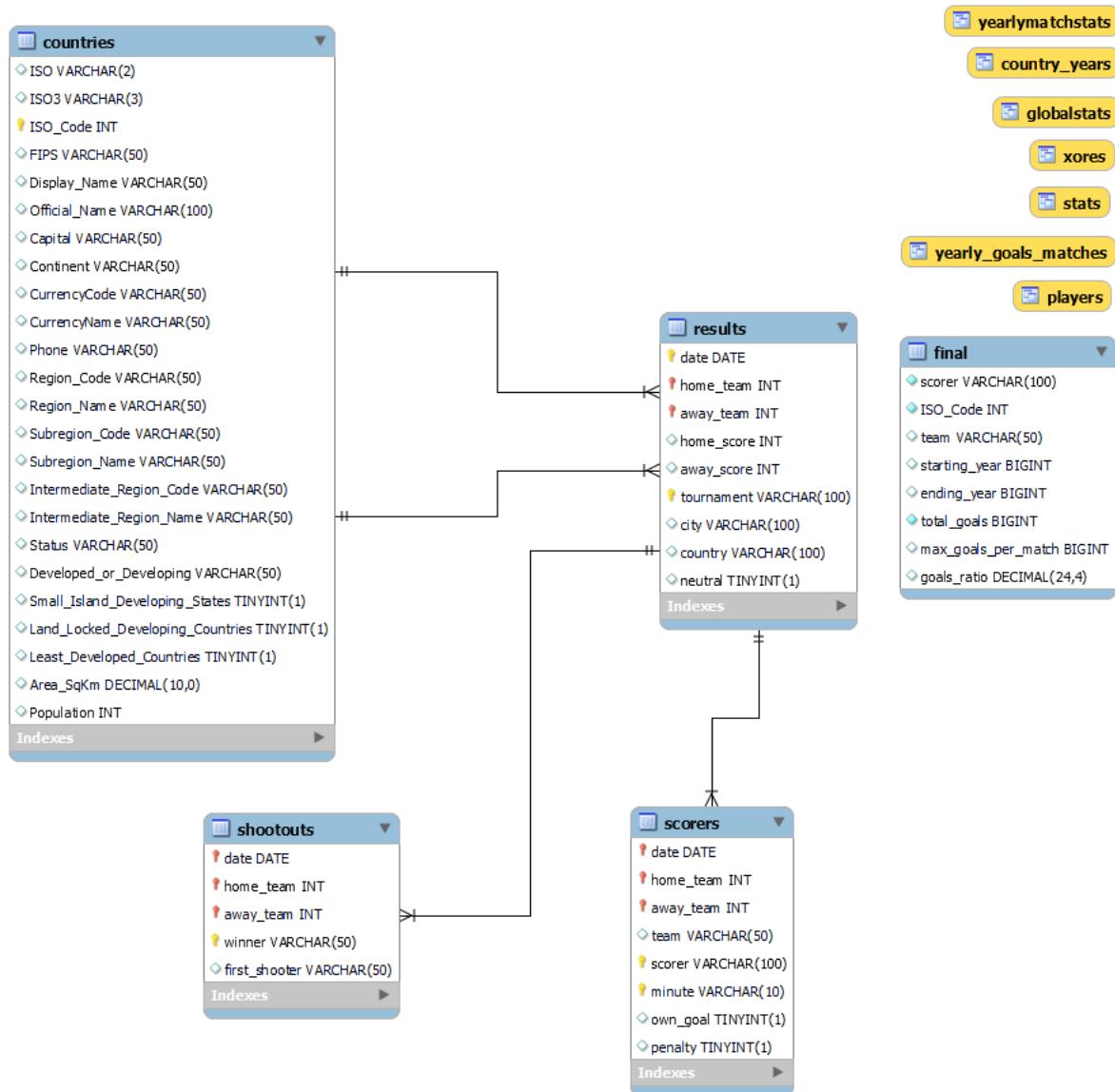
ΜΑΪΟΣ 2025

ΙΣΤΟΡΙΚΟ ΠΡΟΗΓΟΥΜΕΝΩΝ ΕΚΔΟΣΕΩΝ

Ημερομηνία	Έκδοση	Περιγραφή	Συγγραφέας
25/05/2025	0.1	Βάση δεδομένων και λοιπές ρυθμίσεις	Πήττας Νικόλαος
26/05/2025	1.0	Ολοκλήρωση αναφοράς	Πήττας Νικόλαος Γιαννακός Ιωάννης Καλλιπολίτης Απόλλωνας

1 ΒΑΣΗ ΔΕΔΟΜΕΝΩΝ

1.1 ΣΧΕΣΙΑΚΟ ΣΧΗΜΑ ΣΕ ΛΟΓΙΚΟ ΕΠΙΠΕΔΟ



Σχήμα 1.1 Σχεσιακό σχήμα της βάσης δεδομένων του συστήματος

```
-- MySQL Workbench Forward Engineering

SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS,
UNIQUE_CHECKS=0;
SET
@OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECK
S, FOREIGN_KEY_CHECKS=0;
SET @OLD_SQL_MODE=@@SQL_MODE,
SQL_MODE='ONLY_FULL_GROUP_BY,STRICT_TRANS_T
```

```
ABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FO
R_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION';
```

```
-- Schema mydb
```

```
-- Schema mye030
```

```

-- -----
-- Schema mye030
-- -----
CREATE SCHEMA IF NOT EXISTS `mye030`
DEFAULT CHARACTER SET utf8mb4 COLLATE
utf8mb4_unicode_ci ;
USE `mye030` ;

-- -----
-- Table `mye030`.`countries`
-- -----
CREATE TABLE IF NOT EXISTS
`mye030`.`countries` (
  `ISO` VARCHAR(2) NULL DEFAULT NULL,
  `ISO3` VARCHAR(3) NULL DEFAULT NULL,
  `ISO_Code` INT NOT NULL,
  `FIPS` VARCHAR(50) NULL DEFAULT NULL,
  `Display_Name` VARCHAR(50) NULL DEFAULT
NULL,
  `Official_Name` VARCHAR(100) NULL DEFAULT
NULL,
  `Capital` VARCHAR(50) NULL DEFAULT NULL,
  `Continent` VARCHAR(50) NULL DEFAULT
NULL,
  `CurrencyCode` VARCHAR(50) NULL DEFAULT
NULL,
  `CurrencyName` VARCHAR(50) NULL DEFAULT
NULL,
  `Phone` VARCHAR(50) NULL DEFAULT NULL,
  `Region_Code` VARCHAR(50) NULL DEFAULT
NULL,
  `Region_Name` VARCHAR(50) NULL DEFAULT
NULL,
  `Subregion_Code` VARCHAR(50) NULL DEFAULT
NULL,
  `Subregion_Name` VARCHAR(50) NULL DEFAULT
NULL,
  `Intermediate_Region_Code` VARCHAR(50)
NULL DEFAULT NULL,
  `Intermediate_Region_Name` VARCHAR(50)
NULL DEFAULT NULL,
  `Status` VARCHAR(50) NULL DEFAULT NULL,
  `Developed_or_Developing` VARCHAR(50)
NULL DEFAULT NULL,
  `Small_Island_Developing_States` TINYINT(1)
NULL DEFAULT NULL,
  `Land_Locked_Developing_Countries` TINYINT(1)
NULL DEFAULT NULL,
  `Least_Developed_Countries` TINYINT(1)
NULL DEFAULT NULL,
  `Area_SqKm` DECIMAL(10,0) NULL DEFAULT
NULL,
  `Population` INT NULL DEFAULT NULL,
  PRIMARY KEY (`ISO_Code`)
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8mb4
COLLATE = utf8mb4_unicode_ci;

-- -----
-- Table `mye030`.`final`
-- -----
CREATE TABLE IF NOT EXISTS `mye030`.`final`(
  `scorer` VARCHAR(100) NOT NULL,
  `ISO_Code` INT NOT NULL,
  `team` VARCHAR(50) NULL DEFAULT NULL,
  `starting_year` BIGINT NULL DEFAULT NULL,
  `ending_year` BIGINT NULL DEFAULT NULL,
  `total_goals` BIGINT NOT NULL DEFAULT
'0',
  `max_goals_per_match` BIGINT NULL DEFAULT
NULL,
  `goals_ratio` DECIMAL(24,4) NULL DEFAULT
NULL)
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8mb4
COLLATE = utf8mb4_unicode_ci;

-- -----
-- Table `mye030`.`results`
-- -----
CREATE TABLE IF NOT EXISTS
`mye030`.`results` (
  `date` DATE NOT NULL,
  `home_team` INT NOT NULL,
  `away_team` INT NOT NULL,
  `home_score` INT NULL DEFAULT NULL,
  `away_score` INT NULL DEFAULT NULL,
  `tournament` VARCHAR(100) NOT NULL,
  `city` VARCHAR(100) NULL DEFAULT NULL,
  `country` VARCHAR(100) NULL DEFAULT NULL,
  `neutral` TINYINT(1) NULL DEFAULT NULL,
  PRIMARY KEY (`date`, `home_team`,
`away_team`, `tournament`),
  INDEX `home_team`(`home_team` ASC)
VISIBLE,
  INDEX `away_team`(`away_team` ASC)
VISIBLE,
  CONSTRAINT `results_ibfk_1`
    FOREIGN KEY (`home_team`)
    REFERENCES `mye030`.`countries`(`ISO_Code`),
  CONSTRAINT `results_ibfk_2`
    FOREIGN KEY (`away_team`)
    REFERENCES `mye030`.`countries`(`ISO_Code`)
)
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8mb4
COLLATE = utf8mb4_unicode_ci;

-- -----
-- Table `mye030`.`scorers`
-- -----
CREATE TABLE IF NOT EXISTS
`mye030`.`scorers` (
  `date` DATE NOT NULL,
  `home_team` INT NOT NULL,
  `away_team` INT NOT NULL,
  `team` VARCHAR(50) NULL DEFAULT NULL,
  `scorer` VARCHAR(100) NOT NULL,
  `minute` VARCHAR(10) NOT NULL,
  `own_goal` TINYINT(1) NULL DEFAULT NULL,
  `penalty` TINYINT(1) NULL DEFAULT NULL,
  PRIMARY KEY (`date`, `home_team`,
`away_team`, `scorer`, `minute`),
  CONSTRAINT `scorers_ibfk_1`

```

```

    FOREIGN KEY (`date` , `home_team` ,
`away_team`)
    REFERENCES `mye030`.`results` (`date` ,
`home_team` , `away_team`)
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8mb4
COLLATE = utf8mb4_unicode_ci;

-----
-- Table `mye030`.`shootouts`
-----

CREATE TABLE IF NOT EXISTS
`mye030`.`shootouts` (
`date` DATE NOT NULL,
`home_team` INT NOT NULL,
`away_team` INT NOT NULL,
`winner` VARCHAR(50) NOT NULL,
`first_shooter` VARCHAR(50) NULL DEFAULT
NULL,
PRIMARY KEY (`date`, `home_team`,
`away_team`, `winner`),
CONSTRAINT `shootouts_ibfk_1`
FOREIGN KEY (`date` , `home_team` ,
`away_team`)
REFERENCES `mye030`.`results` (`date` ,
`home_team` , `away_team`))
ENGINE = InnoDB
DEFAULT CHARACTER SET = utf8mb4
COLLATE = utf8mb4_unicode_ci;

USE `mye030` ;

-----
-- Placeholder table for view
`mye030`.`xores`


CREATE TABLE IF NOT EXISTS `mye030`.`xores`(
`Display_Name` INT, `Official_Name` INT,
`start_year` INT, `end_year` INT,
`ISO_Code` INT, `home_wins` INT,
`away_wins` INT, `total_wins` INT,
`home_losses` INT, `away_losses` INT,
`total_losses` INT, `home_ties` INT,
`away_ties` INT, `total_ties` INT,
`home_matches` INT, `away_matches` INT,
`total_matches` INT);

-----
-- Placeholder table for view
`mye030`.`yearly_goals_matches`


CREATE TABLE IF NOT EXISTS
`mye030`.`yearly_goals_matches`(`scorer` INT,
`ISO_Code` INT, `year` INT,
`total_year_matches` INT,
`total_year_goals` INT);

-----
-- Placeholder table for view
`mye030`.`yearlymatchstats`


CREATE TABLE IF NOT EXISTS
`mye030`.`yearlymatchstats`(`ISO_Code` INT,
`year` INT, `total_year_matches` INT,
`total_year_draws` INT, `total_year_wins` INT,
`total_year_losses` INT,
`had_shootouts` INT);

-----
-- View `mye030`.`country_years`


DROP TABLE IF EXISTS
`mye030`.`country_years`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW `mye030`.`country_years` AS
select `c`.`ISO_Code` AS
`ISO_Code`, `c`.`Display_Name` AS
`Display_Name`, `c`.`Official_Name` AS
`Official_Name`, min(`m`.`date`) AS
`start_year`, max(`m`.`date`) AS `end_year`
from (`mye030`.`countries` `c` join
`mye030`.`results` `m` on(((`m`.`home_team` =
`c`.`ISO_Code`) or (`m`.`away_team` =
`c`.`ISO_Code')))) group by `c`.`ISO_Code`;

```

```

-- -----
-- View `mye030`.`globalstats`
-- -----
DROP TABLE IF EXISTS `mye030`.`globalstats`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW `mye030`.`globalstats` AS
select `mye030`.`x`.`ISO_Code` AS
`ISO_Code`, `mye030`.`x`.`Display_Name` AS
`Display_Name`, `mye030`.`x`.`total_wins` AS
`total_wins`, ((`mye030`.`x`.`total_wins` *
3) + `mye030`.`x`.`total_ties`) AS
`score`, (year(`mye030`.`x`.`end_year`) -
year(`mye030`.`x`.`start_year`)) AS
`years_playing` from `mye030`.`xores` `x`;

-- -----
-- View `mye030`.`players`
-- -----
DROP TABLE IF EXISTS `mye030`.`players`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW `mye030`.`players` AS select
`s`.`scorer` AS `scorer`, `s`.`team` AS
`team`, min(year(`s`.`date`)) AS
`starting_year`, max(year(`s`.`date`)) AS
`ending_year`, count(0) AS
`total_goals`, max(`match_goals`.`max_goals`)
AS `max_goals_per_match` from
(`mye030`.`scorers` `s` join (select
`mye030`.`scorers`.`date` AS
`date`, `mye030`.`scorers`.`home_team` AS
`home_team`, `mye030`.`scorers`.`away_team`
AS `away_team`, `mye030`.`scorers`.`scorer`
AS `scorer`, count(0) AS `max_goals` from
`mye030`.`scorers` group by
`mye030`.`scorers`.`date`, `mye030`.`scorers`
`.home_team`, `mye030`.`scorers`.`away_team`
`, `mye030`.`scorers`.`scorer`)
`match_goals` on((`s`.`date` =
`match_goals`.`date`) and (`s`.`home_team` =
`match_goals`.`home_team`) and
(`s`.`away_team` =
`match_goals`.`away_team`) and
(`s`.`scorer` = `match_goals`.`scorer`)))
group by `s`.`team`, `s`.`scorer`;

-- -----
-- View `mye030`.`stats`
-- -----
DROP TABLE IF EXISTS `mye030`.`stats`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW `mye030`.`stats` AS select
`c`.`ISO_Code` AS `ISO_Code`, sum((case when
(`m`.`home_team` = `c`.`ISO_Code`) and
(`m`.`home_score` > `m`.`away_score`)) then
1 else 0 end)) AS `home_wins`, sum((case
when ((`m`.`away_team` = `c`.`ISO_Code`)
and (`m`.`away_score` > `m`.`home_score`))
then 1 else 0 end)) AS
`away_wins`, sum((case when
(`m`.`away_team` = `c`.`ISO_Code`) and
(`m`.`away_score` > `m`.`home_score`)) then
1 when ((`m`.`home_team` = `c`.`ISO_Code`)
and (`m`.`home_score` > `m`.`away_score`))
then 1 else 0 end)) AS
`total_wins`, sum((case when
(`m`.`home_team` = `c`.`ISO_Code`) and
(`m`.`home_score` < `m`.`away_score`)) then
1 else 0 end)) AS `home_losses`, sum((case
when ((`m`.`away_team` = `c`.`ISO_Code`)
and (`m`.`away_score` < `m`.`home_score`))
then 1 else 0 end)) AS
`away_losses`, sum((case when
(`m`.`away_team` = `c`.`ISO_Code`) and
(`m`.`away_score` < `m`.`home_score`)) then
1 when ((`m`.`home_team` = `c`.`ISO_Code`)
and (`m`.`home_score` < `m`.`away_score`))
then 1 else 0 end)) AS
`total_losses`, sum((case when
(`m`.`home_team` = `c`.`ISO_Code`) and
(`m`.`home_score` = `m`.`away_score`)) then
1 else 0 end)) AS `home_ties`, sum((case
when ((`m`.`away_team` = `c`.`ISO_Code`)
and (`m`.`away_score` = `m`.`home_score`))
then 1 else 0 end)) AS
`away_ties`, sum((case when
(`m`.`away_team` = `c`.`ISO_Code`) and
(`m`.`away_score` = `m`.`home_score`)) then
1 when ((`m`.`home_team` = `c`.`ISO_Code`)
and (`m`.`home_score` = `m`.`away_score`))
then 1 else 0 end)) AS
`total_ties`, sum((case when
(`m`.`home_team` = `c`.`ISO_Code`) then 1
else 0 end)) AS `home_matches`, sum((case
when (`m`.`away_team` = `c`.`ISO_Code`)
then 1 else 0 end)) AS
`away_matches`, sum((case when
(`m`.`away_team` = `c`.`ISO_Code`) then 1
when (`m`.`home_team` = `c`.`ISO_Code`)
then 1 else 0 end)) AS `total_matches` from
(`mye030`.`countries` `c` join
`mye030`.`results` `m` on(((`m`.`home_team` =
`c`.`ISO_Code`) or (`m`.`away_team` =
`c`.`ISO_Code`)))) group by `c`.`ISO_Code`;

-- -----
-- View `mye030`.`xores`
-- -----
DROP TABLE IF EXISTS `mye030`.`xores`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW `mye030`.`xores` AS select
`mye030`.`c`.`Display_Name` AS
`Display_Name`, `mye030`.`c`.`Official_Name` AS
`Official_Name`, `mye030`.`c`.`start_year` AS
`start_year`, `mye030`.`c`.`end_year` AS
`end_year`, `mye030`.`s`.`ISO_Code` AS
`ISO_Code`, `mye030`.`s`.`home_wins` AS
`home_wins`, `mye030`.`s`.`away_wins` AS
`away_wins`, `mye030`.`s`.`total_wins` AS

```

```

`total_wins`, `mye030`.`s`.`home_losses` AS
`home_losses`, `mye030`.`s`.`away_losses` AS
`away_losses`, `mye030`.`s`.`total_losses` AS
`total_losses`, `mye030`.`s`.`home_ties` AS
`home_ties`, `mye030`.`s`.`away_ties` AS
`away_ties`, `mye030`.`s`.`total_ties` AS
`total_ties`, `mye030`.`s`.`home_matches` AS
`home_matches`, `mye030`.`s`.`away_matches` AS
`away_matches`, `mye030`.`s`.`total_matches` AS
`total_matches` from
(`mye030`.`country_years` `c` join
`mye030`.`stats` `s`
on(`mye030`.`c`.`ISO_Code` =
`mye030`.`s`.`ISO_Code`)) group by
`mye030`.`c`.`ISO_Code`;

-- -----
-- View `mye030`.`yearly_goals_matches`
-- -----
DROP TABLE IF EXISTS
`mye030`.`yearly_goals_matches`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW
`mye030`.`yearly_goals_matches` AS select
`s`.`scorer` AS
`scorer`, `mye030`.`y`.`ISO_Code` AS
`ISO_Code`, `mye030`.`y`.`year` AS
`year`, `mye030`.`y`.`total_year_matches` AS
`total_year_matches`, count(0) AS
`total_year_goals` from
(`mye030`.`scorers` `s` join
`mye030`.`countries` `c`
on(((`c`.`Official_Name` = `s`.`team`) or
(`c`.`Display_Name` = `s`.`team`))) join
`mye030`.`yearlymatchstats` `y`
on(((year(`s`.`date`) =
`mye030`.`y`.`year`) and (`c`.`ISO_Code` =
`mye030`.`y`.`ISO_Code`))) group by
`s`.`scorer`, `mye030`.`y`.`ISO_Code`, `mye030`.`y`.`year`,
`mye030`.`y`.`total_year_matches`);

-- -----
-- View `mye030`.`yearlymatchstats`
-- -----
DROP TABLE IF EXISTS
`mye030`.`yearlymatchstats`;
USE `mye030`;
CREATE OR REPLACE ALGORITHM=UNDEFINED
DEFINER=`root`@`localhost` SQL SECURITY
DEFINER VIEW `mye030`.`yearlymatchstats` AS
select `c`.`ISO_Code` AS
`ISO_Code`, year(`r`.`date`) AS
`year`, sum((case when ((`r`.`away_team` =
`c`.`ISO_Code`) or (`r`.`home_team` =
`c`.`ISO_Code`)) then 1 else 0 end)) AS
`total_year_matches`, sum((case when
((`r`.`away_team` = `c`.`ISO_Code`) and
(`r`.`away_score` = `r`.`home_score`)) then
1 when ((`r`.`home_team` = `c`.`ISO_Code`)
and (`r`.`home_score` = `r`.`away_score`))
then 1 else 0 end)) AS
`total_year_draws`, sum((case when
((`r`.`away_team` = `c`.`ISO_Code`) and
(`r`.`away_score` > `r`.`home_score`)) then
1 when ((`r`.`home_team` = `c`.`ISO_Code`)
and (`r`.`away_score` < `r`.`home_score`))
then 1 else 0 end)) AS
`total_year_wins`, sum((case when
((`r`.`away_team` = `c`.`ISO_Code`) and
(`r`.`away_score` < `r`.`home_score`)) then
1 when ((`r`.`home_team` = `c`.`ISO_Code`)
and (`r`.`away_score` > `r`.`home_score`))
then 1 else 0 end)) AS
`total_year_losses`, sum((case when
(`r`.`date` = `s`.`date`) and
(`r`.`away_team` = `s`.`away_team`) and
(`r`.`home_team` = `s`.`home_team`) and
((`r`.`away_team` = `c`.`ISO_Code`) or
(`r`.`home_team` = `c`.`ISO_Code`))) then 1
else 0 end)) AS `had_shootouts` from
(`mye030`.`countries` `c` join
`mye030`.`results` `r` on(((`r`.`home_team` =
`c`.`ISO_Code`) or (`r`.`away_team` =
`c`.`ISO_Code`)))) left join
`mye030`.`shootouts` `s` on(((`s`.`date` =
`r`.`date`) and (`s`.`home_team` =
`r`.`home_team`) and (`s`.`away_team` =
`s`.`away_team`))) group by
`c`.`ISO_Code`, `year`;

SET SQL_MODE=@OLD_SQL_MODE;
SET
FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS;
SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS;

```

1.2 ΣΧΕΣΙΑΚΟ ΣΧΗΜΑ ΣΕ ΦΥΣΙΚΟ ΕΠΙΠΕΔΟ

1.2.1 ΡΥΘΜΙΣΗ ΤΩΝ ΠΑΡΑΜΕΤΡΩΝ ΤΟΥ DBMS

Δεν έχει γίνει καμία αλλαγή στις παραμέτρους του DBMS καθώς οι default τιμές είναι αρκετές για την αποθήκευση της βάσης μας

1.2.2 ΡΥΘΜΙΣΗ ΤΟΥ ΦΥΣΙΚΟΥ ΣΧΗΜΑΤΟΣ ΤΗΣ ΒΑΣΗΣ ΔΕΔΟΜΕΝΩΝ

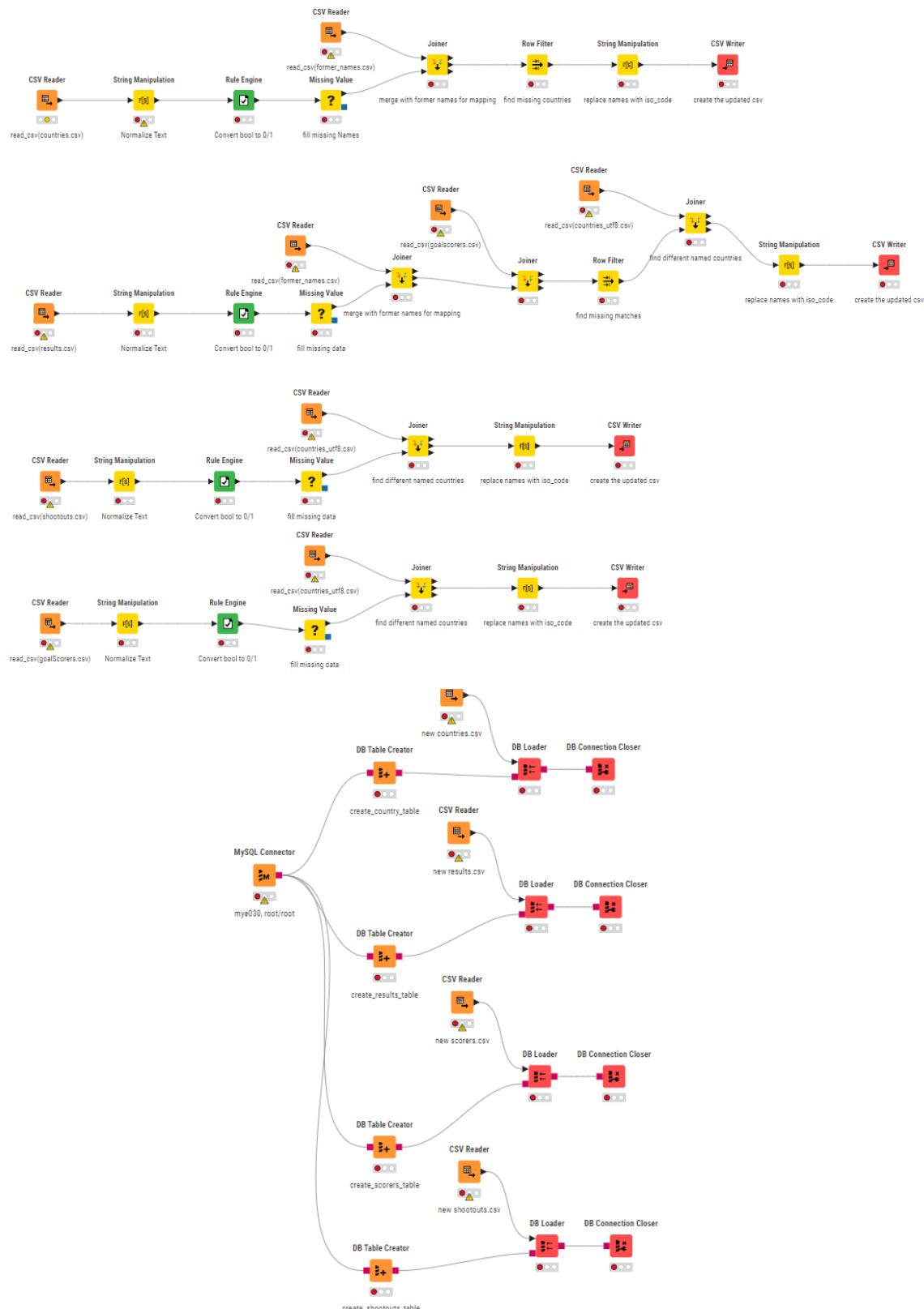
Για την πιο εύκολη υλοποίηση των custom queries στην java έχουν δημιουργηθεί μερικά views τα οποια καθιστούν πολύ ευκολότερη την επιστροφή δεδομένων από την βάση και κρένουν την πολυπλοκότητα των queries. Πιο συγκεκριμένα αυτά είναι τα country_years, globalstats, players, stats, xores, yearly_goals_matches, yearly_match_stats. Επιπλέον έχει υλοποιηθεί και ένα materialized view που ονομάζεται final το οποίο για λογούς απόδοσης (πολύ μεγάλη καθυστέρηση εμφάνισης αποτελεσμάτων και πιθανό timeout) αποφασίσαμε ότι θα είναι καλύτερο να υπάρχει ως ένα materialized view.

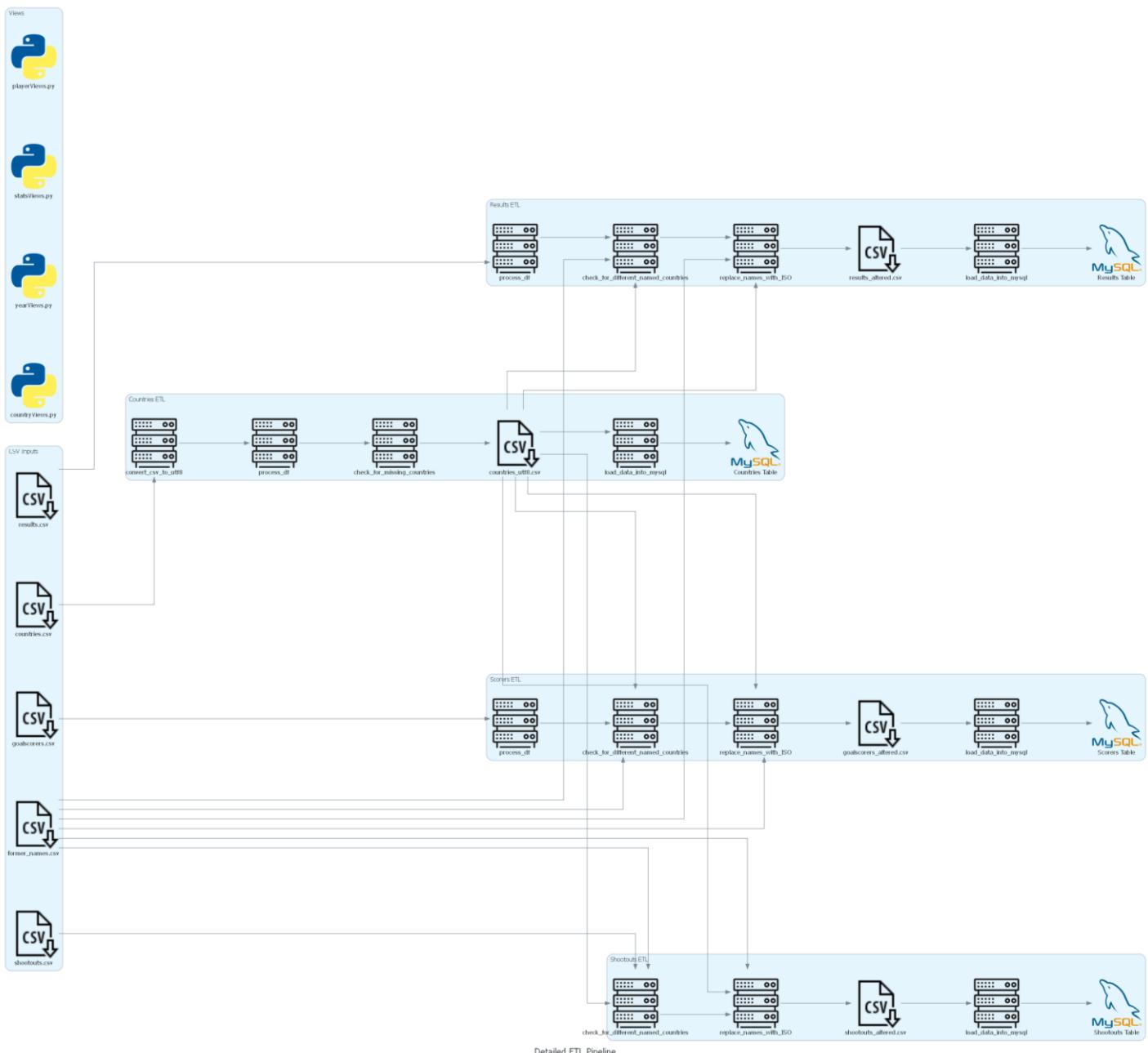
1.2.3 ΡΥΘΜΙΣΗ ΑΣΦΑΛΕΙΑΣ

Δεν υπάρχει δυνατότητα επεξεργασίας της βάσης μέσω της εφαρμογής. Πλήρη ασφάλεια 😊

2 ΑΡΧΙΤΕΚΤΟΝΙΚΗ ΛΟΓΙΣΜΙΚΟΥ

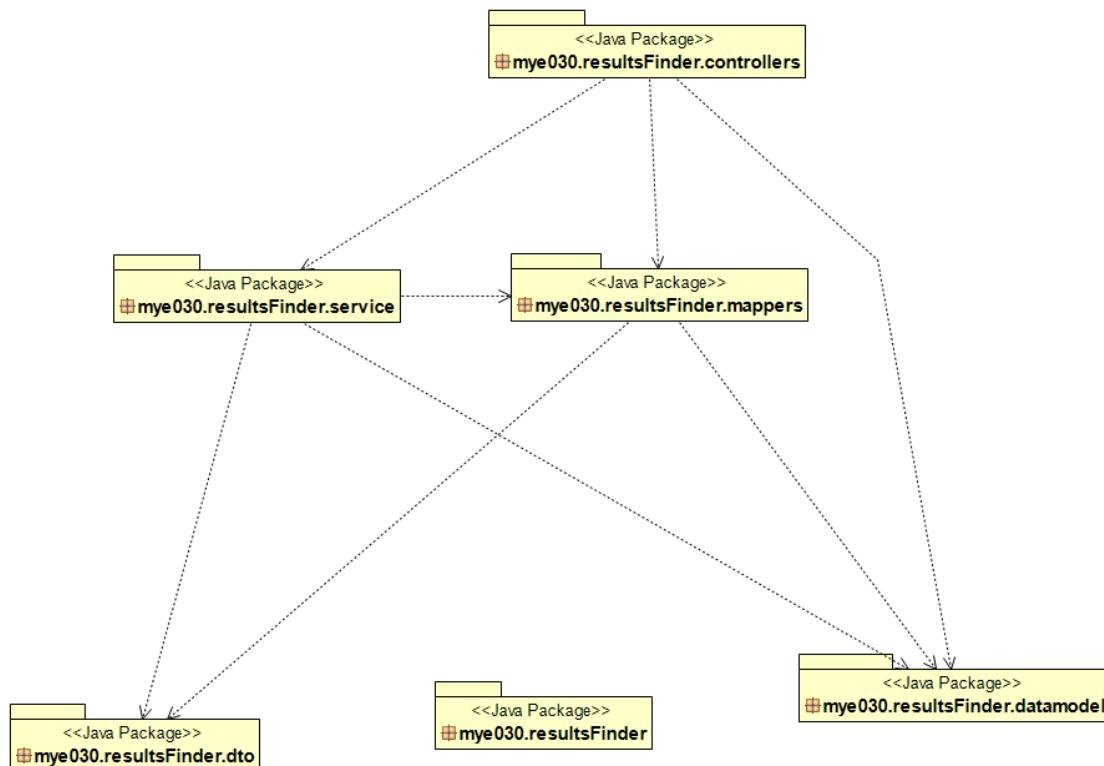
2.1 ΑΡΧΙΤΕΚΤΟΝΙΚΗ ΚΑΙ ΔΟΜΗ ETL





Auto generated ETL Diagram through python script

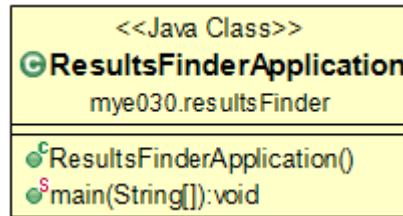
2.2 ΔΙΑΓΡΑΜΜΑΤΑ ΠΑΚΕΤΩΝ / ΥΠΟΣΥΣΤΗΜΑΤΩΝ ΚΕΝΤΡΙΚΗΣ ΕΦΑΡΜΟΓΗΣ



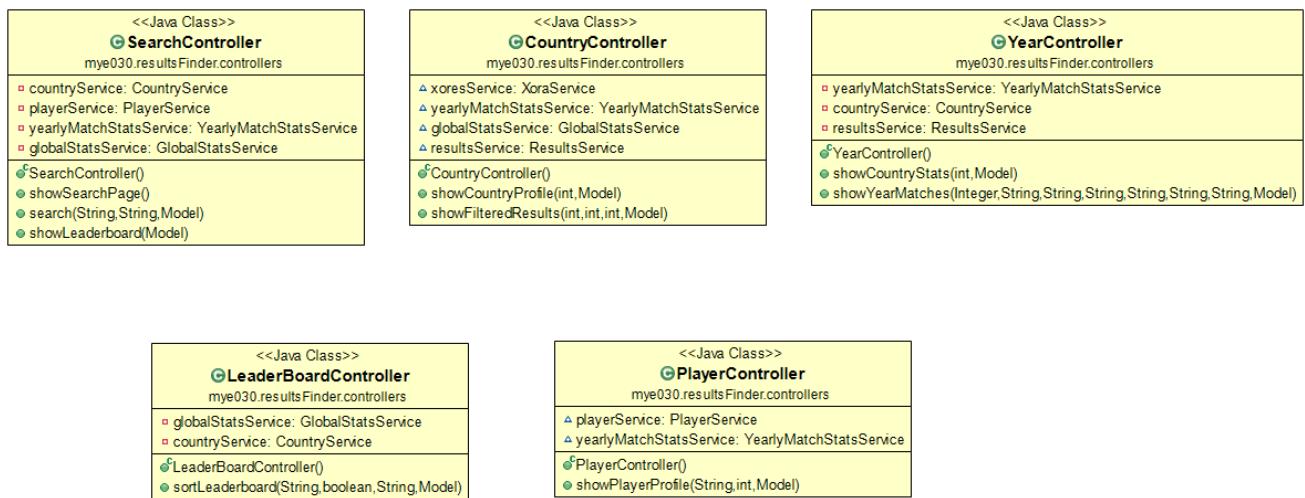
Το παραπάνω διάγραμμα απεικονίζει την δομή των πακέτων του συστήματος και τις μεταξύ τους εξαρτήσεις. Έχουμε διακριτά πακέτα για τους **controllers**, τα **services**, τα **data transfer objects (dto)**, τα **datamodels**, αλλά και τους **mappers**.

Το πακέτο Controllers εξαρτάται από τα Services, τα DataModels, αλλά και τα Mappers, ενώ η επιχειρησιακή λογική υλοποιείται στο Service, το οποίο διαχειρίζεται τα δεδομένα μέσω των mappers και DataModels και DTOs. Με αυτή την δομή ο κώδικας καθίσταται επεκτάσιμος και ευκολότερος στη συντήρηση.

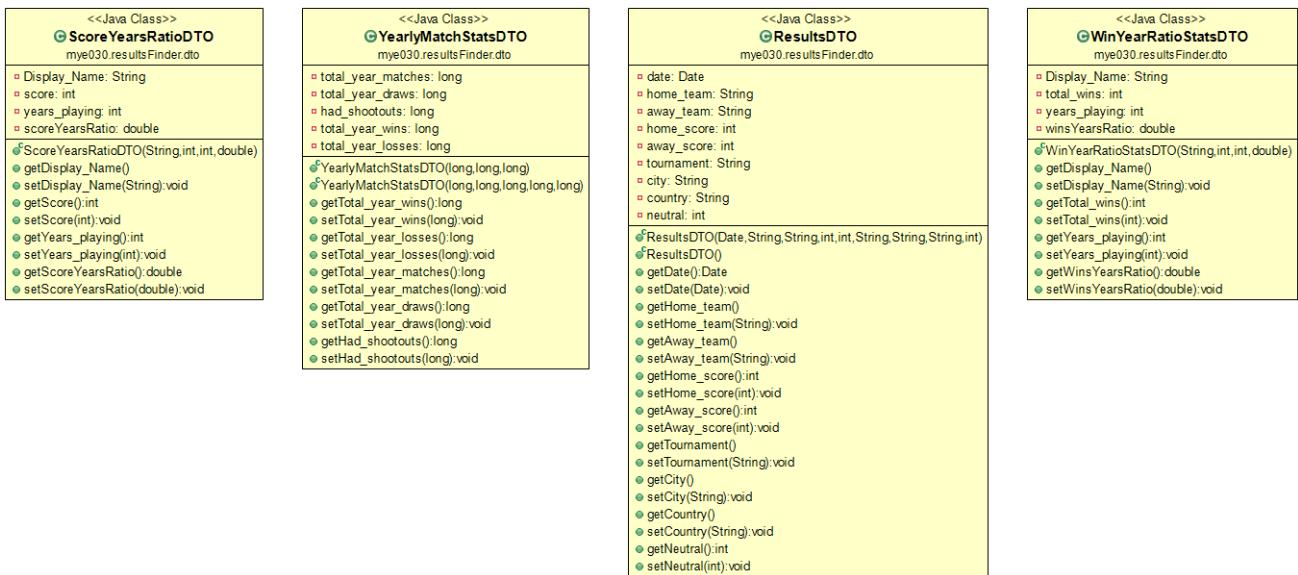
2.3 ΔΙΑΓΡΑΜΜΑ(ΤΑ) ΚΛΑΣΕΩΝ ΚΕΝΤΡΙΚΗΣ ΕΦΑΡΜΟΓΗΣ



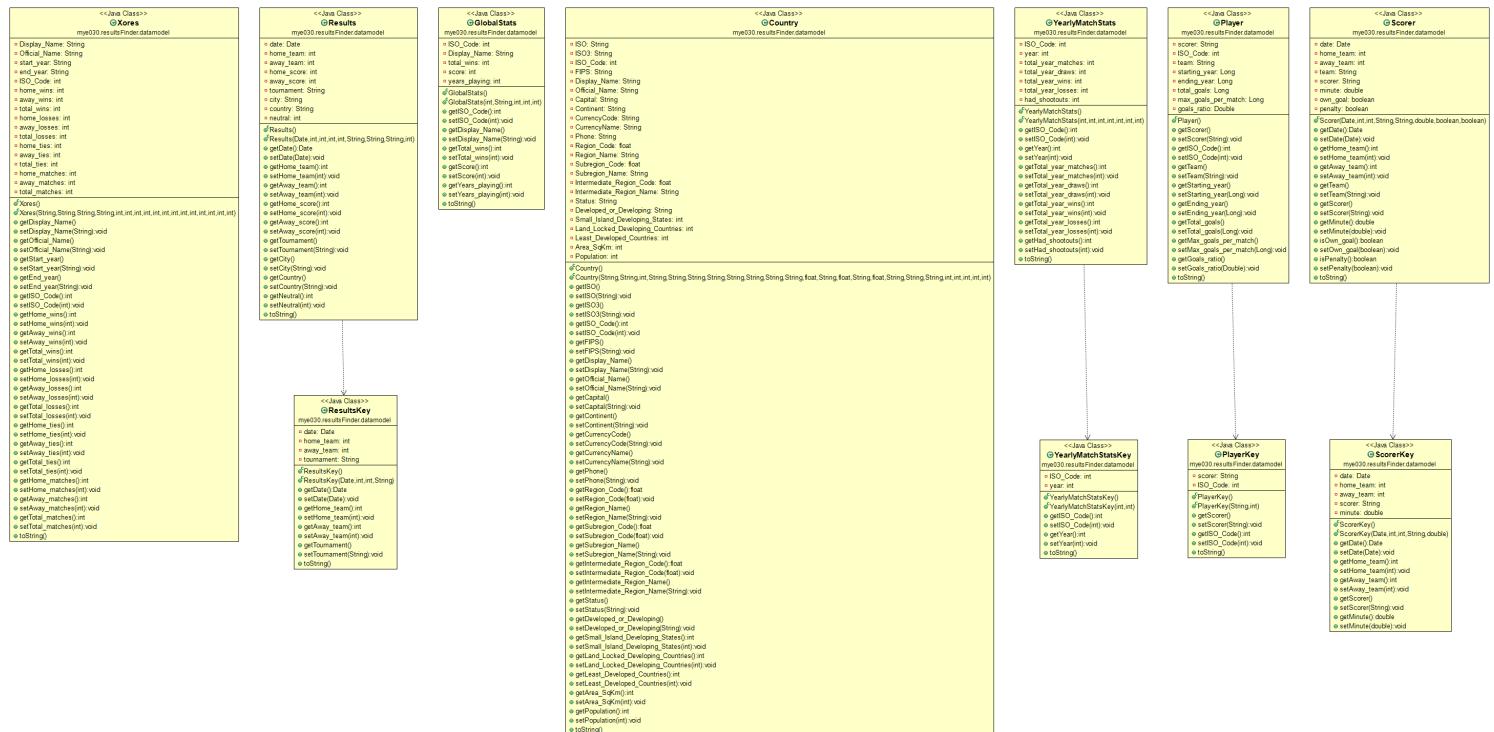
2.3.1 Διάγραμμα κλάσης main εφαρμογής



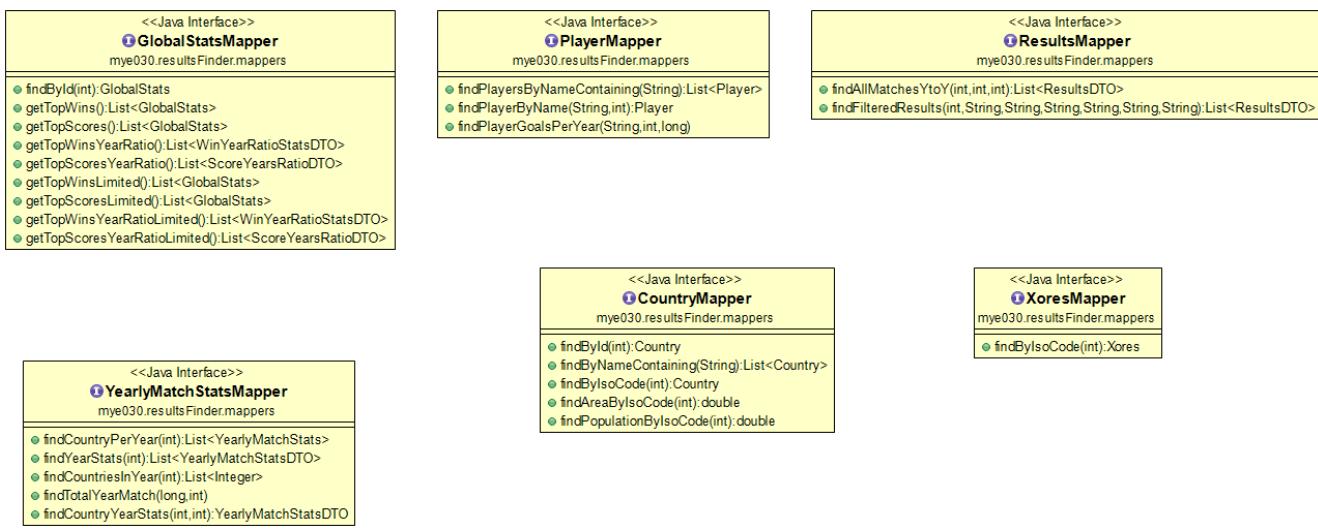
2.3.2 Διάγραμμα κλάσης Controllers



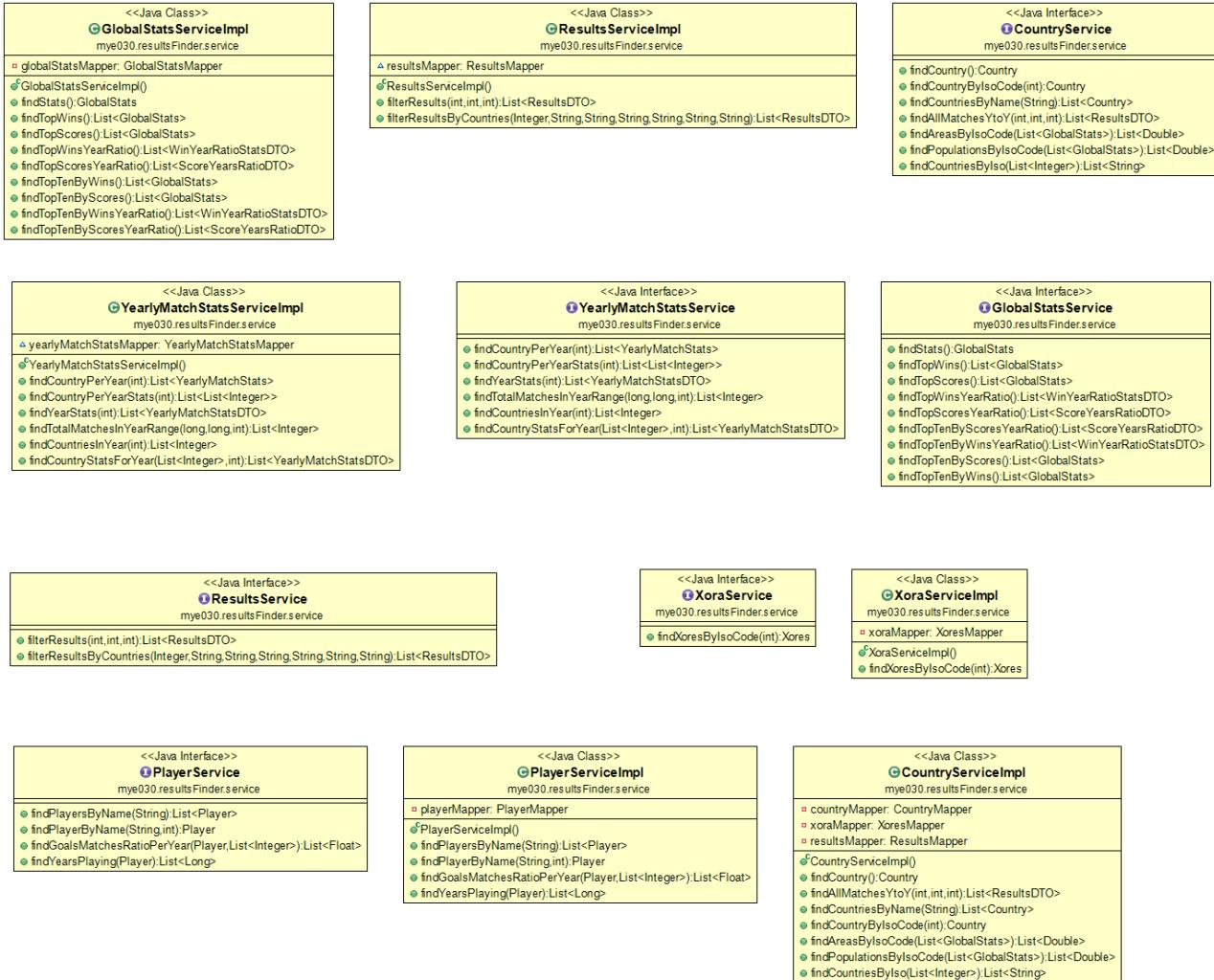
2.3.3 Διάγραμμα κλάσης DTOs



2.3.4 Διάγραμμα κλάσης DataModels



2.3.5 Διάγραμμα κλάσης Mappers



2.3.6 Διάγραμμα κλάσης Services

3 ΥΠΟΔΕΙΓΜΑΤΑ ΕΡΩΤΗΣΕΩΝ ΚΑΙ ΑΠΑΝΤΗΣΕΩΝ

- Αναζήτηση scorer και προβολή καθολικών στατιστικών:

Αρχική σελίδα:

The screenshot shows the Boogle search interface. The search bar at the top contains the word "tony". Below it, there are three radio buttons: "Player" (selected), "Year", and "Country". At the bottom of the search bar are two buttons: "Search" and "Leaderboard".

Προβολή παίκτων που μοιάζουν με τον όρο αναζήτησης:

The screenshot shows the search results page for "tony". The title "Boogle Results" is at the top. Below it is a grid of eight cards, each containing a player's name, team, and country. The cards are arranged in three rows: Row 1 has four cards (Antony Ewing, Tony Dunne, Tony Dunne, Tony Greish); Row 2 has four cards (Tony Woodcock, Tony Henderson, Tony Persson, Tony Galvin); Row 3 has four cards (Tony Adams, Tony Cascarino, Antony de Ávila, Tony Yeboah).

Προφίλ επιλεγμένου παίκτη:

The screenshot shows the profile page for Tony Woodcock. At the top left is the title "Tony Woodcock Profile". Below it is a summary table with the following data:

Team:	England
Starting Year:	1979
Ending Year:	1984
Total Goals:	11
Max Goals per Match:	2
Goals Ratio:	0.1594

At the bottom left is a "Go Back" button. To the right is a line chart titled "Goals Ratio per Year" showing the ratio of goals scored per year from 1979 to 1984.

3.2 Year search

Boogle

2000

Player Year Country

[Search](#) [Leaderboard](#)

Match Stats for the year 2000

Total Matches: 1040	Filters for match results in the year 2000
Total Draws: 238	<input type="text"/> Home Region <input type="text"/> Away Region
Matches With Shootouts: 21	<input type="text"/> Home Status <input type="text"/> Away Status
	<input type="text"/> Home Dev Level <input type="text"/> Away Dev Level

[Apply Filters](#)

[Show Country Chart](#)

[← Back to Boogle](#)

Matches With Shootouts: 21

<input type="text"/> Home Status <input type="text"/> Away Status
<input type="text"/> Home Dev Level <input type="text"/> Away Dev Level

[Apply Filters](#)

[Show Country Chart](#)

Match Breakdown by Country

Count

Countries

[← Back to Boogle](#)

Match Stats for the year 2000

Total Matches: 1040

Total Draws: 238

Matches With Shootouts: 21

Filters for match results in the year 2000

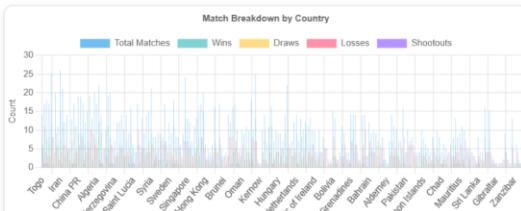
Europe Africa

Home Status Away Status

Home Dev Level Away Dev Level

Apply Filters

Show Country Chart



Filtered Match Results for Year 2000

Date	Home Team	Score	Away Team	Tournament	City	Country	Neutral Ground
2000-10-04	France	1 - 1	Cameroon	Friendly	Saint-Denis	France	No
2000-05-28	Malta	0 - 1	South Africa	Friendly	Attard	Malta	No

[← Go Back](#)

3.3 Country search

Boogle

Australia

 Player Year Country[Search](#) | [Leaderboard](#)

Boogle Results

[Australia](#)[Western Australia](#)[← Back to Boogle](#)

Western Australia Profile

Filter for the team's match results
Min Year: e.g., 1872 Max Year: e.g., 2024 Search

ISO Code: 907
Official Name: Western Australia
Years Active: 1967-08-10 / 1980-11-25
Total Matches: 32
Total Wins: 11
Total Losses: 18
Total Ties: 3
Home Matches: 1
Home Wins: 1
Home Losses: 0
Home Ties: 0
Away Matches: 31
Away Wins: 10
Away Losses: 18
Away Ties: 3

[← Go Back](#)

Year	Wins	Losses	Draws	Matches
1967	4	3	0	6
1968	4	0	1	6
1969	2	5	0	7
1970	2	5	0	7
1971	0	1	0	2
1980	0	0	0	2

Western Australia Profile

Filter for the team's match results
Min Year: 1970 Max Year: 1981 Search

ISO Code: 907
Official Name: Western Australia
Years Active: 1967-08-10 / 1980-11-25
Total Matches: 32
Total Wins: 11
Total Losses: 18
Total Ties: 3
Home Matches: 1
Home Wins: 1
Home Losses: 0
Home Ties: 0
Away Matches: 31
Away Wins: 10
Away Losses: 18
Away Ties: 3

[← Go Back](#)

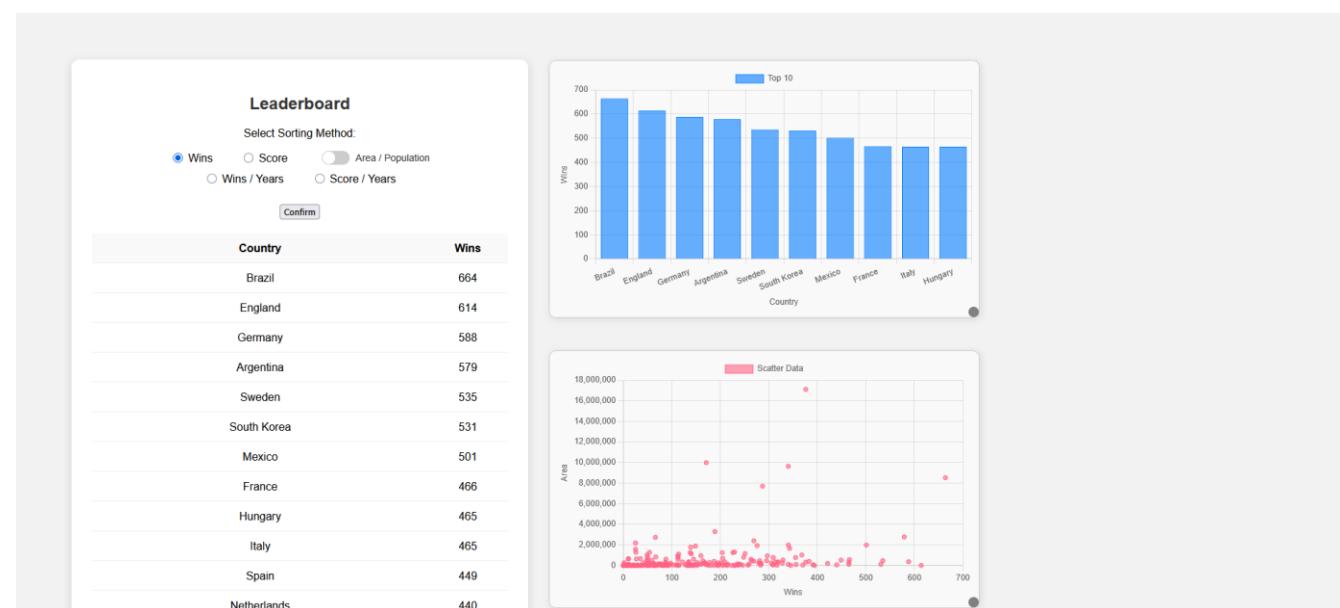
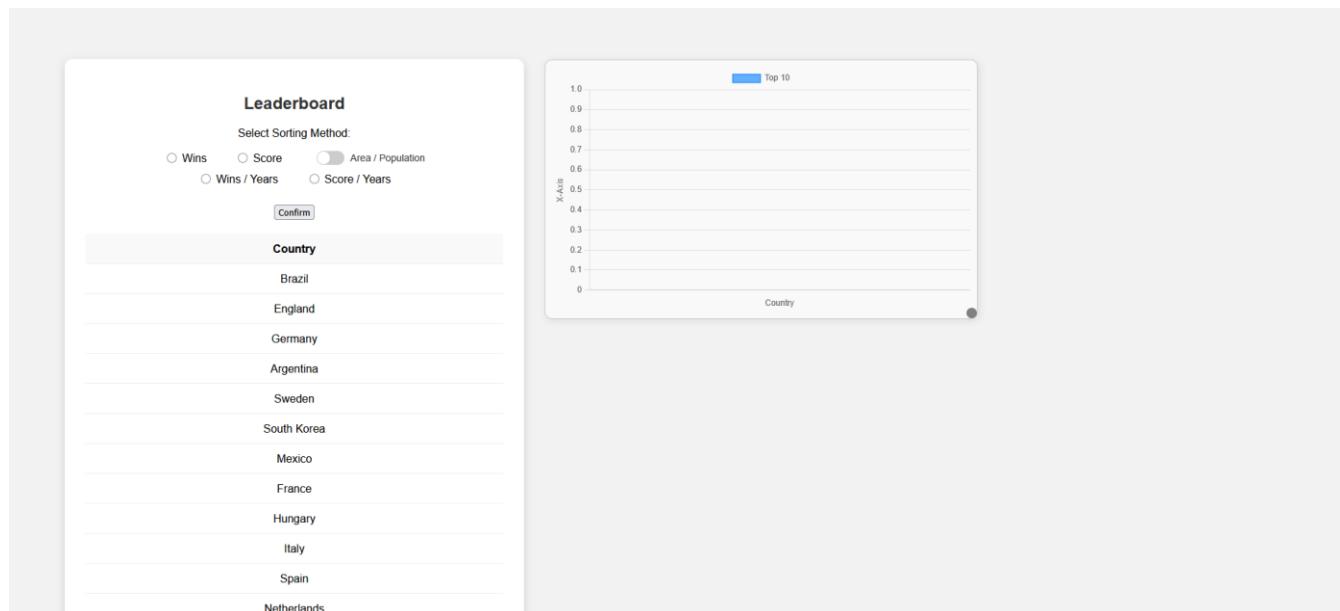
Year	Wins	Losses	Draws	Matches
1967	4	3	0	6
1968	4	0	1	6
1969	2	5	0	7
1970	2	5	0	7
1971	0	1	0	2
1980	0	0	0	2

Match Results for Western Australia

Date	Home Team	Score	Away Team	Tournament	City	Country	Neutral Ground
1971-06-06	Cambodia	2 - 2	Western Australia	Indonesia Tournament	Jakarta	Indonesia	Yes
1971-06-09	Malaysia	3 - 2	Western Australia	Indonesia Tournament	Jakarta	Indonesia	Yes
1980-11-16	Brunei	0 - 2	Western Australia	King's Cup	Bangkok	Thailand	Yes
1980-11-25	Singapore	1 - 1	Western Australia	King's Cup	Bangkok	Thailand	Yes

[← Go Back](#)

3.4 Leaderboard



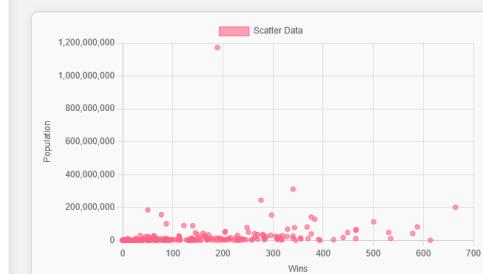
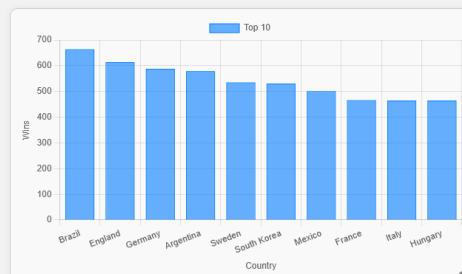
Leaderboard

Select Sorting Method:

- Wins
- Score
- Area / Population
- Wins / Years
- Score / Years

Confirm

Country	Wins
Brazil	664
England	614
Germany	588
Argentina	579
Sweden	535
South Korea	531
Mexico	501
France	466
Hungary	465
Italy	465
Spain	449
Netherlands	440



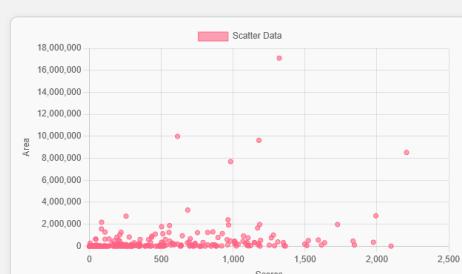
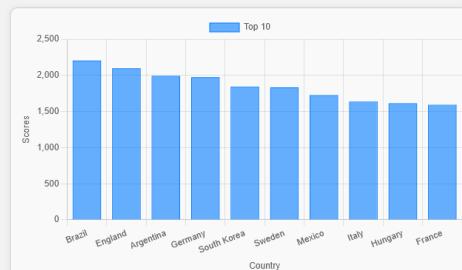
Leaderboard

Select Sorting Method:

- Wins
- Score
- Area / Population
- Wins / Years
- Score / Years

Confirm

Country	Score
Brazil	2206
England	2099
Argentina	1993
Germany	1976
South Korea	1843
Sweden	1835
Mexico	1727
Italy	1636
Hungary	1614
France	1592
Spain	1523
Netherlands	1513



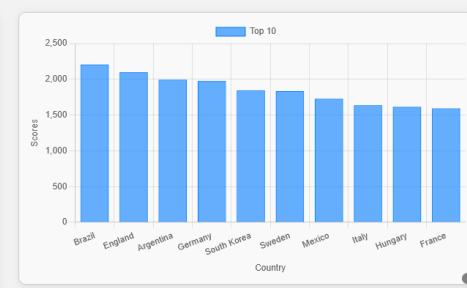
Leaderboard

Select Sorting Method:

- Wins Score Area / Population
- Wins / Years Score / Years

Confirm

Country	Score
Brazil	2206
England	2099
Argentina	1993
Germany	1976
South Korea	1843
Sweden	1835
Mexico	1727
Italy	1636
Hungary	1614
France	1592
Spain	1523
Netherlands	1513



Leaderboard

Select Sorting Method:

- Wins Score Area / Population
- Wins / Years Score / Years

Confirm

Country	Wins	Years	Wins / Year
South Korea	531	75	7.08
Brazil	664	110	6.0364
Czech Republic	187	31	6.0323
County of Nice	6	1	6.0
Saudi Arabia	340	61	5.5738
Uzbekistan	164	32	5.125
Germany	588	116	5.069
Yorkshire	5	1	5.0
Mexico	501	101	4.9604
Ivory Coast	313	64	4.8906
Qatar	257	54	4.7593
Argentina	579	122	4.7459

