

Project Research Document – UEFA Ranking System

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October 1st, 2014

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Detailed Discussion

The Project I have selected is the development of an Android Application that will function as a UEFA Ranking System utility.

The Application will be developed to do the following:

Web API – Pull down League Tables from an official Uefa affiliated Site. This will ensure up to date data for the Database and the Application to then correctly process the correct information for accurate Rankings.

The Web API will also pull down the UEFA Ranking for each team that have been triggered to be included in the rankings.

There will be many permutations implemented to ensure the ranking is calculated and allocated correctly. This is vital to the system functioning correctly and therefore a very high level of attention to detail whilst programming will need to be performed on a constant basis.

The Application will offer the ability for the User to request a real time update on the current rankings. This will be implemented in the system through the Web API, Database and the Java Coding as the latest information will need to be taken from the appropriate League and UEFA ranking page and then processed for an up to date rank.

A week by week 'main' update on the latest ranking and standings will be done. The application will have the ability to compare the rankings of that week with previous weeks. The capability of 'predicting' final rankings could be implemented by comparing changes in ranking standings over a series of weeks. The user will have the ability to perform these comparisons and see the predictions for themselves.

There will also be a section that will display all the teams in one large ranking system. Each team will be ranked as per their current Uefa Ranking. This will be quite dynamic because should an update take place during a European campaign changes will be made in ranking positions. A search function will be implemented and be made available for the user to use for easy navigation to find the current ranking position of their desired team.

When the user opens the Application initially, an option will be employed to allow them to choose their own team and this will show them their team's current progress. The Ranking for Qualifying Rounds will be quite broad and easy navigation will be essential for good accessibility for Users trying to track their own team's progress.

A Country Ranking section will show the Ranking of Countries in Europe. There are several permutations once again that will be required for correct calculation. Country ranking has a direct impact by results of European matches from teams in their Country.

It should be noted the UEFA ranking system is quite complex and due to the several permutations involved it can be quite difficult for anyone trying to manually predict what Qualifying round their team will be in and whether they will be seeded or unseeded in that round. This is why I believe an application like this is a massive gap in the sport market and will be of benefit to Fans, statistic reviewers but more importantly the clubs themselves. Considering the money involved for getting through qualifying rounds in Europe is so substantial for the board of a club to know in advance they will be seeded could have a major influence on their playing budget for example coming up to the rounds.

For the actual Qualifying rounds teams are allocated to one of four rounds of qualifying. This is set by the country ranking. For example Countries ranked 49-54 in the Country rankings will have the club that wins their league go in to the first round of Qualifying.

Those ranked 17-48 will have the club that wins their league enter round 2. This continues until all clubs have been allocated a Round. Once again there are exceptions which will effect what round a club will go. These complex permutations will need to be implemented correctly otherwise the ranking will not be correct.

The Ranking of a team is Calculated over Five Years. The application will correctly calculate the latest ranking for each team based on the Round they get knocked out in. Further complexity will occur for teams in the Group stages as results there will affect the team rank. The application will need to be implemented to support this and give a correct ranking for that team.

In terms of the GUI the user will initially be provided with a Menu screen to which they will be brought to a Navigation view. The Navigation view will allow the user to navigate to the different elements of the application(Team Ranking, Country Ranking, Qualifying Rounds etc.). The Colour and background will be simple for ease of use and an information section will also be implemented to provide help and assistance for the user.

Existing Applications

Having researched both Android and Windows Store Markets there are some Applications with some relation to the proposed Idea however they are quite limited and do not provide much functionality with regards to the Ranking System.

Features of similar Applications

	UEFA Ranking System(Proposed Idea)	UEFA Ranking (Windows phone)	5 Year Ranking of the UEFA(Android)
Team Ranking(Current)	☑	☑	☑
Country Ranking(Current)	☑	☑	☑
Team Ranking(Next Year)	☑	☒	☑
Country Ranking(Next Year)	☑	☒	☑
Information Section for Ranking	☑	☒	☑
Search Function	☑	☑	☒
Qualifying Rounds	☑	☒	☒
Real Time Updates	☑	☒	☑
Qualifying Predictions	☑	☒	☒
Personal User View	☑	☒	☒
Index and Contents section	☑	☒	☑

5 Year Ranking of the UEFA(Android)

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UEFA 5 Year Ranking

Country Stats

5 Year Ranking - current

Points last 5 Years

Team Stats

All Countries

Current Year

Points last 5 Years

Single Country

Current Year

Points last 5 Years

Rules of 5 Year Ranking

Point Calculation 5 Year Ranking

Number of qualified Teams

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UEFA 5 Year Ranking

All Teams

Team	Rd	W	D	L	Pts	Pts rel
Celtic Glasgow	CL	7	1	2	20,0	4,000
Málaga CF	CL	4	4	0	19,5	2,786
Borussia Dortmund	CL	4	2	0	19,0	2,714
Paris Saint-Germain FC	CL	5	0	1	19,0	3,167
Juventus Turin	CL	3	3	0	18,0	3,000
FC Bayern München	CL	4	1	1	18,0	2,571
Valencia CF	CL	4	1	1	18,0	2,571
FC Porto	CL	4	1	1	18,0	3,000

Teams ActualTeams last 5 Years

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UEFA 5 Year Ranking

England

Team	Rd	W	D	L	Pts	Pts rel
Manchester United	CL	4	0	2	17,0	2,429
FC Arsenal	CL	3	1	2	16,0	2,286
FC Chelsea	EL	3	1	2	11,0	1,571
FC Liverpool	EL	6	2	2	10,5	1,500
Newcastle United	EL	3	4	1	8,5	1,214
Tottenham Hotspur	EL	2	4	0	8,0	1,143
Manchester City	out	0	3	3	7,0	1,000

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UEFA 5 Year Ranking

All Teams

FC Barcelona	18.803
2008/09 2009/10 2010/11 2011/12 2012/13	3,375 3,857 4,714 4,286 2,571
FC Bayern München	18.404
2008/09 2009/10 2010/11 2011/12 2012/13	2,500 4,500 3,500 5,333 2,571
Shakhtar Donetsk	17.600
2008/09 2009/10 2010/11 2011/12 2012/13	7,000 2,600 4,000 1,333 2,667
FC Porto	16.120
2008/09 2009/10 2010/11 2011/12 2012/13	2,286 3,167 6,000 1,667 3,000
Real Madrid	15.500
2008/09 2009/10 2010/11 2011/12 2012/13	1,500 2,714 4,286 4,571 2,429
Manchester United	15.117
2008/09 2009/10 2010/11 2011/12 2012/13	

Teams ActualTeams last 5 Years

Google+

Der kostenlose und

HERUNTERLADEN

(Wahl, 2014)

UEFA Ranking (Windows phone)



(Patierno, 2012)

Platform, Technologies and Libraries

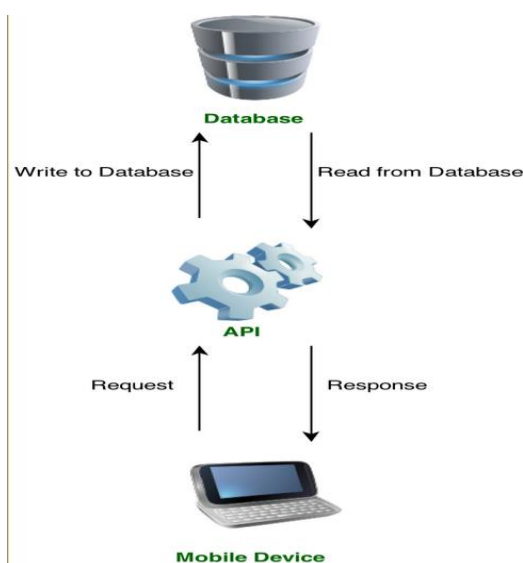
Android

Android is a Mobile specific Operating System which has grown to become the leading Operating system on the market today. With regard to the proposed idea and the choice to what type of Platform to use, Android without doubt gives a very strong case to be prioritised against Windows and IOS due to the population of users on the current Android market. To touch on that paid a recent article found there to be roughly one billion android users with IOS users hitting half that figure(470 million). It is clear Android is a popular choice for users and this has had an influence on my choice to develop the System through Android. (Hay Newman, 2014)

An actual android Application is a mobile software application that is developed for use on Android devices powered by Google's Android platform. The Apps can be developed by anyone and also placed on the Google Play Store to be made available for over one billions devices to download. Apps that are developed can come free of charge to the user or given a premium price to which both the user(70%) and Google(30%) will gain proceeds from.

(Stroud, 2014)

When looking at an android application it can be broken down in to the Application itself, the API and the database. When the application is functioning it can operate by requesting data from the API to which the API writes/reads from the Database, the API then executes a response back to the application.



(Johnson, 2013)

Web API 2

Web API is a framework for building web APIs on top of the .NET framework. It has the ability to work with mobile clients such as Android and Windows Phones. Having researched Web API 2 I have discovered that Web API 2 has the ability to be called from a Windows 8 phone and Android. On the foundation of things HTTP methods are the minimum required by the developer to perform a GET, POST, PUT and DELETE operation. Web API 2 can also support interactive applications that will allow that application to retrieve any information and data from the Web API Application.

With regard to the proposed idea and using Android for the Application for development calling from Web API is quite straight forward. In order to function correcting an operation of simply calling the API and then parsing the results is the basics to what is required. This idea will rely on requiring live data from the internet for essential functions and Web API 2 looks very strong to being the catalyst in that regard.

(Wasson, 2014)

SQLite

SQLite is an Open source database that can support an Android application. It is incredibly efficient considering it only requires approximately 250Kbyte at runtime. It is embedded within every android device so it will provide full compatibility should it be implemented within the Project. Another interesting advantage is how the database is automatically managed by the Android platform, the developer is only required to define SQL statements for creating and updating the database. A factor that is of high importance to the project is speed, efficiency and balanced scalability. With the elements SQLite offers, it is clear it will be an excellent choice for a database for the Android application.

(Vogel, 2014)

Azure Mobile Services

Azure Mobile Services has the ability to provide a cloud-based backend service to Applications of various operating systems. It provides compatibility not only to Windows phones but also to Android and IOS along with various others. Android Developer tools are required in order to pursue implementing the service. The backend can be implemented through both JavaScript and .Net. The service is offered for free with limitations and the Developer will need to be registered with Microsoft Azure. Having researched the Azure services tutorials on Microsoft's site the web service does seem efficient and straight forward in terms of being implemented and working correctly with the Mobile application. It definitely has a strong case for being the backend to the project despite Android being the proposed platform to developing the app.

(Azure.microsoft.com, 2014)

C#

C# is a programming language that offers the functionality to build native apps for iOS, Android and Windows Phone. It can be implemented through .Net and JavaScript. Many large applications such as the Microsoft Azure Service relies on C# for development. The actual interface is friendly with the majority of mobile development still being able to be implemented through Android Applications(Android Studio/Eclipse) and then the actual C# end of things being implemented through programs such as Visual Studio. It is clear C# is a strong force on the mobile market in terms of being used for development and is looking quite likely to be developed throughout the proposed project.

(Shackles, 2012)

Windows Phone

Windows Phone is a mobile specific operating system like Android and IOS designed and developed by Microsoft. It could be seen as the underdog in the market considering Android and IOS users vastly overtake the total users using a Windows Phone. It should be noted however it is on the rise and Microsoft have developed many things since such as the Azure Mobile Services, introducing better mobile devices and improving the Operating system itself to grow their total users in recent times.

Top Smartphone Platforms 3 Month Avg. Ending Apr. 2014 vs. 3 Month Avg. Ending Jan. 2014 Total U.S. Smartphone Subscribers Age 13+ Source: comScore MobiLens			
	Share (%) of Smartphone Subscribers		
	Jan-14	Apr-14	Point Change
Total Smartphone Subscribers	100.0%	100.0%	N/A
Android	51.7%	52.5%	0.8
Apple	41.6%	41.4%	-0.2
BlackBerry	3.1%	2.5%	-0.6
Microsoft	3.2%	3.3%	0.1
Symbian	0.2%	0.2%	0.0

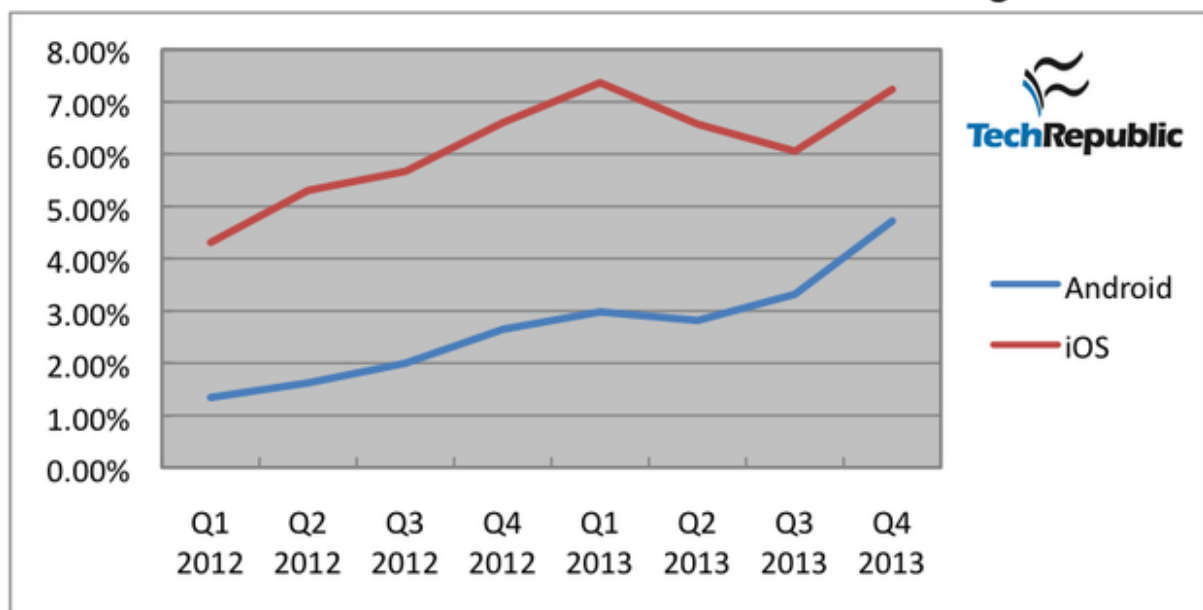
(Surer, 2014)

In terms of choosing the windows phone for the Application development the actual market size compared to IOS and Android must be taken in to huge consideration. Personally I think Windows have come a long way recently and their Azure Mobile Service is excellent however Android is where the market is and in my opinion should be prioritised for development with regard to reaching the largest audience.

IOS

IOS is the Mobile Operating System created, developed and offered by Apple on their iPhones. In order to develop IOS apps an environment of Apple devices are essential! A Mac computer, Xcode and iOS SDK is required for initial development to create any Applications to work the with IOS operating system. Apple's official site offers a lot of documentation to their Operating System and also provide tutorials to learn how to develop an App of your own. Having researched the various Tutorials they are very interesting and to give an honest assessment it did become a strong contender for development personally. Although there are double the amount of Android devices compared to IOS devices Apple have held their own on the market and the number of users with their phones is increases every year. It is worth noting despite half the devices being used compared to iPhone's the amount of web usage is far exceeded by iOS users compared to Android. This is a very important factor to what platform to choose for App development because with more active iOS users it could be opinionated that there is actually a bigger market pool of active iOS users.

OS market share based on total web usage



Source: NetMarketShare

(Forrest, 2014)

Potential Risks

There are definitely a number of potential risks that have been identified. The proposed idea will require the use of the Database, Web Service and the Android Application to perform the majority of Functionality so it is essential none of those elements experience any issues.

The most complex functionality will be fully Dynamic in that updates will be required from Websites in order to perform the algorithms for correct calculation of Ranking. The option for the user to execute Real Time updates could also propose many risks and again it is vital the coding is correct and the communication between all elements is correct for the Real Time update to be available at any time.

The Android Application will heavily Rely on the web service and an internet connection in general. Limited functionality being available could result in large limitations and should be addressed so a user could possibly be provided with an offline offering of data to be able to use the majority of the Apps features.

Although the permutations are quite complex the actual programming of these should be done efficiently and correctly to avoid any bugs that could enter the frame due to the coding not being done in the best manner possible.

Upon research of the actual operation of Android Applications memory management and the management of running processes is very important for the Application to work right and for the Phone to run the Application in conjunction with shared services/resources. These will definitely be identified throughout development and any potential issues that may arise will be actioned on immediately.

Security is a massive element to Development of any Application not only on Android devices. The majority of developed Android Applications will go on the Google Play store. It must be noted there have been breaches to Apps on there with Malware the main threat that these apps have been hit by. It is also important the application is developed to the latest in date features, coding and implementation as a whole. Should an app be developed with outdated resources it can cause a threat to the phone itself due to security updates not being applied to deal with outdated apps since. Perhaps a compliance policy could be introduced to the Application on release.

(Violino, 2013)

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