Database Project

MetroPlus Premier League

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Data modelling is essential. Every type of organization can benefit from a good database design, whether it is a store delivering products, a company doing statistics or a sports league organizing a competition. For this project, we had to model data in order to propose a database design for an organization. As all the members of our team are soccer fans, we decided to work on a database design for a soccer league : the *MetroPlus Premier League*.

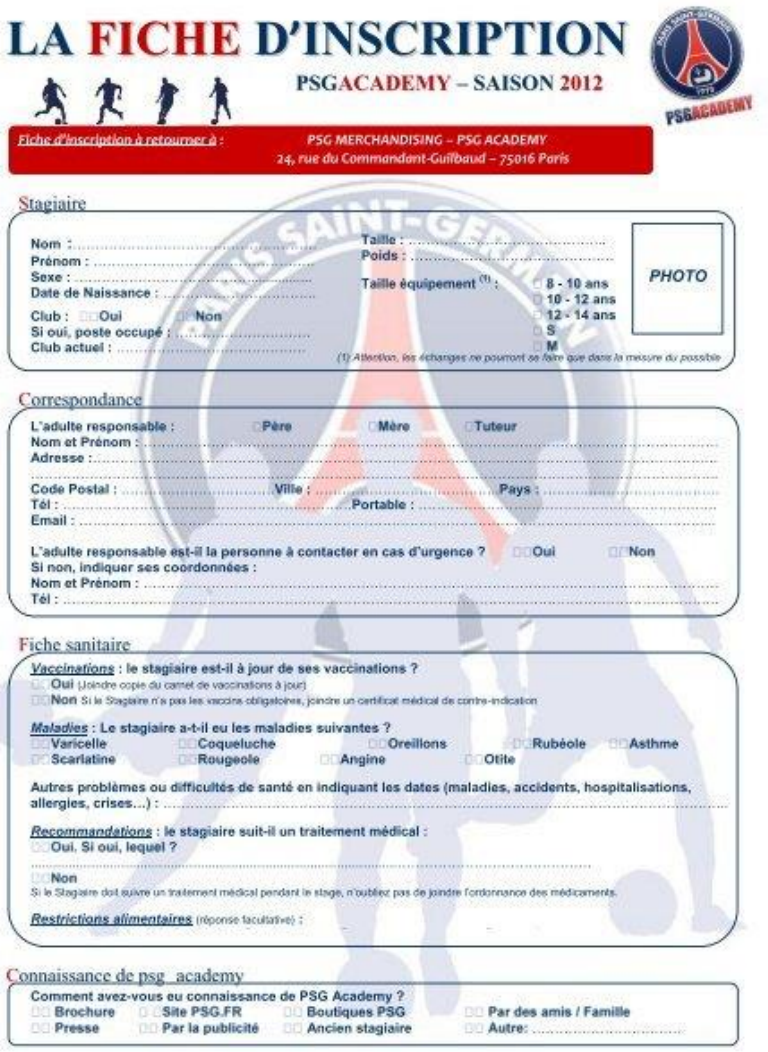
I. Identifying the requirements

The very first part of this project was focused on understanding what we would need in order to design a database for our soccer league. We tried to think about all the requirements we needed to create our database model. We also determined all the functionalities that we wanted to implement in our design. In a nutshell, we wanted with our model to be able to obtain a complete schedule of games for our league, all the primary pieces of information on the players/teams of our league and some statistics on the performances of our league's players/teams. With all these functionalities, we could thus obtain the final rankings of our league (best team, best scorer, best passer…).

II. Harvesting data

Now that we knew what we wanted from our database design. We searched for the ways of harvesting the data we wanted. We found the following documents:

-<u>Inscription form</u>



LA FICHE D'INSCRIPTION

PSGACADEMY – SAISON 2012

Fiche d'inscription à retourner à : PSG MERCHANDISING – PSG ACADEMY 24, rue du Commandant-Guilbaud – 75016 Paris

Stagiaire

Nom : Prénom : Sexe : Date de Naissance : Club : Oui Non Si oui, poste occupé : Club actuel : Taille : Poids : Taille équipement (1) : 8 - 10 ans 10 - 12 ans 12 - 14 ans S M PHOTO

(1) Attention, les échanges ne pourront se faire que dans la mesure du possible

Correspondance

L'adulte responsable : Père Mère Tuteur Nom et Prénom : Adresse : Code Postal : Ville : Pays : Tél : Portable : Email : L'adulte responsable est-il la personne à contacter en cas d'urgence ? Oui Non Si non, indiquer ses coordonnées : Nom et Prénom : Tél :

Fiche sanitaire

Vaccinations : le stagiaire est-il à jour de ses vaccinations ? Oui (Joindre copie du carnet de vaccinations à jour) Non Si le Stagiaire n'a pas les vaccins obligatoires, joindre un certificat médical de contre-indication

Maladies : Le stagiaire a-t-il eu les maladies suivantes ? Varicelle Coqueluche Oreillons Rubéole Asthme Scarlatine Rougeole Angine Otite

Autres problèmes ou difficultés de santé en indiquant les dates (maladies, accidents, hospitalisations, allergies, crises...) :

Recommandations : le stagiaire suit-il un traitement médical : Oui. Si oui, lequel ? Non Si le Stagiaire doit suivre un traitement médical pendant le stage, n'oubliez pas de joindre l'ordonnance des médicaments.

Restrictions alimentaires (réponse facultative) :

Connaissance de psg_academy

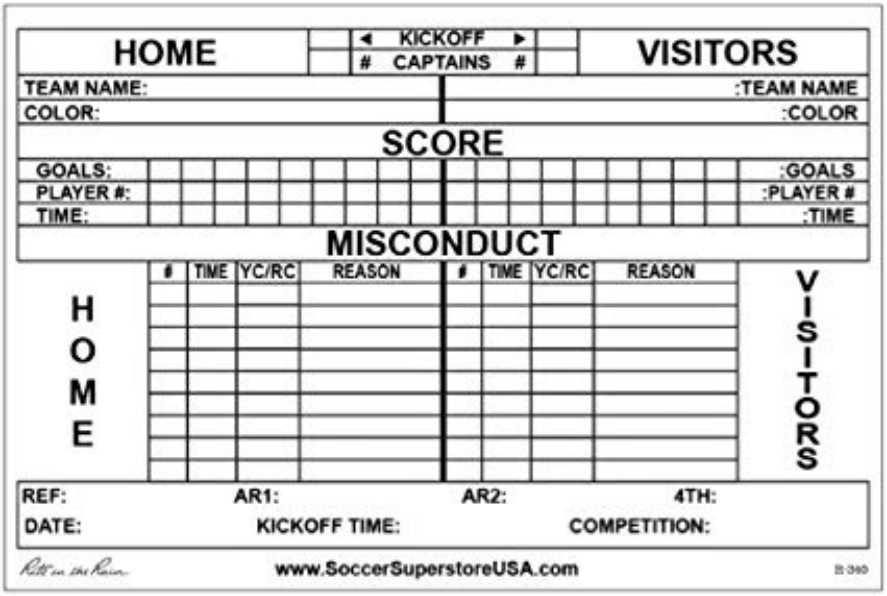
Comment avez-vous eu connaissance de PSG Academy ? Brochure Site PSG.FR Boutiques PSG Par des amis / Famille Presse Par la publicité Ancien stagiaire Autre:

This document is a player registration form for the soccer academy of the Paris Saint-Germain. If we develop a player input form for our league, it could be very similar. However, as we are supposed to be a professional league, the lower part of this form (that is to say : "Correspondance", "Fiche Sanitaire", "Connaissance de psg_academy") will not interest us (the players of our league are their own representant and are fully healthy). The upper part (that is

to say: “Stagiaire”), on the other hand, is much more interesting. For our form, the following input characteristics could interest us: Name, First Name, Age, Club, Position. They could depict us an accurate image of all our league’s players. However, for the form to be even more precise, we could also ask for other pieces of information from our players, i.e., Nationality, Shirt number.

As our league also features some non-league players, we could think of the same kind of input form for our league’s referees and managers. We could also do the same for the teams.

-Scoresheet



Then we decided to look at what an end-of-game scoresheet looks like to see what information the league is recording. Looking at these helped us to choose some more attribute. In fact, to do the final statistic the league is saving each information’s match after match, so we need to do the same. It means that we need to know the number of goals/assist/penalties each player had in each match, but also the time he played. Then one important thing was to know for a given match which team is at home and which one is away. Furthermore, knowing the number of kicks off for each team could be interesting data to do statistics on.

III. Publishing Data

We then searched for ways of publishing the data that we would obtain with our model during the season. We found the following documents:

-Ranking

Pos	Team [v·t·e]	Pld	W	D	L	GF	GA	GD	Pts
1	Manchester City **(C)**	38	32	2	4	95	23	+72	**98**
2	Liverpool	38	30	7	1	89	22	+67	**97**
3	Chelsea	38	21	9	8	63	39	+24	**72**
4	Tottenham Hotspur	38	23	2	13	67	39	+28	**71**
5	Arsenal	38	21	7	10	73	51	+22	**70**
6	Manchester United	38	19	9	10	65	54	+11	**66**
7	Wolverhampton Wanderers	38	16	9	13	47	46	+1	**57**
8	Everton	38	15	9	14	54	46	+8	**54**
9	Leicester City	38	15	7	16	51	48	+3	**52**
10	West Ham United	38	15	7	16	52	55	−3	**52**
11	Watford	38	14	8	16	52	59	−7	**50**
12	Crystal Palace	38	14	7	17	51	53	−2	**49**
13	Newcastle United	38	12	9	17	42	48	−6	**45**
14	Bournemouth	38	13	6	19	56	70	−14	**45**
15	Burnley	38	11	7	20	45	68	−23	**40**
16	Southampton	38	9	12	17	45	65	−20	**39**
17	Brighton & Hove Albion	38	9	9	20	35	60	−25	**36**
18	Cardiff City **(R)**	38	10	4	24	34	69	−35	**34**
19	Fulham **(R)**	38	7	5	26	34	81	−47	**26**
20	Huddersfield Town **(R)**	38	3	7	28	22	76	−54	**16**

In this document, we can see the final ranking of the Premier League of football in England. There are some interesting columns in this table : the name of the team and its number of victories / defeat / draws, but also the column with the number of goals scored, or the column of goals taken. All these columns will be useful to achieve some statistics on the teams of our league. Then, the total number of points is also very important and could permit us to see which team was first without having an attribute named ranking for each of

them. There are also some columns that are not that interesting. For example, the column with the number of games played is useless as all team have the same number of matches in season. Finally, specifying the team managers for each team could be very useful as coaches play a big role in soccer.

We could also think of the type of rankings for the best scorers and passers of our league, for example.

-<u>Schedule</u>

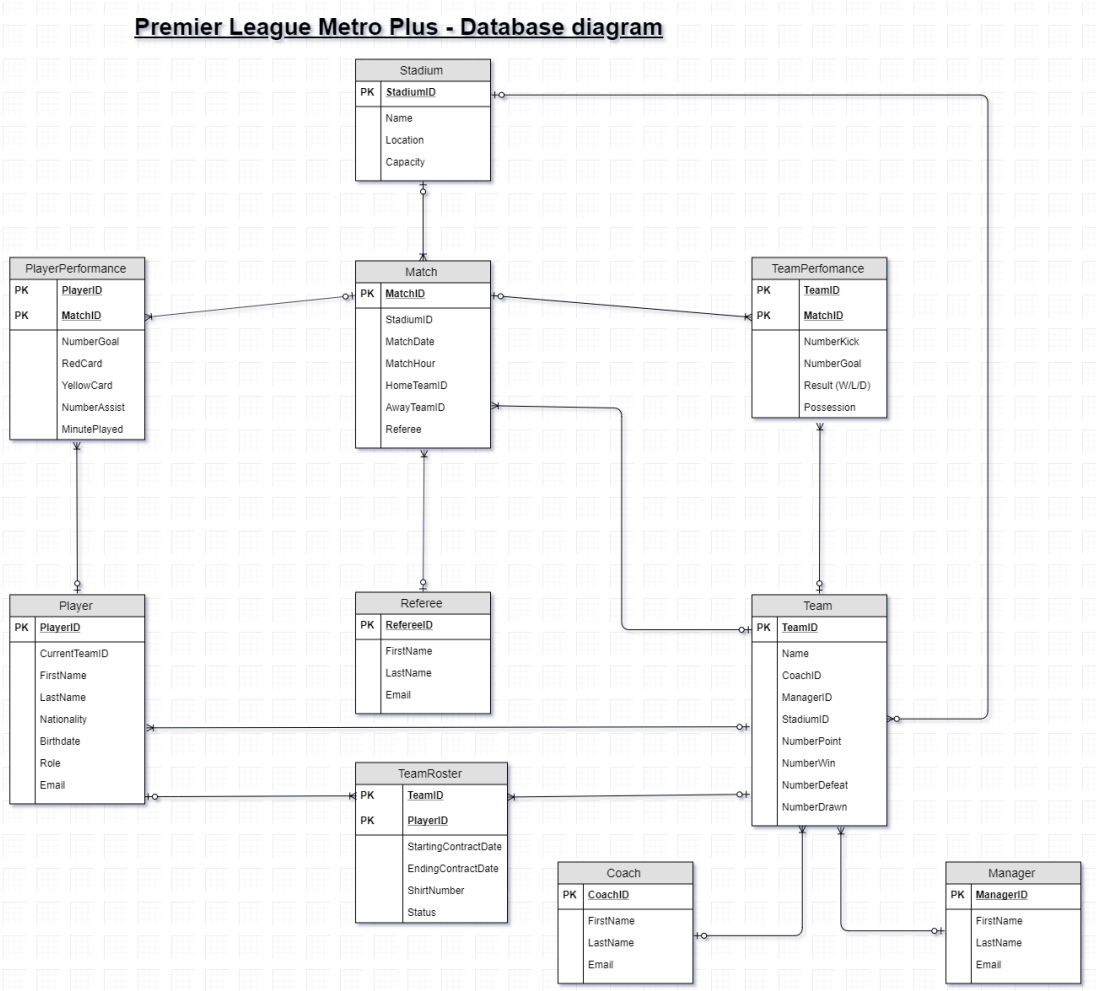
1. Round					
10/08/2018	20:00	Manchester United	-	Leicester City	2:1 (1:0)
11/08/2018	12:30	Newcastle United	-	Tottenham Hotspur	1:2 (1:2)
	15:00	AFC Bournemouth	-	Cardiff City	2:0 (1:0)
	15:00	Fulham FC	-	Crystal Palace	0:2 (0:1)
	15:00	Huddersfield Town	-	Chelsea FC	0:3 (0:2)
	15:00	Watford FC	-	Brighton & Hove Albion	2:0 (1:0)
	17:30	Wolverhampton Wanderers	-	Everton FC	2:2 (1:1)
12/08/2018	13:30	Southampton FC	-	Burnley FC	0:0 (0:0)
	13:30	Liverpool FC	-	West Ham United	4:0 (2:0)
	16:00	Arsenal FC	-	Manchester City	0:2 (0:1)
2. Round					
18/08/2018	12:30	Cardiff City	-	Newcastle United	0:0 (0:0)
	15:00	Everton FC	-	Southampton FC	2:1 (2:0)
	15:00	Leicester City	-	Wolverhampton Wanderers	2:0 (2:0)
	15:00	Tottenham Hotspur	-	Fulham FC	3:1 (1:0)
	15:00	West Ham United	-	AFC Bournemouth	1:2 (1:0)
	17:30	Chelsea FC	-	Arsenal FC	3:2 (2:2)
19/08/2018	13:30	Burnley FC	-	Watford FC	1:3 (1:1)
	13:30	Manchester City	-	Huddersfield Town	6:1 (3:1)
	16:00	Brighton & Hove Albion	-	Manchester United	3:2 (3:1)
20/08/2018	20:00	Crystal Palace	-	Liverpool FC	0:2 (0:1)
3. Round					
25/08/2018	12:30	Wolverhampton Wanderers	-	Manchester City	1:1 (0:0)
	15:00	Arsenal FC	-	West Ham United	3:1 (1:1)
	15:00	AFC Bournemouth	-	Everton FC	2:2 (0:0)
	15:00	Huddersfield Town	-	Cardiff City	0:0 (0:0)
	15:00	Southampton FC	-	Leicester City	1:2 (0:0)
	17:30	Liverpool FC	-	Brighton & Hove Albion	1:0 (1:0)
26/08/2018	13:30	Watford FC	-	Crystal Palace	2:1 (0:0)
	16:00	Fulham FC	-	Burnley FC	4:2 (3:2)
	16:00	Newcastle United	-	Chelsea FC	1:2 (0:0)
27/08/2018	20:00	Manchester United	-	Tottenham Hotspur	0:3 (0:0)

This document is a schedule for the 2018/19 seasons of the Barclays Premier League. As we will develop a schedule for our league, it will be very useful to use it as a model. Indeed, almost all the pieces of information we would like to implement in our league

agenda are there: Date, Teams, Results. Still, we think we could make it even better if we add the location (Stadium) and the referee name of the match (Referee).

IV. Designing our Database

With all the research we had previously done, we had enough information to start the second part of this project: designing our database model.



With this final design, we hope to be able to obtain all the results we wanted for our *MetroPlus Premier League*.