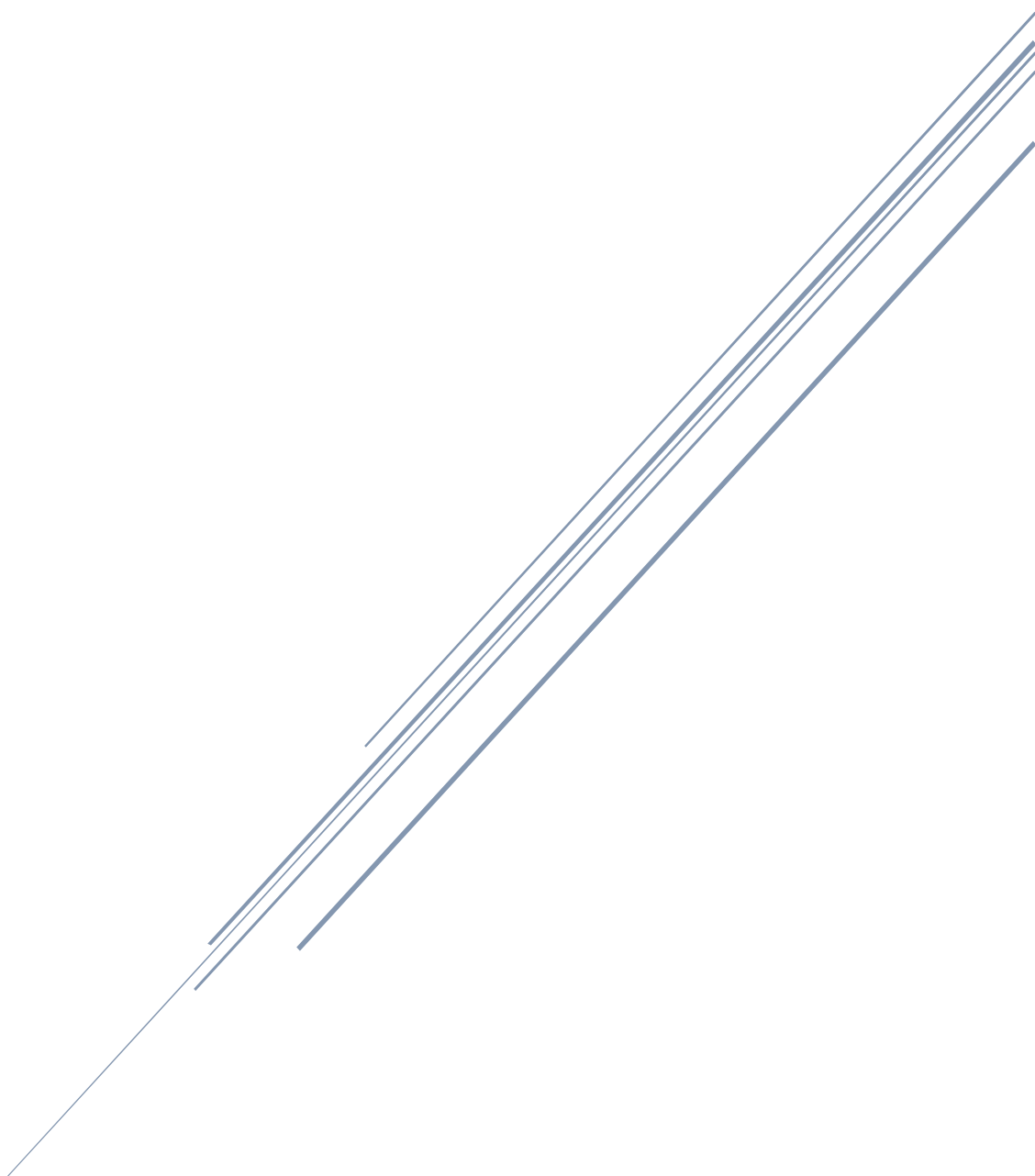


WINNING EDGE

G.A.A. Statistical Analyzer

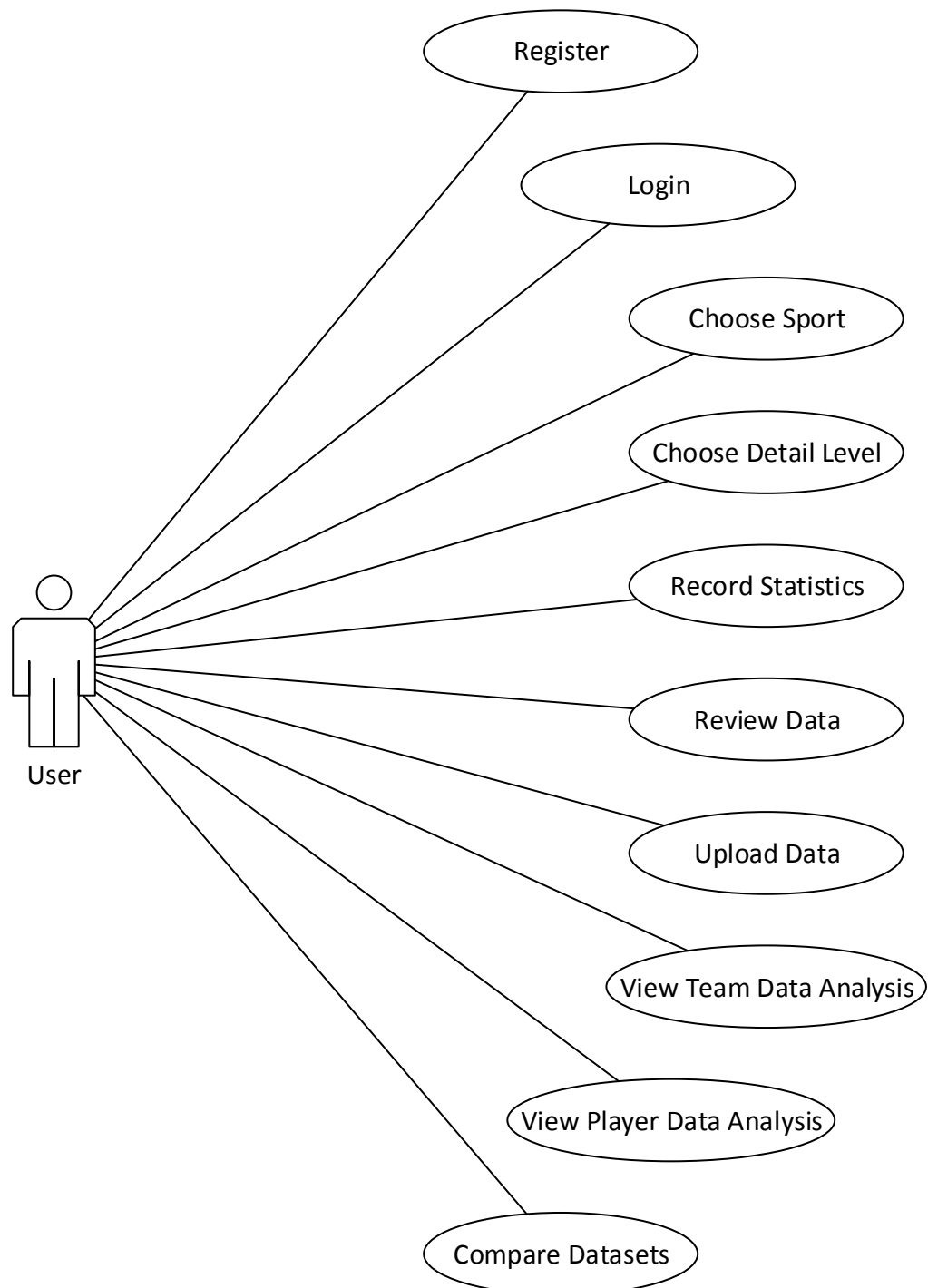


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Technical Architecture

Use Cases

Diagram



Register

I.D.: 1 **Priority:** High **Primary Actor:** User

As a user I want to be able to register so that I can create and use an account.

Scope: Statistical Analysis System

Level: User Level

Brief Description: User enters details to create an account to store the data.

Success

- Account is created and user is displayed with their home page.

Failure

- Invalid character message displayed.
- Empty field message displayed.
- Account with that email already exists message displayed.
- Invalid password message displayed.

Login

I.D.: 2 **Priority:** High **Primary Actor:** User

As a user I want to be able to login so that I can access my account.

Scope: Statistical Analysis System

Level: User Level

Brief Description: User enters login details to sign into their account.

Success

- User accesses account successfully and their home page is displayed.

Failure

- Empty field message displayed.
- Invalid email or password message displayed.

Choose Sport

I.D.: 3 **Priority:** Medium **Primary Actor:** User

As a user I want to be able to choose which sport I am recording so that I can have specific attributes for my specified sport.

Scope: Mobile Application

Level: User Level

Brief Description: User chooses which sport to record data for.

Success

- Depending on choice either Hurling or Football Screen is displayed.

Failure

- Application unable to load page, error message displayed.

Choose Detail Level

I.D.: 4 **Priority:** Low **Primary Actor:** User

As a user I want to be able to choose my level of statistic taking so that I can tailor the amount of fields in which I'm recording.

Scope: Mobile Application

Level: User Level

Brief Description: User chooses the level of detail which they would like to use for recording the statistics.

Success

- If user chooses in-depth analysis, extra recording fields are displayed. Should the user choose a lower-level of detail, a less detailed variety of statistics can be recorded.

Failure

- Application unable to load page, error message displayed.

Record Statistics

I.D.: 5 **Priority:** High **Primary Actor:** User

As a user I want to be able to record in game statistics so that I can store and analyse them.

Scope: Mobile Application

Level: User Level

Brief Description: User enters details to create an account to store the data.

Success

- User touches on-screen icons which will add or take away from specific statistical counters.

Failure

- Application crash, error message displayed.

Review Data

I.D.: 6 **Priority:** Low **Primary Actor:** User

As a user I want to be able to review my recorded data so that I can verify it before uploading.

Scope: Mobile Application

Level: User Level

Brief Description: User reviews their recorded data before uploading.

Success

- All recorded data is displayed, user can verify or edit the data if a mistake was made.

Failure

- Application unable to load data, error message displayed.

Upload Data

I.D.: 7 **Priority:** High **Primary Actor:** User

As a user I want to be able to upload my recorded data so that I can analyse it on the web application.

Scope: Mobile Application

Level: User Level

Brief Description: User is happy with recorded data and uploads it to their account.

Success

- Data is successfully uploaded to user's account. Confirmation message displayed.

Failure

- No network connection message displayed.
- Data upload error message displayed.

View Team Data Analysis

I.D.: 8 **Priority:** High **Primary Actor:** User

As a user I want to be able to analyse team statistics so that I can develop new strategies and tactics.

Scope: Web Application

Level: User Level

Brief Description: User views analysis for team data.

Success

- Data for team is displayed using tables, graphs, charts etc..

Failure

- No network connection error message displayed.
- Unable to load data message displayed.

View Player Data Analysis

I.D.: 9 **Priority:** High **Primary Actor:** User

As a user I want to be able to analyse player statistics so that I can give constructive feedback for player development.

Scope: Web Application

Level: User Level

Brief Description: User view analysis for individual player data.

Success

- Player statistics from selected match are shown using tables, graphs, charts, etc...

Failure

- No network connection error message displayed.
- Unable to load data message displayed.

Compare Datasets

I.D.: 10 **Priority:** Medium **Primary Actor:** User

As a user I want to be able to compare various datasets so that I can monitor development and changes over time.

Scope: Web Application

Level: User Level

Brief Description: User chooses datasets to compare and data is displayed side by side.

Success

- Chosen datasets are loaded and shown successfully using tables, graphs, charts, etc...

Failure

- No network connection error message displayed.
- Unable to load data message displayed.

Technical Architecture

Software Components

Database:	MongoDB with C# Driver for .Net Framework
App Engine:	ASP.NET RESTful API
Mobile Platform:	Windows Phone 8.1

Platform Libraries

Windows Phone Application

Languages:	C# and EAML
APIs:	ASP.NET Web API, DPAPI

Web Application

Languages:	HTML, JavaScript, CSS, and C#
Framework:	ASP.NET MVC 5, Bootstrap
APIs:	ASP.NET Web API
Libraries:	D3.js

RESTful Web API

Json.NET Web API communicates using JSON objects.

Distribution and Deployment

RESTful Web Service

The mobile and web applications will communicate with the database through a RESTful web service.

Nokia Lumia

The mobile application will be deployed on a Nokia Lumia device to show its full functionality.

Security

- SSL Certificate for Web Services.
- Data Protection API – Windows Phone
- HTTPS – Web Application

Risks

System Scope

The system includes both a web and mobile application, both of which will be linked to a RESTful Web Service. The Web Service will provide the link between applications and a SQL database. The scope of the system and the variety across the various platforms will have risks.

Scalability

How the system copes with larger datasets being pulled down will be a risk. As the load increases it is vital that user experience is not dampened and loading speeds are not affected.

Target Deliverables

Due to the variety of technologies being implemented and the complexity involved keeping with time constraints will always be a risk to the project. The project will aim to meet strict deadlines to avoid problems in this area.

User Experience

As there are other existing applications in this area it is important that this system improves on them, adding new features combined with an attractive and user-friendly interface.

Prototype

Deliverable One (Week 8)

Aim: Deliver use case 1 (Register) and use case 2 (Login) for deliverable one.

Testing: Unit testing will be implemented for any logic in place for these use cases. Black box testing will be used to test field validation ensuring all fields are filled in correctly and to prevent any SQL injection attempts.

Deliverable Two (Week 11)

Aim: Deliver use case 3 (Choose Sport), use case 5 (Record Stats) and use case 7 (Upload Data) for deliverable two.

Testing: Unit testing will be implemented for any logic in place for these use cases. Black box testing of all functionality within choosing your sport and recording of statistics. Upload tests to ensure system can handle required amounts of data.