Gaelic Scores

An iOS application for real time Gaelic football scores
B.A.(Mod.) Business and Computing
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DECLARATION

I hereby declare that this project is entirely my work and that it has not been submitted as exercise for this or any other university

__________________________________________________________________________  __________
Name                                                                                                   Date
Acknowledgments

Firstly, I would like to thank Prof. Mary Sharp for her continued guidance and support over the duration for the project. Mary's passion for sport coupled with her knowledge within this field of study was invaluable to the project and myself.

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Finally, I'd like to dedicate this Project in memory of my grandfather who sadly passed away during the project. His inspiration and knowledge had been invaluable on the project and my life in general.
Abstract

This report aims to outline the approach taking to create an application capable of retrieving and updating Gaelic football scores. Whilst a similar application has already been released to the Apple App Store, this application promises to change the means for which Gaelic football fans all across the globe gain knowledge of live scores.

The report aims to give a strong outline into the Gaelic Scores applications development with this concrete foundation of an application being developed. The report also aims to convey to the reader the future for Gaelic Scores and a business plan is aimed to be implement. This plan illustrates to the reader where the value lies within in market by engaging in user interaction and obtaining data on the GAA fans that download the application.
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Ethical Approval Forms
Chapter 1 - Introduction

There's a major lack of mediums within the GAA (Gaelic Athletic Association) that display live scores of games throughout the country. With a possible of sixteen inter-county football games taking place over the duration of a weekend, only one of these games is generally televised at any given time and it is extremely difficult for GAA supporters to acknowledge how the games are progressing.

The GAA as an association, at the present time, is seeing a huge advancement in growth. More and more players are engaging in the sport at a global level with regulations in place that clubs have to play half home grown players and half Irish Diaspora. Broadcasting rights have now been sold to one of the most illustrious sports broadcasters in the world, Sky Sports. With this huge expansion that the GAA is engaging in at the present time, it is ever more evident that there is a huge need for data retrieval and manifestation. The association is no doubt growing at a remarkable pace and so is the value of the data in relation to the GAA fans.

1.1 Aims

The purpose of this project was to develop an application that incorporated a good knowledge of both disciplines of my chosen degree of study, Business and Computer Science. Before beginning development, the project promised to include a relevant marketing plan and to outline where the value lies in regards to the potential of the project.

In regards to the development of the application the overall aim was to develop a procedure of retrieving and updating scores and allowing users of the IOS application to at a glance to gain knowledge of the scores of Gaelic football matches around the country on a real time basis. The application will then act as a foundation for developing a user base of GAA fans all across the globe. This inflow of GAA fans will be what is considered as the Gaelic Scores product as there is a huge potential for data to be sourced from their usage of the application.

1.2 Motivations
The rapid growth of the Gaelic Athletic Association all across the globe coupled with the lack of mediums for gaining knowledge on game data was the inspiration behind the application. My passion for the game can also be considered a huge motivational factor for the project as I’m developing an application for a sport I truly love participating and engaging in.
Chapter 2 - Background

2.1 Personal Influence for project

Generations of my family have always been great advocates for the GAA and huge supporters of County Cavan GAA. My grandfather and my father are big inspirations to my brother and myself in a Gaelic footballing sense. I love playing for my home club in county Cavan and even managed to captain our u21 team in 2013. The club even managed to win a senior championship in 2011 and an u21 championship in 2012. The feeling of accomplishing something, which many have tried before, with your friends that you grew up with, is unparalleled.

My younger brother Killian is an idol of many young children around the county as he plays for the Cavan senior team and even managed to have the privilege of being nominated for an All Star in 2013. It is undeniable the influence my family had on me and my love for the game brought me to develop this application.

Sat in Breifne Park GAA grounds in County Cavan one afternoon as Cavan played Sligo, my friend had a Gaelic football bet placed and was contemplating what the scores were in the other matches. Apart from searching through tweets of each game he had placed there was no medium of obtaining the information at the game; this inspired me to develop an application that tackled this niche in the market. After giving the idea great thought and through some peer guidance, the realization that the GAA market is an extremely valuable one and the data on the GAA fans in general could be seen as a data gold mine.

2.2 GAA Background

2.2.1 Rules and outline

Gaelic Football is a field game that was developed as a distinct Irish game similar to the progression of Australian Rules football. Gaelic football is played on a pitch up to 145m long and 90m wide. The goalposts are the same shape as on a rugby pitch, with the crossbar lower than rugby one and slightly higher than soccer goals.

The ball used in Gaelic Football is spherical. It can be carried in the hand for a distance of up to four steps and can be kicked or "hand-passed" (a striking
motion with the hand or fist. To score, you must place the ball over the crossbar by foot or by hand for one point or under the crossbar and into the net by foot or the hand (with the exception of hand passing) for the equivalent of three points.

Each team consists of 15 players, 14 outfield players and 1 goalkeeper. Officials for a game comprise of a referee, two linesmen (to indicate when the ball leaves the field of play at the side and to mark ‘45’ free kicks) and four umpires (to signal scores, assist the referee in controlling the games, and to assist linesmen in positioning ’45’ frees).

Raising a green flag, which is placed to the left of the goal, signals a goal. Raising a white flag, placed to the right of goal, signals a point. The umpire raising his/her outside arm signals a ‘45’.

So what can be concluded is that the data than can be recorded on games is quite minimal. The two team names and the corresponding scores in the format of ‘Goals: Points’ i.e. 1:07 would indicate 1 goal and 7 points.

2.2.2 Popularity
Gaelic games furnished two of the top ten most watched events in Ireland in 2013, with Dublin's All-Ireland final victory against Mayo with 1,065,200 (RTE audience figures 2013) achieving the most watched sporting event in Ireland. The popularity of the sport is ever growing and the game is considered the mostly widely spread sport in the country. From inter-county battles to division 3 club relegation matches, the passion for the sport and the love of the game is always unprecedented. The fact that you are achieving something as a community and with friends and family you grew up with is what makes the game unique

2.2.3 Irish Diaspora
All across the globe, Gaelic Games is a continuously developing phenomenon. Countries such as USA, Australia, Belgium, Qatar, United Arab Emirates all have actively growing and competing clubs. The clubs are predominantly founded and developed by Irish diaspora. The Gaelic games are only going to expand more and more, with Irish people all across the globe spreading their love for the
game. In foreign countries, the GAA have regulations in place to ensure that there is half Irish diaspora on the team and half homegrown players. So teams all across the globe would have natives participating for the club. These regulations only make the association spread even more.

2.2.4 Sky Sports
As of March 2014, a total of 45 provincial and All-Ireland championship matches will be broadcast live on television annually for the next three years: a total of 31 games will be shown by RTÉ and 14 by Sky Sports. There have been many mixed views of this market entrance from Sky of GAA fans across the world. For the purpose of the project that is being developed, this can only be seen as a positive as the viewing capacity of the Gaelic games will increase immensely, and many new fans will be attracted to the sport.

2.3 Current Scoring Mediums
Currently there are a number of mediums that GAA fans across the globe can retrieve scores from. Teletext, Radio, TV, Websites and social media sites are all considered means of retrieving live game data

2.3.1 Teletext
RTE Teletext is quite a traditional way of retrieving GAA scores. Generations of families across Ireland, before broadband became as wide spread as it is today, checked Teletext for the scores on inter-county and club game. The scores are not on a real time basis and are completely impracticable for a fan who is attending a game, unless he/she were to phone a family member or friend at home to check the scores for them

2.3.2 Radio
Local radio stations across the country broadcast live analysis of inter-county games. The commentators usually switch from one game to another to get a broader analysis of how the games are going but usually focus in on one particular game. As a consequence of this, the scores cannot be delivered as frequently and consistently as possible. Many GAA fans can be seen at games
listening to a radio with their headphones trying to get a indication of how the other games are progressing

2.3.3 TV

TG4, RTE, Setanta Sports and now Sky Sports all hold rights to broadcast games. Usually a maximum of two games are broadcasted at any one time and a fan at home would only be obtaining the score from that individual game. Coupled with Teletext, the fan would be interrupted in watching the game to consistently check the scores from each of the other games in progress.

2.3.4 Websites

Some websites have begun to give live updates of the games. The websites are usually very practicable and can be accessed through a mobile browser. The websites are usually used for another line of business and not a lot emphasis would be on updating the scores consistently. The medium would be considered reliable when a fan is at a match and needs to access the scores through a mobile. Unfortunately the games are not updated at real time basis and not considered consistent

2.3.5 Social media websites

The Twitter application is probably the most favorable means of obtaining the scores. A considerable amount of County Board PRO's consistently tweet minute by minute updates. A user would be able to search individually for each game but this is not feasible if the user wants to check every game that is live and watch the game at the same time.

2.3.6 The future for mediums

As the technology industry continues to innovate and grow at a rapid pace, the mediums in which the GAA interact with have not grown in the same pace. Over the coming years, the mediums of interacting with the GAA will continue to grow in a process similar to figure 2.1 below
2.4 Current competitor

There is a competitor in the market already that has released an IOS application to the app store. The app primarily deals with club scores but has started to incorporate inter county scores also. The figure below illustrates the application ‘Club Scores’. The competitor ‘Club Scores’ chose to develop the application to give as much information as possible in each table. The competitor's application engages in what would be considered as ‘information overload’. There is a lot of unnecessary information highlighted in figure 2.2, such as ‘status’, ‘venue’, and ‘county’.
The application is quite dull also and engages in no user interaction, which is where Gaelic Scores plans to gain competitive advantage in.

2.5 Market Leader Inspiration

The inspiration behind the front-end design for the Gaelic Scores application came from the leader in the market of sports scores, livescores.com. As the name suggests, livescore.com displays scores of many live matches of numerous sports throughout the world. On most of the pages of livescore.com you’ll find advertisements and banner ads by sponsors. Livescore.com generates its revenues from these ads to cover the cost of maintaining the website and providing you the scores live and free of cost. Livescore.com has an estimated worth of $17,736,840.00 and have a daily income of around $16,423.00. Thus Livescore.com is considered one of the most inspiring entities that deal with sports scores. Livescores.com delivers the least amount of information possible (as illustrated in figure 2.3) but works in an extremely effective manner.
<table>
<thead>
<tr>
<th></th>
<th>Germany - 2. Bundesliga</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'</td>
<td>Aalen 0 - 0 FSV Frankfurt</td>
</tr>
<tr>
<td>6'</td>
<td>Cottbus 0 - 0 Dynamo Dresden</td>
</tr>
<tr>
<td>6'</td>
<td>Paderborn 0 - 0 Fortuna Dusseldorf</td>
</tr>
</tbody>
</table>

*Figure 2.3 – Livescore.com layout*
Chapter 3 - Data Retrieval and Storage

3.1 Problem overview

The highlighted question in relation the overall data retrieval and storage is "Where will the data be sourced from?" and if the data is trustworthy or not. Unfortunately Gaelic games have not progressed to the same level that soccer and other sports have in regards to game data. Major sports across the globe have independent companies who operate by watching the games live, updating the databases accordingly and selling off this raw data to websites, companies and broadcasters to display the data of the games.

The data of the scores in Gaelic Games at the present time can not be bought, the only way a company would consistently operate the databases in Gaelic games would be to have spectator at each of the games that are on going and have them report back to the database operators. This is obviously extremely impracticable for this project and an alternative option had to be sought after.

3.2 Twitter

One of the first sources fans use when looking to obtain scores, as highlighted in 2.3.5 is Twitter.com. The user would normally enter both team names into the search bar and search through the tweets to see what the scores are. County board PRO's from across the country are usually very consistent when it comes to tweeting the scores. Fans and spectators also engage regularly in tweeting how the games are progressing. Therefore there is an endless amount of data available in the 'Twitter-sphere' that can be analyzed and stored

3.2.1 Testing Twitter consistency

Testing was done for a single match and how consistent the updates commenced. Testing was done on the Twitter account '@DubMatchTracker'. In a 70-minute game between Dublin and Tyrone, '@DubMatchTracker' tweeted 48 times with updates on the match. Every tweet followed a template with the time, score and a small summary of the event in each tweet as highlighted in the figure
3.3 Trust Issues

Upon research of the GAA Twitter community, a conclusion was made that there are a number of highly followed Twitter accounts such as ‘DubMatchTracker’ that tweet consistently about games from their corresponding county. Individual fans also tweet updates regularly at games but unfortunately they tend not to follow a template and would be considered untrustworthy. The County board PRO’s from across the country all actively tweet updates on the game and would be considered the most trustworthy source of tweets.

Through research into how the GAA operates their social media platforms, a conclusion was made that the county Board PRO’s are under no obligation from the GAA headquarters to tweet about the games. The GAA is still an organization and most of the County Board members are volunteers, considering this not all County Board PRO’s actively tweet at games and might only give half time and full time updates.

3.4 Twitter Data Streaming

Following up from the decision to choose Twitter as the source of the data it was then necessary to develop a means of displaying this information so it will be unproblematic to update the scores in the database.

3.4.1 Twitter Widgets

Twitter allow for widgets to be created and to be used in a webpage. All that is needed is the ID code for the exact search query that was inputted. For the purpose of the gathering information about Gaelic football scores, all that is needed in a search query is the two county names. For instance, if Cavan were playing Monaghan, for the hour and a half that the game is on
going, the majority of tweets that will gathered with the search query “Cavan Monaghan” will be to do with the game.

3.4.2 Gaelic Scores Dashboard

Through the use of the widgets, a dashboard was created that incorporates all the games that are on going at any one time. On average, there are 4 Gaelic football games that are live at any one time, as the games are well spread out over the weekend. The widgets to do with these games are developed and included into the ‘Scores Dashboard’. Figure 3.2 displays an example of the dashboard with four of the widgets of particular games incorporated into the HTML page.

![Figure 3.2 An Example of the Twitter widget HTML dashboard](image)

3.5 Database Structure

The structure of the database had to be clear and precise from the outset. The database itself was very simplistic in design. It consists of three main attributes, ‘ID’, ‘Team name’ and ‘Score’. The primary key is set as the county’s ‘ID’. The ‘ID’ was use to generate each of the different MySQL queries that were developed to fetch and update the database.

Attributes can be added to the database if necessary. A major attribute that I contemplated adding was the ‘minutes played’ attribute. On average, most of the games are played at the same time with hurling matches being played at a separate time in some occasions. Therefore, it might be necessary to provide the time the game started at and when all the games are complete within front end display of the application. As the nature of the front-end design is very easily updatable, the time of each game can be easily placed above the game itself.
When the game is complete the time of the game can be changed to ‘FT’ indicating that the score is a result.

3.6 Database Tuples
The database was filled with 32 tuples representing each county in Ireland excluding Kilkenny, as they don’t participate in the football, but including London as they travel over for their games. Each county was given with a unique ID, a unique team name and a score of 0-00. A representation of the tuples is shown in appendix 1.

3.7 PHP form for updating database
The PHP form for updating the database is highlight in appendix 2. The form firstly communicates and connects with the database and then inputs the data that was entered into the form. For the purpose of ease of access, a form was created for each of the tuples within the database i.e. 32 tuples representing each of the counties. These tuples are generated within a HTML page and is used in correlation with the dashboard mentioned previously when updating the scores throughout a match.

3.8 PHP request for fetching scores
As the data is being updated, there is a need for the data to be pulled from the database and displayed on a HTML page. A corresponding PHP/MySql query was thus created to display the scores on the HTML Page (see appendix 3). The PHP firstly connects/communicates with the database and then pulls the data using the MySQL query highlighted in appendix 3.

3.9 Future work with backend
3.9.1 Ruby on Rails
Having to manually create all these different forms and queries from scratch was quite a tedious task. As PHP was the language that was widely used and is the foundation for connecting with databases, it was the chosen option. If a repeat of the project begun, the use of the open source web application framework ‘Ruby on Rails’ would be substituted for PHP. PHP is gradually becoming outdated and
Ruby on Rails, which uses the Ruby programming language, allows the user to effortlessly create pages and applications that gather information from the web server, talk to or query the database, and render templates out of the box. Any further developments within the backend will use the Ruby on Rails framework for development.

3.9.2 Potential automatically updating database

Upon developing a system to updating the data into the database, an alternative route had been in the process of development. Through the use of iPython, a constantly updating CSV file was downloaded directly from Twitter. The file downloads just the string of the tweets and gets rid of the other tweet attributes. The tweets were downloaded upon the basis of the search query, for instance within iPython, the parameters “Dublin Kerry” would be the search query for tweets to do with a game between Dublin and Kerry.

The file then gets parsed through a Java program. The program simply separates each word of the string into an arraylist and iterates through the string until it finds both counties name and their corresponding scores. Through a brief amount of testing, the result from the program in figure 3.3 incorporating the tweet “Half-time, Dublin 1-10 Cavan 1-13” can be seen in figure 3.4

```java
for(String tweet : "Half-time, Dublin 1-10 Cavan 1-13".split(" ") { 
    TweetArray.get(i).add(tweet);
}

for (int i = 0; i < TweetArrayList.size(); i++){
    if (TweetArrayList.get(i).equals(team1)){
        i++;
        teamcorel = TweetArrayList.get(i);
        System.out.println("Dublin's score is " + TweetArrayList.get(i));
    }

    if (TweetArrayList.get(i).equals(team2)){
        i++;
        teamcore2 = TweetArrayList.get(i);
        System.out.println("Cavan's score is " + TweetArrayList.get(i));
    }
}
```

3.3 Potential program for manually updating the database
The values for ‘teamscore1’ and ‘teamscore2’ would then be added into the database with their corresponding values.

There are numerous challenges to do with the program that I decided upon using the manual input method instead. There are a lot couple of exceptions that deal with integers, which are needed in order to find the scores within the tweet. Unfortunately the tweets come in string format and we need to find out if they are correct mathematically. An example of some of the exceptions include:

- Is the score exactly one point greater than the last?
- Is the score exactly one goal greater than the last?
- Does the score take the format of a normal GAA score i.e. 0-00?

If the tweets took the same format and were from a trustworthy source then there fewer problems with parsing the data. Unfortunately, as highlighted in 3.3, there are a lot of trust and consistency issues in regards to the tweets. The format of the tweet is essential for developing on from this program. The scores have to be located after the name of the county and duplicate county names will also cause errors. Considering, for instance if 4 games were live, 4 programs will need to initialized and modified to suit the games. This is quite a tedious task. Manual updating the data is not much of a hassle in regards to effort but also helps keep the application error free.
Chapter 4 - Design

4.1 Design objectives

The front-end design of the application had objectives in relation to the overall aesthetics of the application, the information that is provided to the user and the speed at which the data can be refreshed.

- The overall aesthetics of the application needs to be unique and stand out in comparison to the competitor's simplistic table view to give the application the USP to gain competitive advantage
- The amount of information that is stored on single page needs to be maximized, having as many games as possible conveyed to the user.
- The application needs to be easily refreshed so that the user can receive minute-by-minute updates.

4.2 UiWebView

The front-end design of the application will be displayed onto an IOS application. The app needs to provide as much information as possible about the games. In order to gain a unique selling point (USP) the app needs to be as aesthetically pleasing as possible. The final major objective outline in 4.1 is that the application is easily updatable.

   Xcode was the software that was utilized to develop the application using objective C. In order to best achieve the objectives outlined above, the application was built in a UiWebView within Xcode. Using the web view was seen as the most suitable way of developing the app in order to achieve the objectives outlined above. The web view is first generated in the applications main_iphone_storyboard. After the application was generated and the size of the web view was configured to the size of the iPhone screen, the web view was then initialized in the FYPviewController.h as illustrated in figure 4.1.

   @property (nonatomic, retain) IBOutlet UIWebView* appview;

   Figure 4.1 – Initializing the web view
A method for linking the web page to the web view was then created in the FYPviewController.m section of the project. The web view can load whatever URL string is entered inside the parenthesis. For the purpose of generating a webpage into the application, a domain name and web-hosting package was purchased at the URL www.gaelicscores.com. The code for initializing the web page into the web view can be seen in figure 4.2

![Code snippet for initializing the web page into the web view](image)

*Figure 4.2 Initializing the web page into the web view*

There are many purposes of incorporating the web view directly into the app.

- The web view can take advantage of HTML, CSS and JavaScript capabilities in order to give the application a strong graphical performance.
- The web view allows for the application to be updated easily. Having the front end developed so that it is easily updated is fundamental for delivering real-time scores. Firstly the scores change every couple of seconds during the broadcast of a game and also the structure of the games will have to be changed weekly within the HTML page. The web view allows for flawless updating of information.

### 4.3 Activity Indicator

As the application will be run off the devices internet connection, whether it is Wi-Fi or 3g, there is a need for an activity indicator to let the user know if the web page is loading or not. The activity indicator was initialized in the FYPviewController.h file as seen in figure 4.3.
Two methods were then developed, communicating with the web view, to begin and end the activity indicator as seen in figure 4.4.

```swift
@property (weak, nonatomic) IBOutlet UIActivityIndicatorViewView *activityIndicator;

- (void)webViewDidStartLoad:(UIWebView *)webView
{   
    _activityIndicator startAnimating;
}

- (void)webViewDidFinishLoad:(UIWebView *)webView
{   
    _activityIndicator stopAnimating;
    _activityIndicator.hidden = TRUE;
}
```

The activity indicator corresponds with the overall theme of the application and is a animated, blue, circular shaped icon. The activity indicator can be viewed in figure 4.5.
4.4 Design Inspiration

As described above, the UIWebView is sourced directly from a web page. This allowed for numerous opportunities whilst designing the application. The objectives whilst designing the aesthetics of the application was to give as much information as possible in a single 3.5/4 inch IOS page in a graphically pleasing manner.

The inspiration behind the front-end design for the Gaelic Scores application came from the leader in the market of sports scores, livescores.com (as mentioned in section 2.5). As the name suggests, livescore.com is all about scores of all the matches of many sports happenings in the world. On most of the pages of livescore.com you’ll find advertisements and banner ads by sponsors. Livescore.com generates its revenues from these ads to cover the cost of maintaining the website and providing you the scores live and free of cost. Livescore.com has an estimated worth of $17,736,840.00 and have a daily income of around $16,423.00. Thus Livescore.com is considered one of the most inspiring entities that deal with sports scores. Livescore.com deliver the least
amount of information possible (figure 4.5) but works in an extremely effective manner.

![Figure 4.5 - Livescore.com inspiration for design](image)

Inspiring from the Livescore.com website and application, the project came to the conclusion that the most effective way of delivering the scoring information is to have as little detail as possible. Instead have exactly what the user is looking for, the score. Therefore the information that was needed within the front end was developed and can be seen in figure 4.6.

![Figure 4.6 - Sample information layout](image)

4.5 Fluid UI Prototype

The front-end design took an iterative approach to development. Through the use of information outlined in figure 4.6 above, the first stage of prototype development begun. Through the use of an online prototype development tool,
Fluid UI, a prototype was developed that includes exactly the information that is illustrated in figure 4.6 above. The outlined prototype is illustrated in figure 4.7

![Fluid UI prototype](image)

*Figure 4.7 – Fluid UI design prototype*

### 4.6 Problematic Table View

When contemplating what would be the most effective way of portraying scores on a HTML page, a table view was the most promising option. After creating a HTML table similar to that in the Fluid UI prototype in figure 4.7 there was a lot of problems with how the UiWebview displays the information. Unfortunately Xcode does not support table views directly into the application without messing up the overall structure of the table. Therefore an alternative route had to be sought after. Aligning the data on the HTML page and testing the web application with the IOS Simulator until the data fitted nicely into the page was the solution.
The alignment of the data was quite a tedious task in effect. It involved numerous iterations through different solutions until the data fitted perfectly into the UiWebview. The concluding HTML text is illustrated in figure 4.8 below.

4.7 First Working Prototype

The first working prototype was a major milestone along the projects timeline. The first working prototype was developed in a simple green and white color scheme incorporating the aligned text described above and can be viewed figure 4.9.

Figure 4.8 HTML for aligning information

Figure 4.9 First working prototype – IOS simulator
4.6.1 Evaluation
At this point in the project, the prototype didn’t have the USP that the project strived towards. The green text offset against the white background was quite bland in an aesthetics point of view.

4.7 Color Themes and Live Graphic
The graphical performance of the initial design did not give the application the USP it needed and thus was redeveloped in order to take into account these considerations. The introduction of the ‘Live Pulse Graphic’ was then incorporated into the web page and the theme changed from green and white to a contrasting and simplistic Navy and light blue.

4.7.1 The ‘Live Pulse Graphic’
The live pulse graphic is the most graphically pleasing aspect of the application (figure 4.10). Whilst indicating that the games are live, it also engages the user into an interactive experience. The graphic was developed using JavaScript loader dots. Inspiration for the graphic came from the open source website codepen.com and the use of their 'Pubic Pens'.

4.7.2 The navy and blue color scheme
The color scheme apart from having lustrous design also had a purpose behind it, acknowledging that the largest target audience of any county in Ireland was Dublin, and ‘The Dubs’ are renowned for their navy and light blue color scheme.

4.8 Acceptance to the App Store
The Apple App Store has strict regulations against UIWebviews. If a user submits an application that is simply a web page that can just as easily be accessed through Safari then the application will be rejected. To conquer this problem, the
project had to incorporate some added features that will make the application somewhat half a native IOS and half a web application.

4.9 ‘Provinces Section’

With the restrictions outlined in 4.8 in mind, a feature was added that would not only surpass the restrictions but also help market the application to a broader audience. After gaining ethical approval from the Trinity College Dublin O’Reilly Institute, three interviews were commenced with some of the top inter-county footballers in the country.

1. Colin Walshe is senior footballer for Monaghan. Colin achieved an all star in 2013 after lifting the Anglo Celt Ulster Championship Cup
2. Matty Donnelly is a current Tyrone senior player. Matty achieved an Ulster All Star in 2013 for his performance in the Ulster Championship.
3. Killian Clarke is a Cavan Senior and U21 player. Killian also achieved an Ulster All Star in 2013 for his performances in the Ulster Championship and was nominated for an All Star also.

The interviewed incorporated a section that is entitled “30 Seconds with...”. This section allows for users to gain inside knowledge into some of their idols in the GAA community and also gives them knowledge of their county’s history. Figure 4.13 illustrates the interview with Matty Donnelly along with figure 4.12 and figure which demonstrate the process to navigating through the different provinces and counties.
Figure 4.11 – Provinces page

Figure 4.12 – Counties page

Figure 4.13 – History and interview
Chapter 5 - Marketing Plan

5.1 Marketing Objective

The marketing plan promises to plan to build a strong consumer perception of the application, create consumer awareness of the application from an early stage and to highlight Gaelic Scores target market.

5.2 Target Market

‘Gaelic Scores’ intend on targeting GAA fans across the globe. With an ever-growing variety of fans engaging with the sport, it’s important to count for different types of personas.

5.2.1 Personas Introduction

In order for an individual to get a broad knowledge of the target audience, it is essential to first look at some of the personas that would find great use for the application.

5.2.2 Brian – A youthful player

Brian is a 20-year-old student that lives in Dublin. He is studying Sports Performance in Dublin Institute of Technology. Brian owns an iPhone 4S. Brian is an avid fan of GAA. He plays for his native County Cavan and he trains an Under 12’s team within his home football club. Occasionally, Brian would also be fond of placing bets on GAA matches at the weekend. A typical bet that Brian would place would comprise of six teams to win from a €5 accumulative. Brian finds it increasingly difficult to keep track of the score of each match and therefore is oblivious to how his bet is progressing. At the moment, Brian has to search through six different search queries on Twitter to figure out how his bet is commencing. It would be beneficial to Brian if there was one site that he could rely on to tell him to results of the matches he is interested in.

5.2.3 Bridget – A proud Grandmother

Bridget is a 65-year-old mother of five from County Monaghan. She has been retired for the last five years and looks after her ill husband Joseph.
She is the owner of an iPhone 5 as her network provider upgraded her phone at the end of last year. Even though Bridget would be considered technologically illiterate, Bridget’s grandson Eoin thought her everything there is to know about iPhone’s and frequently updates new applications onto the phone that Bridget. Bridget’s grandson Eoin plays for Monaghan and she is a keen supporter of Monaghan’s progress and how they are doing during their games. The only means of which Bridget checks how the games are progressing is by listening to a local radio station. The radio station switch through a number of different games and Bridget can become frustrated when she is unable to find the result of the match she is interested in.

5.3.4 Sean – GAA web forum fanatic

Sean is a 35-year-old male building contractor. He is a GAA fanatic. Anything to do with the GAA and Sean is involved. He was a player for some years and now manages his local team. Sean actively gets involved in online GAA forums to do with his county and the neighboring counties. Sean is a huge fan of Donegal GAA and never misses a match. He sometimes gets annoyed that he has no awareness of a means of checking the scores of other games across the division and finds this quite a burden within the GAA.

5.3 Consumer Awareness

In order for the application to succeed at first, consumers have to be come aware that the application is available to download and use. To overcome this problem, a website was developed and deployed to give the possible target audience a strong understanding of the application.

5.3.1 Website Development

The domain name www.gaelicscores.com was obtained for the purpose of the project. The websites index displays information on the application itself. Through the use of some JavaScript capabilities, a smooth parallax scrolling
The parallax scrolling technique was also inspired from open source front end website codepen.com and their numerous ‘Public Pens’ to do with the newest craze in front end design, the parallax scrolling technique. The application illustrates two screenshots of the application, incorporating the different functionalities (figure 5.1). The website gives a brief outline to what the application is about.

![Figure 5.1 - gaelicscores.com Website](image)

**5.3.2 Advantages of Gaelic Scores Website**

Online forms of media allow for a new world of communication. Marketing messages are now being portrayed via computer, mobile and tablet screens, rather than traditional, offline methods (Michaelidou, Siamagka and Christodoulides, 2011). Websites are now becoming the most popular sources for information. Through the creation of a website, it makes it easier for this Gaelic Scores application to communicate the brand to the public in order to create a stronger relationship with the audience. Michaelidou, Siamagka and Christodoulides (2011) cite many other advantages when it comes to marketing online:

- Branding and marketing on the internet allows for the ability to convey brand equity.
- The internet allows for information to be available about the brand, connect with members of the audience and create a community.
• In completion of all of the above, digital media can develop brand value through the availability of information about the brand, conversations with their customers, and creation of awareness about the brand.
• Relationships between consumers and brands are also available to be made online.
• Barriers to entry are raised leading to increased demand on certain products or services.

These advantages are only the tip of the iceberg. The world wide web is a global community in which brands are free to devise innovative ways to communicate their brand message. The web decreases the limitations of demographics, especially geographic location which was once a tough task for offline brands to overcome (Michaelidou, Siamagka and Christodoulides, 2011). This allows brands to gain access to the widest audience possible. In this case, Gaelic Scores can be visited from all parts of the world, aiding the diaspora population interested in their native sport.

5.4 Increasing Awareness
After a quick Google search for ‘live Gaelic scores’, a user would become aware that gaelicscores.com does not feature anywhere within the top hits. In order to overcome this challenge a Google AdWord plan was developed

5.4.1 Google AdWords Plan
In order to gain a wider audience and increase the awareness of gaelicscores.com, implementation of the Google AdWords tool is required. Google is the most utilized search engine in the world and buying into Google AdWords allows for sponsored advertisements through this medium. This tool helps to increase traffic to the chosen website, thus increasing brand awareness. The advantages of online brand awareness outlined previously in 4.3.2 by Michaelidou, Siamagka and Christodoulides (2011).

Google AdWords offer a wide range of campaigns that websites can choose from. Each campaign fits with different types of industries, depending on how they want to be portrayed on the Google website. However, not all campaigns are applicable to every website. For example, there are options to
emphasis geographic location with the advertisement of Google maps. In the case for gaelicscores.com, emphasizing the geographic location would bare no relevance to the site and would be least beneficial as there are no offices or sites dedicated to this website. It is also imperative to be particular with what AdWord’s strategy Gaelic Scores uses due to financial aspects. Investing in an ad of little relevance to Gaelic Scores campaign can lead to unnecessary costs spent on an advertisement that is least beneficial to the website.

Gaelic Scores would invest in the selected, appropriate advertising campaigns. Keywords would be added to each campaign based on Google AdWords Keywords tool. A selected grouping of words would be carefully chosen. Finance would be an influencing factor here as certain words may cost more than others. Cost per click (CPC) has a further effect on the financial aspects. At this point, it is best to think like a consumer and how they would effectively search for the website. The words that they would use would then be chosen as possible Keywords to coincide with the overall campaign. Examples of words that could be chosen are “Live Gaelic Scores”, “Gaelic Scores” or “Gaelic Results”. Negative Keywords would also be taken into consideration upon implementation. Campaign’s that may go against the brand of Gaelic Scores would consist of other competing brands that offer a similar service and those that offer results of other sports.

5.4.1.1 Tools Offered: Basic Search Engine Tool

The most important campaign Gaelic Scores must adopt is a Basic Search Engine campaign. This involves the presence of Gaelic Scores on the Google results page. At the moment, the page is practically non-existent on Google. Consumer’s searching for real-time Gaelic scores will generally click the first available option that closely matches their search intentions. Consumers are highly unlikely to search through pages of results that Google have to offer and this does not bode well with Gaelic Scores brand image. If this tool is implemented, it will then boost the search engine presence of the website. Gaelic Scores will be moved up through the pages, potentially taking the top spot of the chosen search. The footfall will then increase thus boosting the presence of the website.
5.4.1.2 Brand Campaign

In addition to the implementation of the Search Engine Tool, depending on this success, a second AdWord campaign could be put into action. A brand campaign allows for featured advertisements to be placed alongside generalized searches in the form of an ad. The advertisement generally features three to four lines of information concluding with the URL link to the official website. The title consists of 25 characters with the following taglines allowing for 35 characters. The sample AdGroup for this campaign would evolve the use of the words "Live Gaelic Scores". Upon writing the advertisement, it would be wise to include a call to action. Therefore, asking the consumer to visit the website gets them involved in the process. Telling them to download the app gives them something to do in relation to the brand. There is potential for an introductory question could be used to catch the attention of online users. As long as it fits with ethical requirements stated by Google and it remains within the character count, then the ad should be permitted to run. An AdCopy example for Gaelic Scores is illustrated in figure 5.2

![Gaelic Scores AdCopy Example](image)

5.4.1.3 Display Campaign

A third and final option for gaelicscores.com to potentially adopt is the idea of a display campaign. The intentions of this campaign are to increase consumer awareness and interest of the brand as they search. This display ad
will appear on similar sites and will therefore catch the eye of those already seeking a website that produces live scores. This campaign is very much like the Brand Campaign, with the only difference being the placing of the ads. Display ads may attract more attention as it features on similar websites instead of the search engine. Different language may be used depending on the placing of these ads. The AdGroup and AdCopy for this campaign would be similar to that of the Brand Campaign.

5.4.1.4 AdWords Campaign Conclusion

These plans would only be implemented based on financial aspects affecting the website. If the advertisements are amounting to be an unnecessary expense, then the entire campaign must be revised. If gaelicscores.com were to choose one, the Basic Search Engine campaign would appear to be the best campaign to run. Other campaigns available are effective and would increases brand awareness, however, if footfall is only slightly increasing over certain campaigns then it would be more beneficial for gaelicscores.com to dismantle those unsuccessful campaigns and focus on others that may be of more benefit to the company overall.

5.4.2 Engaging in Social Media

Engaging in social media in today day and age is essential for creating consumer awareness. The twitter account @gaelicscores has already been obtained. Creating a strong base of followers on Twitter and Facebook will be essential. Also having the users who participate in the “30 Seconds with...” tweet that they participated in the interview will also create a strong consumer awareness as these players are engaging with thousands upon thousands of GAA fans.

5.5 Consumer Perception

What the Gaelic Scores application and website plan to perceive to the customer is that the Gaelic Scores is a new sleek, informative and engaging application. The
style of the application and website is lustrous and sophisticated. A user will no doubt warm to an application that engages in a smooth overall design. To continue on from sophisticated and informative representation of the application and website, a logo was developed within Photoshop using the IOS icon framework.

5.6 Branding & Logo

Luckily enough for the project, the domain name gaelicscores.com was available to purchase and use. This domain name is the same as the application itself and users will have no problem differentiating between the two.

An icon was developed for the homepage of the IOS iPhone screen. The purpose of the icon was to give the users a clear description of what the application entails. The icon also had to be graphically pleasing and simplistic, keeping with the objectives of consumer perception of the application. Using an IOS icon template within Photoshop, an icon was developed with a Gaelic football, with the applications name across the front of the ball, lying on a bed of grass. The icon as seen in figure 5.3, has a faded navy to light blue background that allows the icon to keep with the color scheme of the application.

![Figure 5.3 – Development of IOS Icon](image)

Continuing on from the icon, a splash screen/launch screen was developed for when the application is loading up. As seen in the figure 5.4 below, the splash
screen continues on from the icon development and gives the application a non-interrupting feel whilst opening and loading the application.

![Gaelic Scores](image)

Figure 5.4 – Splash screen

5.7 Use of ‘Provinces’ Section

The use of the provinces section highlighted 4.9 was to help the application be accepted into the Apple App store. However, the provinces section is also used as a strong tool for tapping into a broader target market. Children and teens all idolize their GAA heroes. As many teenagers have IOS phones, they have the ability to gain information of boots their favorite player wears, to who is the biggest joker within the users favorite county.
Chapter 6 - Business Plan and future value

6.1 Introduction

"Whatever you build, it's about passion, and less about money. Your goals should be about changing the world, or making the world a better place"

Guy Kawasaki

The focus of this project was to create the concrete foundation for an application that every GAA fan will want to use. As the application develops upon release and more users begin to interact with the application, this will give Gaelic Scores a strong base of users. Whilst contemplating means of creating revenue for the application, one will think of incorporating advertisements and other means of revenue that will only hinder the user experience. The project plans on thinking within the ‘Bigger Picture’ and tapping into an ever-growing data gold mine in relation to GAA fans.

When thinking of the future in an innovation aspect, an individual will think of 'Big Data' and it is difficult not to be mesmerized by its potential. Board members, business executives, HR leads and marketing departments are spoiled for choice with the deluge of data now available. In regards to GAA fans, questions such as “Who their favorite team is?”,” Who their favorite player is?” “What is their favorite type of football boot?” and “What information do they look for within a game?” can all be seen as advantageous for marketers and investors. These are all potential questions that can be identified, protected, analyzed and interpreted within the Gaelic Scores application.

For the mining of data to function properly, the application must become as interactive as possible. The goal is to make the users want to return to the application and interact and not just to view the data of the scores. The ideas and possible functionalities behind this chapter will be later discussed in detail in Chapter 7 of the report ‘Future Development’.

6.2 The bigger picture
Gaelic Scores at the moment deals with inter-county scores across the country. What Gaelic Scores aspires to achieve is an application that will deliver scores from any GAA match that is on going across the world. As this would seem a difficult goal to aspire to, it is certainly an achievable one. The main challenge comes down to the collection of data and if the Twitter scores becomes unreliable and inconsistent.

6.3 What happens if the data disappears?

It is essential to create an alternate means of updating the data or as what could be described as a ‘Plan B’. As mentioned in the introduction in 4.1, the application aspires to become as interactive as possible. One main interactive goal of the Gaelic Scores application is to develop a means of user inputted data. There are a lot of challenges that need to be overcome in order for the user-inputted data to work. For instance;

- Is the data reliable?
- What will make the input of data consistent?
- What reward does the user who input the data get from it?

The objective is to develop a community of users that when they input the data they are rewarded, by a ranking system, for the reliability and consistency of their data.

6.4 Yelps Similar Business model

A similar case study is that off the local business rating goliaths ‘Yelp’. Yelp is a multinational corporation headquartered in San Francisco, California, that operates an "online urban guide" and business review site. The local ads business currently accounts for over 75% of Yelp’s stock value and is its biggest revenue source (Forbes, 2014). A big chunk of local revenue also comes from Enhanced Profiles, to which a business can upgrade to get a host of special tools and features, including unlimited photos, removal of competitors’ ads from your page, and a “Call to Action” button that allows customers to make reservations or print coupons on the spot. An enhanced profile is a feature that could be incorporated into the long-term goals of the Gaelic Scores application.
Clubs and Counties could possibly pay a fee for an enhanced profile in which they have can give a brief history of their club, introduce their hall of fame, give directions to their home grounds and possible supply a link to sell their lotto tickets (the major fundraising tool for clubs in Ireland) online through the application.

6.5 Gaelic Scores product value
As unethical as it may sound, if a customer is getting a product for free then they are the product. In the case of the Gaelic Scores application, the GAA fans are the product. There is a potential for very valuable data to be collected from GAA fans across the globe.

The data can be identified, protected, analyzed and interpreted within the Gaelic Scores application. This data would be very valuable for many different types of individuals and entities.
Chapter 7 - Future Development

7.1 Introduction

Before the application is packaged and released to the market, there are a number of features that Gaelic Scores plan to implement. The product at the moment is at a beta stage, and the application has a strong foundation to work off. In order for Gaelic Scores to achieve the goals that will be outlined in Chapter 6 ‘The Business Plan & Future Value’, a number of ideas and frameworks plan to be added to the application.

7.2 Push Notification

There is currently no better way to reach a target audience with the exact message and direction you'd like to take them, which is why push has become the next frontier of marketing. Most application owners determine an app’s success by setting the bar with download numbers. While that's a good indicator of an app's initial adoption, download numbers naturally decline a month or two after the app’s release and this will be the case for Gaelic Scores application. It becomes more important to focus on keeping the user-base Gaelic Scores has built engaged. It’s hard to deny the strength of push notifications in this regard, as the application will show increasing user engagement as a result of push notification efforts.

The idea for the Gaelic Scores push notification is that a user gets notifications of how their favorite team are fairing in their game at half time and at full time. When a user initially downloads the application, they are prompted to create an account and give information to do with their location, age, favorite team etc. Using the favorite team section of the form, the push notifications will be developed and sent out to the user. The information that the user initially inputs will be extremely important to the business goals and the value of this data will be later discussed in the Business plan.

7.3 Power of Media
It is undeniable that as we enter the new age of technology and innovation, the advantages of multimedia far surpass information-based models. Users find far more enjoyment out of videos, photographs and recordings. The plan for Gaelic Scores is to implement media based technology into the application. The media plans to be user inputted by someone who is attending the match. For instance, if a user records a brilliant goal that a player has scored, other users can view this goal within the application and give it a ranking. A thread within the homepage could then be developed along the lines of a ‘Top 5 club goals of the week’ and give the users who uploaded the goals an incentive to be within this top bracket of goals.

7.4 Making the application interactive

The application aspires to be as interactive as possible. User interaction is what will drive the overall value of the application. There are endless opportunities in regards to user interaction. One of the main purposes of user interaction is to collect the data on the GAA fans. Functionalities will be developed in order for the users to develop this data, such as opinion polls/quizzes and match day feature.

7.4.1 Match Day features

The match day feature plans to incorporate information to do with big match days in some of the country top grounds and venues. Users can realize where they heavy traffic is flowing from, they will be able to find a friend or colleague within the stand using the friend finder and gain information on the price of entry and meeting points. This feature is quite ambitious but unprecedented.

7.4.2 Track the Score

A track the score feature can be added to the application so that a user can keep a track of the scores of the game. This features promises to have interactive buttons for goals, wides, points, red cards, black cards etc. This feature will not only aid the user in keeping track of the game but will help give Gaelic Scores a endless amount of potential in regards to game data.
7.5 The ‘Think Big’ Suggested Framework

As the user base has been developed from the applications beta that has been already created, a ‘Think Big’ suggested framework has been developed in order to include the ideas in chapter 6 with the inclusion of the future developments. When asked to ‘Think Big’ in a Gaelic scores context in comparison to the application that has already been developed, developing scores for every single game that is on going on a global stage is as big as it gets. The index of the application will have be completely remodeled to include the scores of all the different club games that are on going across the globe. For instance;

- **Intercounty**
  1. Division 1
  2. Division 2
  3. Division 3

- **Clubs**
  1. Antrim
     a. St Paul
     b. St Patricks
  2. Armagh

- **Global**
  1. Australia
  2. New York
  3. Qatar
  4. San Francisco

The user navigates to the match they want to either view or make an input. The page includes the score that is being updated by other users at the match. The user could be a club PRO or just a fan that will get the satisfaction of achieving a higher score for their input. The page is also filled with media from the match. The media can be videos of a certain score or team pictures for example. As emphasized in 5.2.2, users are moving on from information base
models and are more intrigued by the power of media i.e. pictures, video clips and recordings. The use of media allows for endless amounts of possibilities in regards to interaction with the user. A comments section underneath the game discussing the match, rating the referee, a top 5 ‘Points of the week’ from user inputs, and a live commentary on inter-county matches from some of the top commentators in the country.

**Conclusion**

The framework for a solid application that displays live Gaelic football scores was a resounding success. The application should be released by June just before the All Ireland Championship begins. Through the use of the plan outlined in Chapter 5, Gaelic Scores promises to create consumer awareness and ultimately help build a strong user base.

This user base that Gaelic Scores promises to build up, the application will then prosper through the use of the features and ideas outlined in Chapter 6 & 7. The business value will ultimately be created as the user interaction allows for very valuable data to be collected and marketed.
Appendices

Appendix 1 – Tuples within database

```
SELECT * FROM scores LIMIT 0, 32
```
Appendix 2 – PHP form for updating the database

New picture needed with the query inside it

```html
<html>
<head>
    <style type="text/css">
        .error {color: #FF0000;}
    </style>

    <script>
        function validateForm()
        {
            var score = document.forms["newPform"]["textscore"].value;

            if (pName==null || pName=="")
            {
                alert("You must provide both a product name and price");
                return false;
            }
        }
    </script>

</head>

<body>

<p><span class="error">* required field.</span></p>

<form method="post" action="newscore.php" name = newPform onsubmit = "return validateForm()">
    Antrim Score: <input type="text" name="textscore">
    <span class="error"></span>
    <br><br>

    <input type="submit">
    <input type="reset">
</form>

</body>

</html>
```
Appendix 3 – PHP form for retrieving the data

```php
<?php

// connect to the database
mysql_connect("localhost", "lee", "****")
or die ('Cannot connect to MySQL: ' . mysql_error());

mysql_select_db("countyscores")
or die ('Cannot connect to the database: ' . mysql_error());

// query
$query = mysql_query("select county, score from scores where id ='1'")
or die ('Query is invalid: ' . mysql_error());

// write the results
while ($row = mysql_fetch_array($query)) {
    echo $row['score'] . ",
";
}

?>
```
References


LEAD RESEARCHERS: Lee Clarke

BACKGROUND OF RESEARCH: Researching a Live Gaelic Scores application that computes scores on GAA matches throughout the country.

PROCEDURES OF THIS STUDY: My brother Killian will test the application at home. This will include looking at the application whilst it is being updated, a photograph of him holding the app and a written review of the app which will just entail if the app worked or not. A 5 question interview with players that he plays with which will be used as add on information within the app. Including: Inspiration; Boots worn; Favourite win; Toughest Opponent; Funniest teammate

PUBLICATION: Business and Computer Science Final Year Project.

Individual results will be aggregated anonymously and research reported on aggregate results.

DECLARATION:

- I am 18 years or older and am competent to provide consent.
- I have read, or had read to me, a document providing information about this research and this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.
- I agree that my data is used for scientific purposes and I have no objection that my data is published in scientific publications in a way that does not reveal my identity.
- I understand that if I make illicit activities known, these will be reported to appropriate authorities.
- I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights.
- I understand that I may refuse to answer any question and that I may withdraw at any time without penalty.
- I understand that my participation is fully anonymous and that no personal details about me will be recorded.
- I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.
- I have received a copy of this agreement.

PARTICIPANT’S NAME: Killian Clarke

PARTICIPANT’S SIGNATURE:

Date: 26th March 2014

Statement of investigator’s responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHERS CONTACT DETAILS: Lee Clarke; 0860618445; clarkele@tcd.ie

INVESTIGATOR’S SIGNATURE: Lee Clarke

Date: 26th March 2014
LEAD RESEARCHERS: Lee Clarke

BACKGROUND OF RESEARCH: Researching a Live Gaelic Scores application that computes scores on GAA matches throughout the country.

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• I agree that my data is used for scientific purposes and I have no objection that my data is published in scientific publications in a way that does not reveal my identity.
• I understand that if I make illicit activities known, these will be reported to appropriate authorities.
• I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights.
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• I understand that my participation is fully anonymous and that no personal details about me will be recorded.
• I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.
• I have received a copy of this agreement.

PARTICIPANT’S NAME: Colin Walshe

PARTICIPANT’S SIGNATURE:

Date: 26th March 2014

Statement of investigator’s responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHERS CONTACT DETAILS: Lee Clarke; 0860618445; clarkele@tcd.ie

INVESTIGATOR’S SIGNATURE: Lee Clarke

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LEAD RESEARCHERS: Lee Clarke

BACKGROUND OF RESEARCH: Researching a Live Gaelic Scores application that computes scores on GAA matches throughout the country.

PROCEDURES OF THIS STUDY: My brother Killian will test the application at home. This will include looking at the application whilst it is being updated, a photograph of him holding the app and a written review of the app which will just entail if the app worked or not. A 5 question interview with players that he plays with which will be used as add on information within the app. Including: Inspiration; Boots worn; Favourite win; Toughest Opponent; Funniest teammate

PUBLICATION: Business and Computer Science Final Year Project.

Individual results will be aggregated anonymously and research reported on aggregate results.

DECLARATION:

• I am 18 years or older and am competent to provide consent.
• I have read, or had read to me, a document providing information about this research and this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.
• I agree that my data is used for scientific purposes and I have no objection that my data is published in scientific publications in a way that does not reveal my identity.
• I understand that if I make illicit activities known, these will be reported to appropriate authorities.
• I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights.
• I understand that I may refuse to answer any question and that I may withdraw at any time without penalty.
• I understand that my participation is fully anonymous and that no personal details about me will be recorded.
• I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.
• I have received a copy of this agreement.

PARTICIPANT’S NAME: Matty Donnelly

PARTICIPANT’S SIGNATURE:

Date: 26th March 2014

Statement of investigator’s responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHERS CONTACT DETAILS: Lee Clarke; 0860618445; clarkele@tcd.ie

INVESTIGATOR’S SIGNATURE: Lee Clarke

Date: 26th March 2014