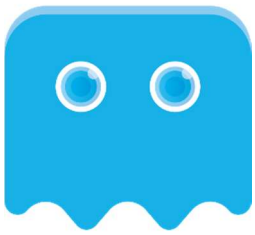

# Blocksports.io

# Application Goals and Design

Version 1.0

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Document Author: Gabriel Olesen

Contract Details: Computer Science Student

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# 1. Introduction

Blocksports.io is a decentralized application that eliminates the reliance on similar third-party websites and applications that are vulnerable to centralization. It also adds an extra layer of incentivisation that helps spread adoption of the blockchain ecosystem and solves the problem of rigged competitions.

The reason why we wanted to create this website to give you, the user a new, fun and intuitive way to interact with a new technology. You will be able to track, watch and engage with daily/weekly prizes powered by other users on the website.

**Goals**

- Should eliminate the ability to sabotage user ran competitions by implementing the use of blockchain technology
- May facilitate the use of a forum for all things sport on the blockchain to create awareness of the technology
- The dApp shall be accessible to any user
- Create blockchain awareness through sport

**Objectives**

- Prevent the manipulation of tipping within sporting events and competitions
- Platform incentives through the use of competitions and user retention

## 1.1 Business Case/Use Case

**Tipping –**

With Blockspots.io we can easily create a tipping system that works like its current centralized form. However, as we will be on-chain we have the ability to make it immutable. Unlike todays tipping which encourages the facility to cast multiple tips and is mutable. The characteristics of blockchain makes it a viable candidate in addressing concerns of security and is configurable.

In addition, Blocksports tipping can be implemented with two check boxes a winner and a loser, with an optional box for a draw (this is dependent on the sport). The tips, upon confirmation are then sent on the blockchain to be verified. Once verified the casted tip will appear for all users.

**Leaderboards –**

Blocksports leaderboards allows users to see their ranking on the platform. The leaderboards sum up all the data given by the tips completed by the users and will appear in a ranking board. Ranking is determined by the users tip, if correct will be awarded one point, if incorrect. We will allow users to view rankings based on a specific sport or all sports. Additionally, it can be detailed i.e. by date range or specific month.

Another interesting application aspect is Ranking Rewards. A Blocksports-based reward system in which the user controls. A percentage of the cryptocurrency pool can be allocated and distributed between the top-ranking users of said period. The period can be determined by sport, season or bi-weekly.

**Users –**

Users will be the fuel of the platform; they will be given an option to add their deposit address to their account. This will allow them to receive platform rewards. However, they will still be able to participate in the different aspects of the application without adding their deposit address.

Additionally, another interesting feature to implement is the ability to login with your wallet, as cryptocurrency adoption grows having the option to login via your wallet will be a great ease of use to the users.

Finally, users will be able to create their own competitions within any genre of sport. To help this feature grow we can add incentives for users to reach certain goals. For example, '50/50 - invite 50 users and get 50 tips. Reward: 100KCAL'.

**Payouts –**

Payouts will be tied to a user's deposit address via their account. The payouts will be done in percentages and dependent on competition and type of game. The payout reward mechanism will have multiple functionality, we will aim to create a high user retention.

As the users will create the demand via interacting with tipping, leaderboards and later on the ability to place cryptocurrency on the selected tip (KCAL and others).

## 1.2 Blockchain Scope

The integration of Blocksposts.io APIs will not be on the blockchain because simply it doesn't need to be. We will be implementing many already existing APIs onto the platform to produce a real-time update on most (if not all) sports thus producing a hybrid solution.

Furthermore, with the ability to incorporate identity on the platform we can leverage Phantasma names friends to create competitions, add users and create invite links on-chain.

Normal user registration (via e-mail) will also not be on the blockchain as we would like everyone to have access and the ability to participate.

**High-Level Functional Requirements**

- The system shall allow the user the ability to enter queries on the database in order to retrieve data about certain aspects of a sports performance.
- The system shall allow the user to produce graphical reports on the correct and incorrect tips given by themselves and/or other users.
- The system shall not allow the user to change a tip once submitted and verified by the blockchain.
- The system shall allow the user to login with their blockchain wallet.
- The system shall allow the user the ability to use data retrieved from leaderboards to generate graphical reports that may include multiple functions.
- The system shall have the ability to configure and adjust the fee structure and tiers

# 2. Factors Influencing Technical Design

## 2.1 Assumptions and Dependencies

- It is assumed that most users will provide their deposit address to receive the platform rewards.
- It is assumed that (if enabled) users will receive notifications on platform payouts via email.
- It is assumed that multi-chain support will be supported thus creating another category for competitions for different cryptocurrencies.
- Blocksports.io sports data will be provided by 3rd party APIs to gather and update certain statistics, it will depend on these APIs to function properly.

## 2.2 Constraints

Timeliness of data flows both from and to the database and reliability of the system are major constraints on the design. Both of these factors can be addressed through appropriate system architecture and implementation.

To address the timeliness factor, the system should be designed such that it can process potentially large volumes of data from a variety of sources and at high rates. An architecture which is implemented across multiple servers and communication channels may address this issue.

The Internet connection is also a constraint for the application. Since the application fetches data from the APIs over the Internet, it is crucial that there is an Internet connection for the application to function. Both the web application and the APIs will be constrained by the capacity of the database.

Finally, cost - as the platform will store user information, API information a secure server will be needed and audited as to prevent any breaches.

# 3. Proposed System

## 3.1 User Description

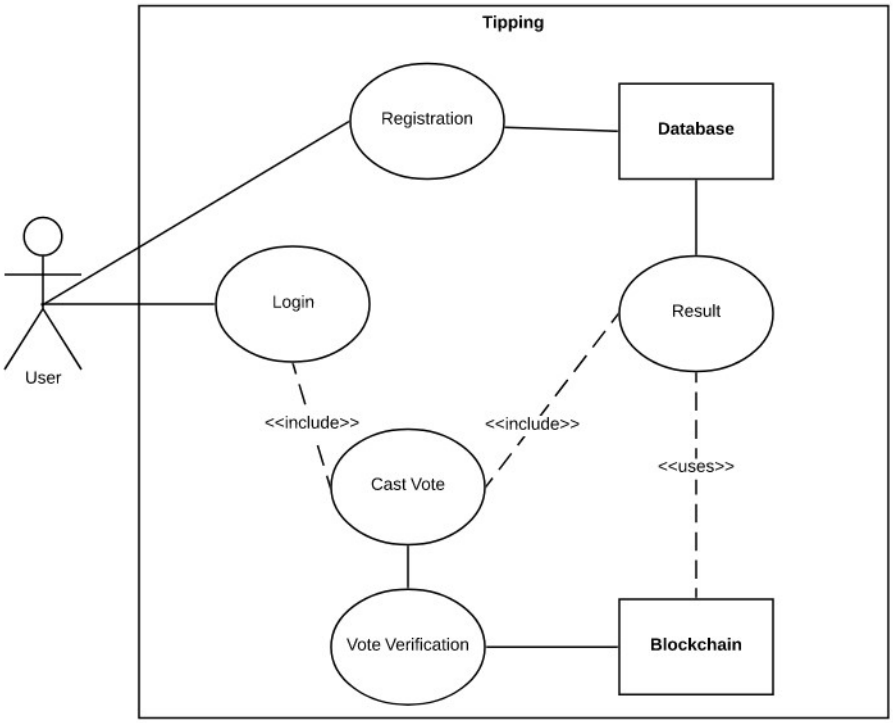


**Figure 1 - Use Case Diagram: Tipping**

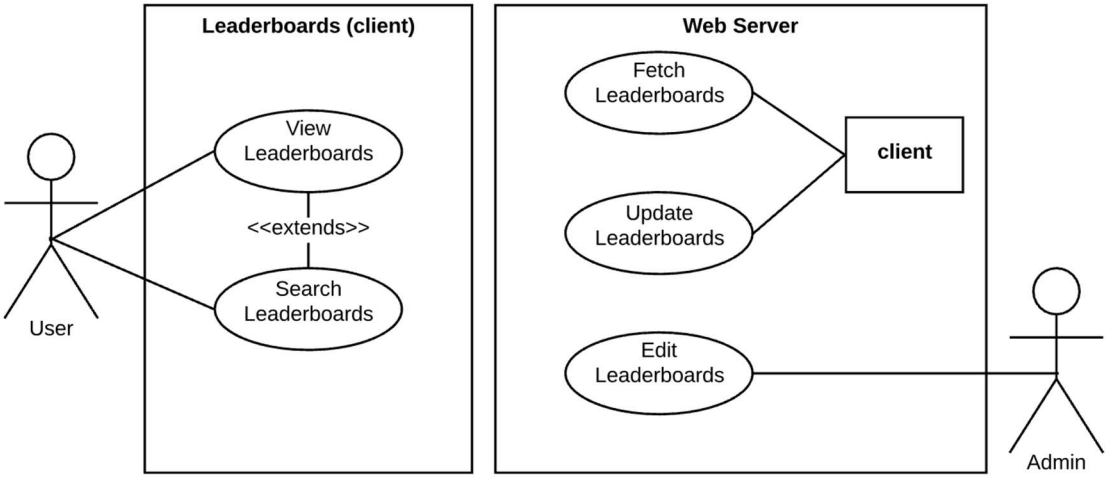


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**Figure 2 - Use Case Diagram: Leaderboards**

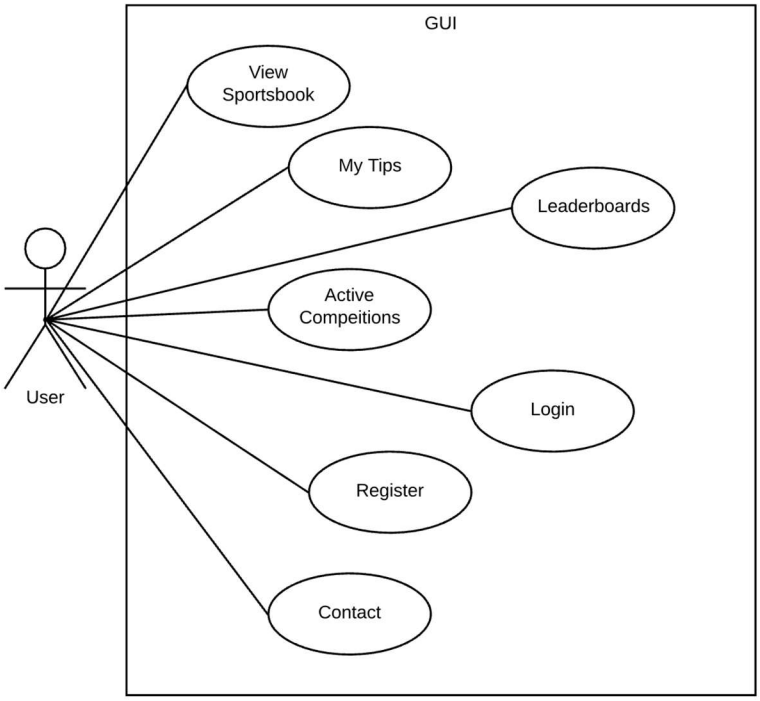


**Figure 3 - Use Case Diagram: Users**

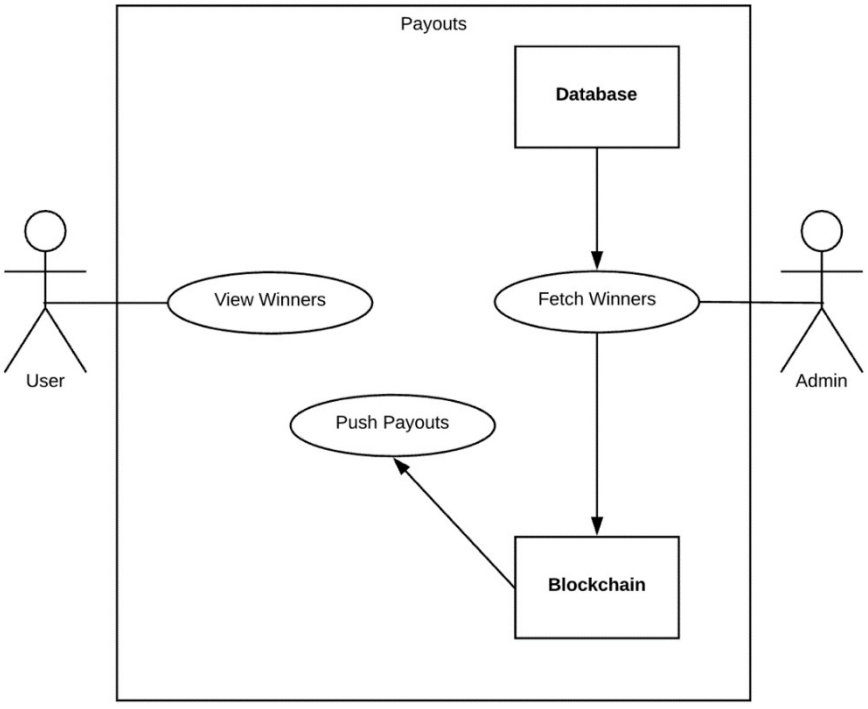


**Figure 4 - Use Case Diagram: Payouts**

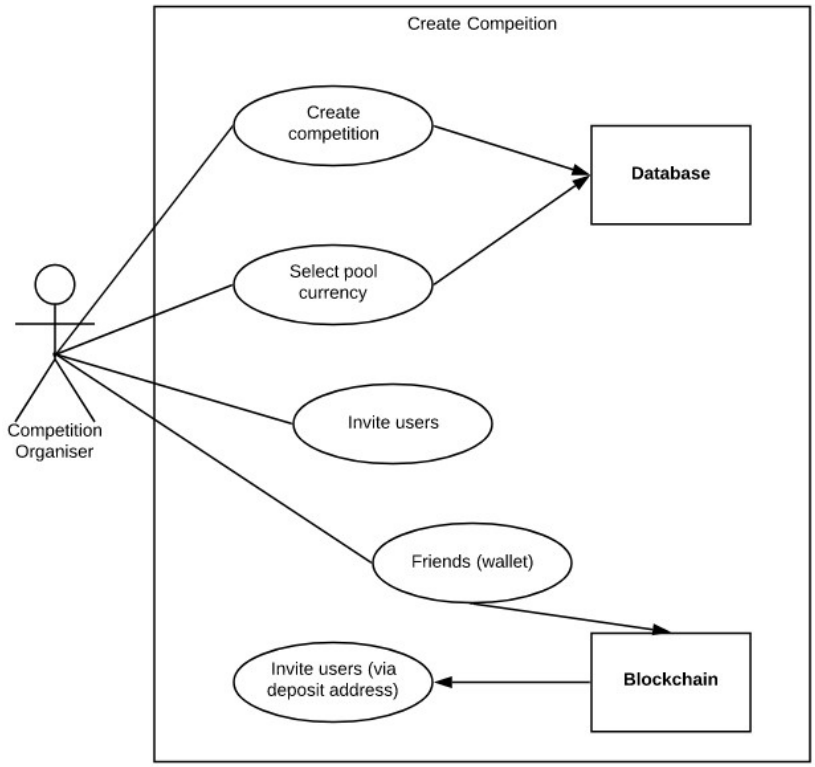


**Figure 5 - Create Competitions**

## 3.2 Sequence Diagrams

We have also produced sequence diagrams for most of the use cases shown above. These were created to illustrate the objects and classes involved in each scenario as well as the sequence of messages exchanged between the objects needed to carry out the functionality of said scenario.

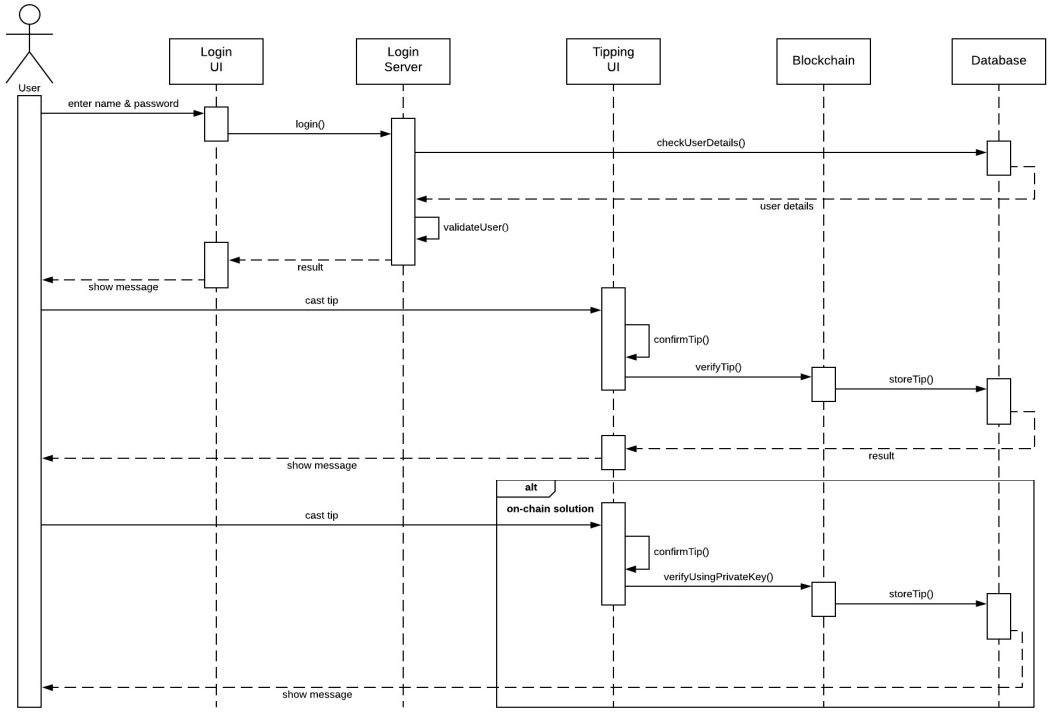


**Figure 6 - Tipping Sequence Diagram**

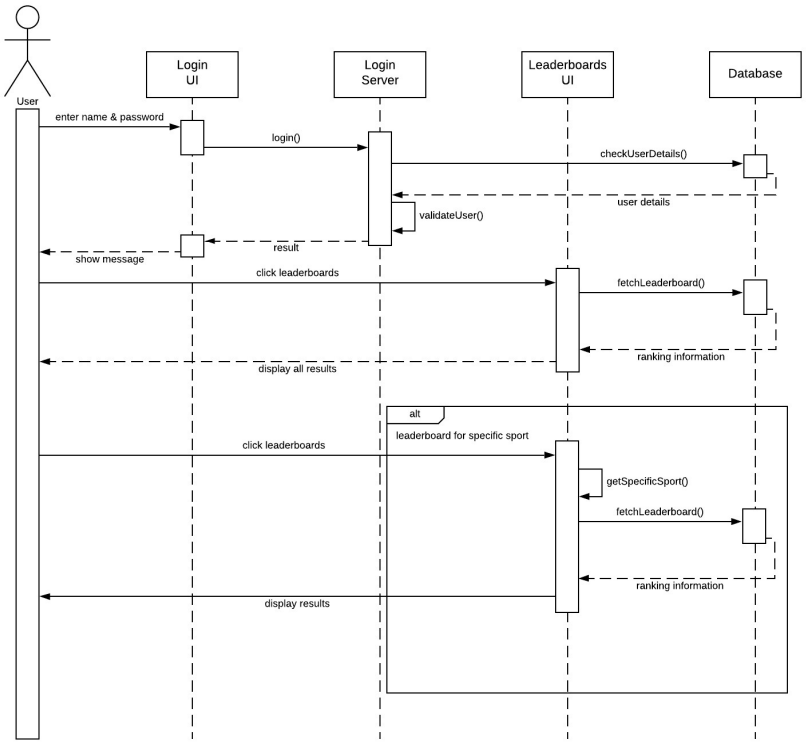


**Figure 7 - Leaderboard(s) Sequence Diagram**

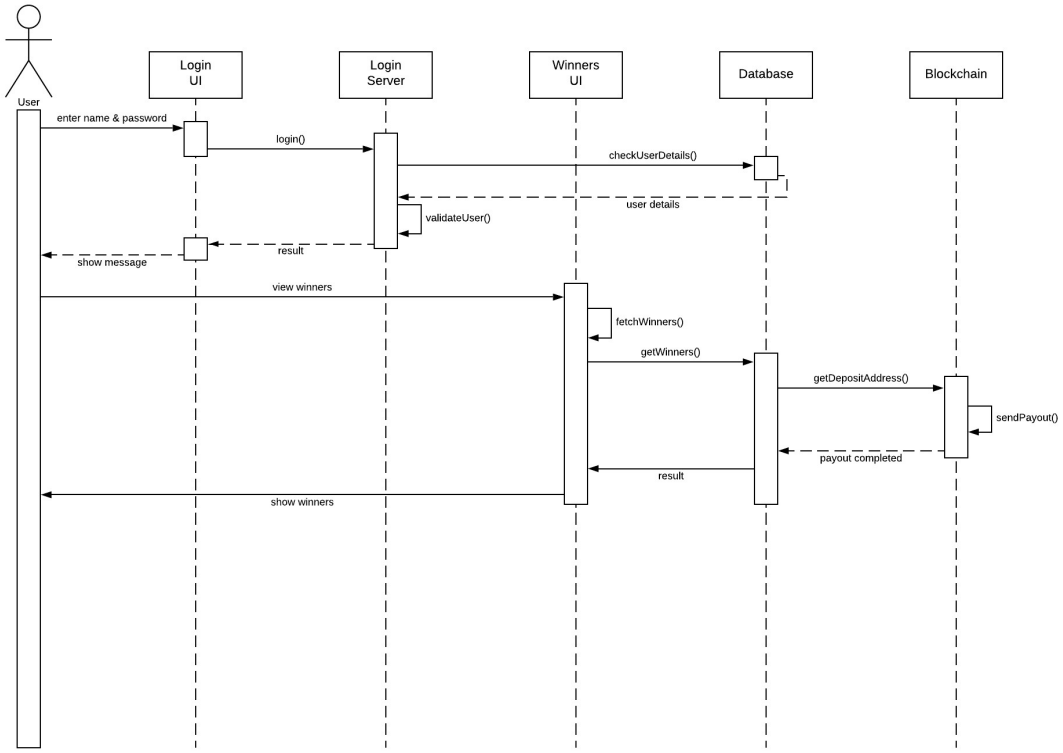


**Figure 8 - Payout(s) Sequence Diagrams**

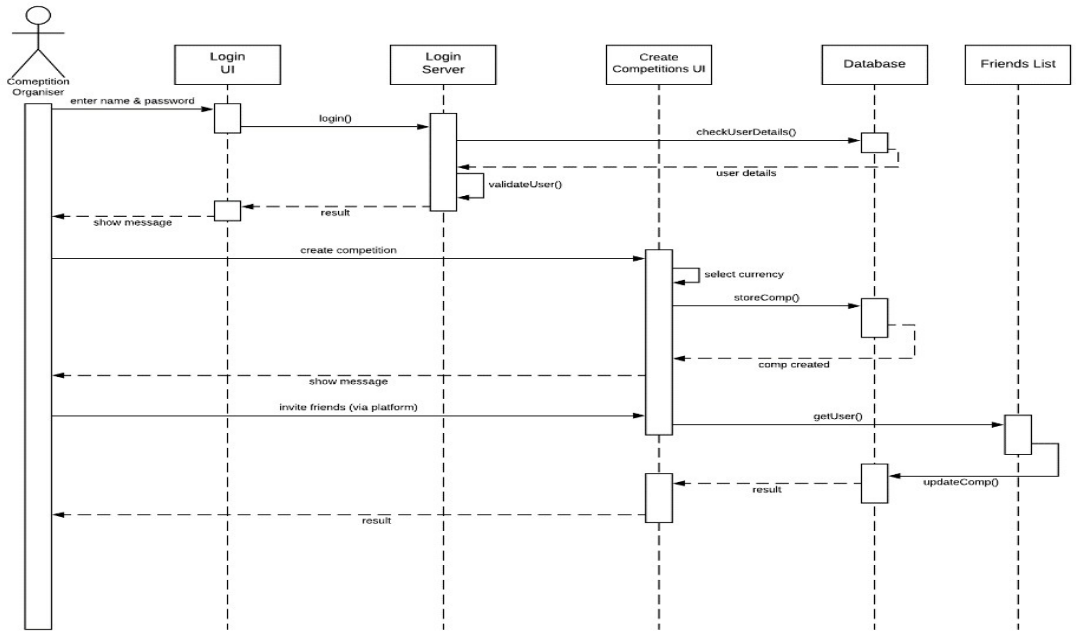


**Figure 9 - Competition Creation Sequence Diagram**

# 3.3 Information Architecture

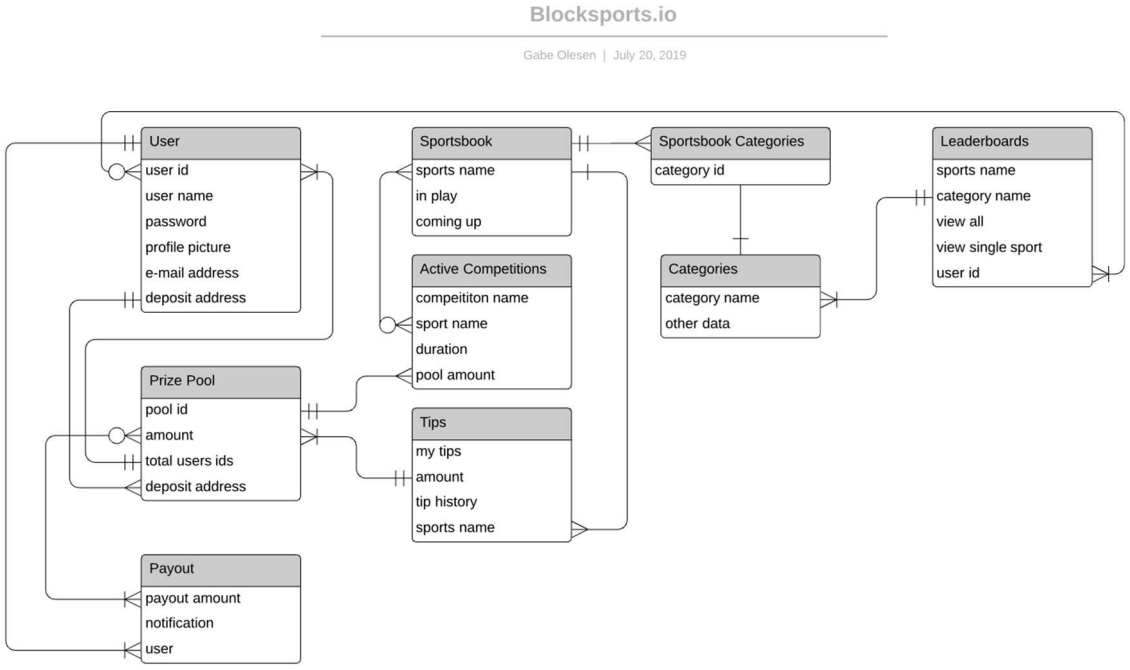


**Figure 10 - Blocksports Entity Relationship Diagram**

## 3.4 User Interface Architecture

Below is the proposed user interface for Blocksports.io.

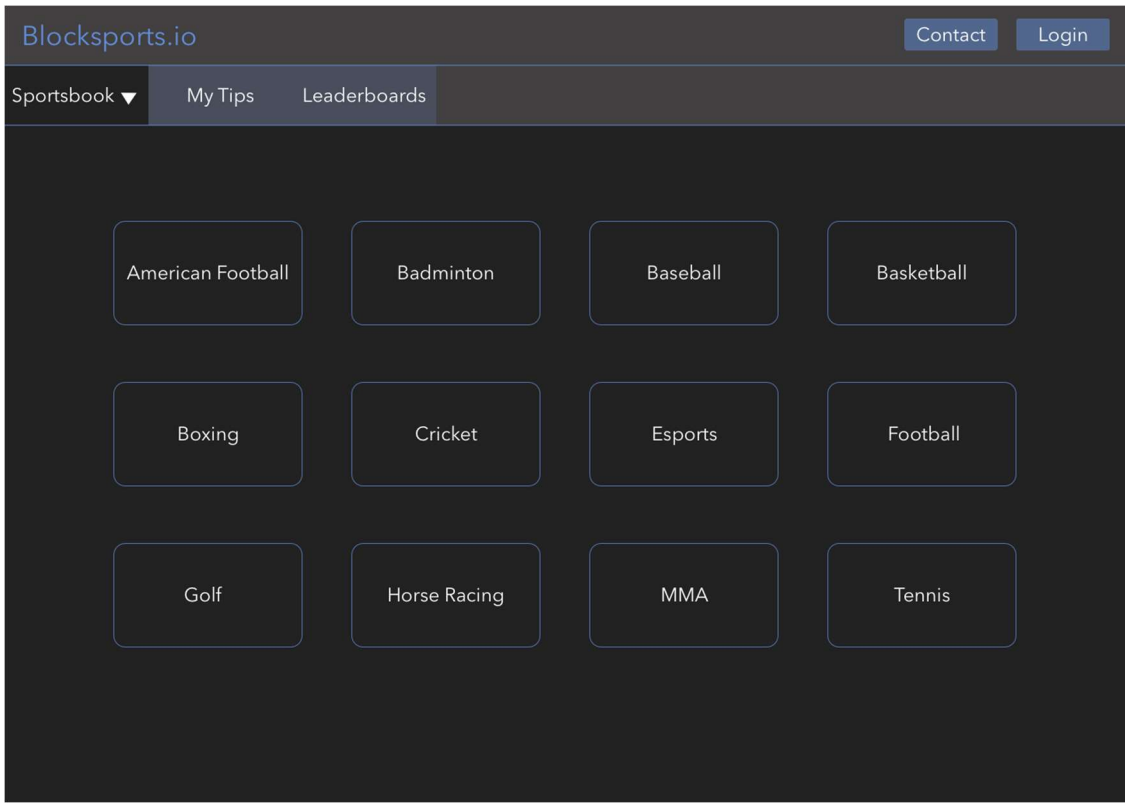


**Figure 11 - Landing Page (Main)**

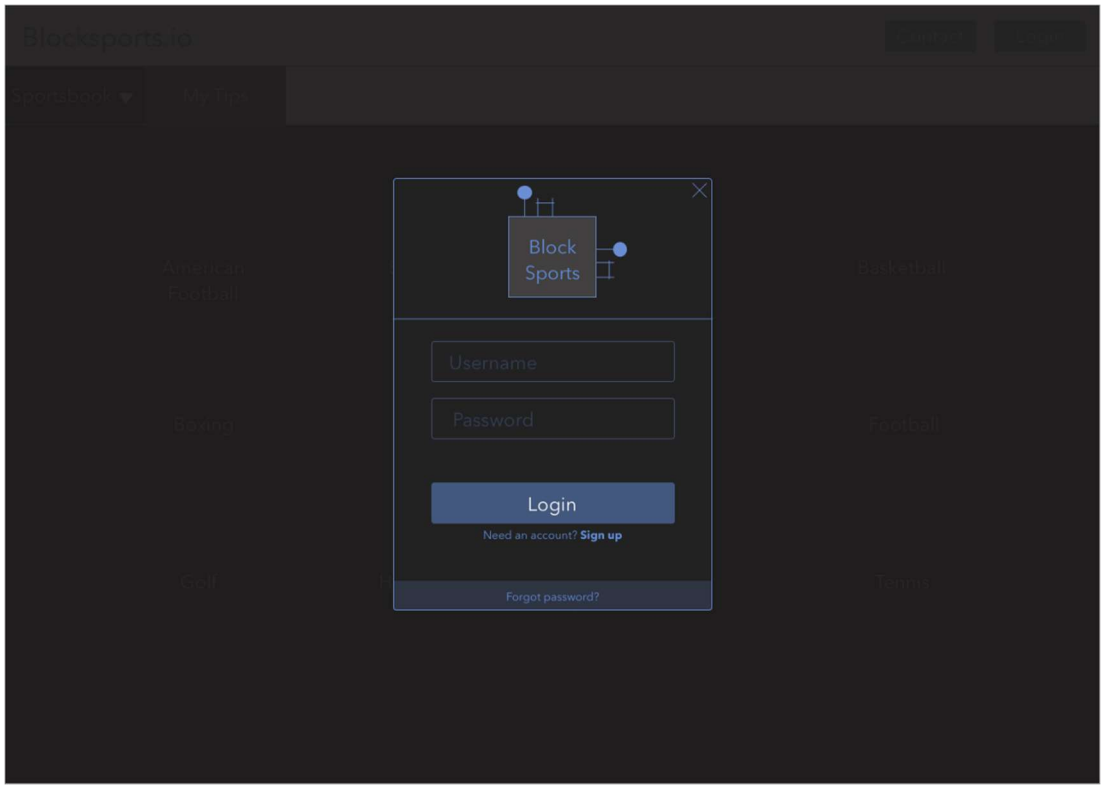


**Figure 12 - Login Page**

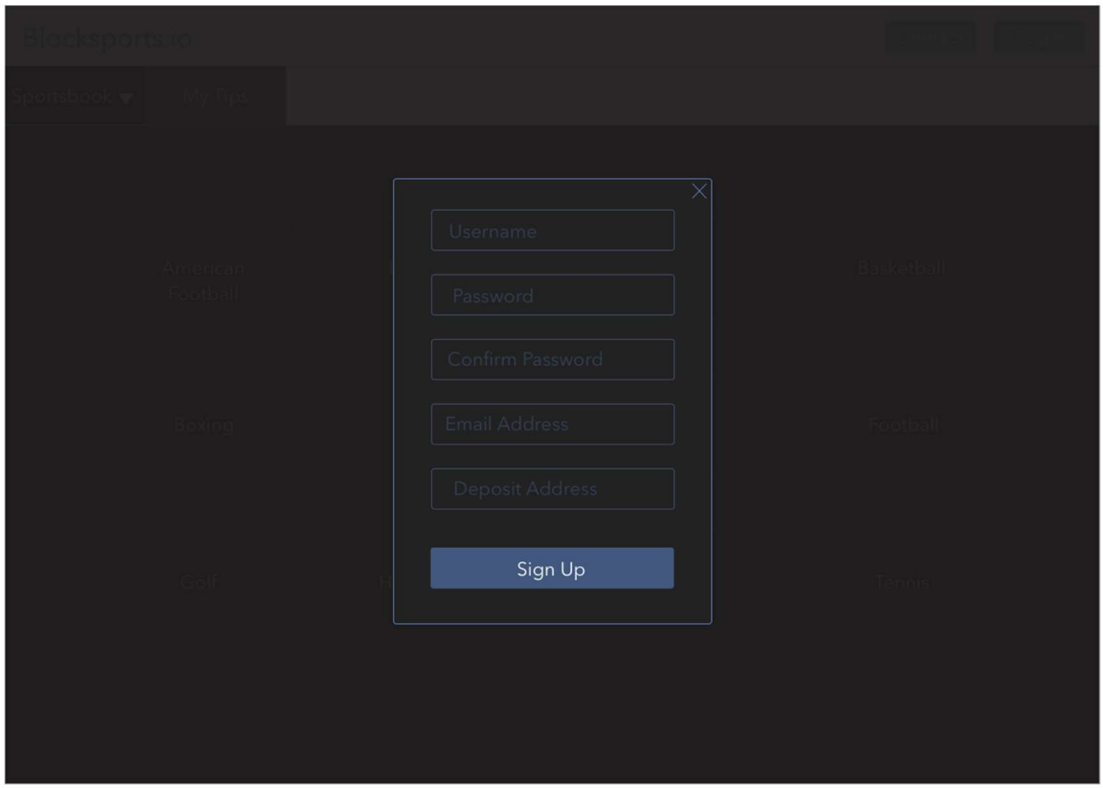


**Figure 13 - Registration Page**

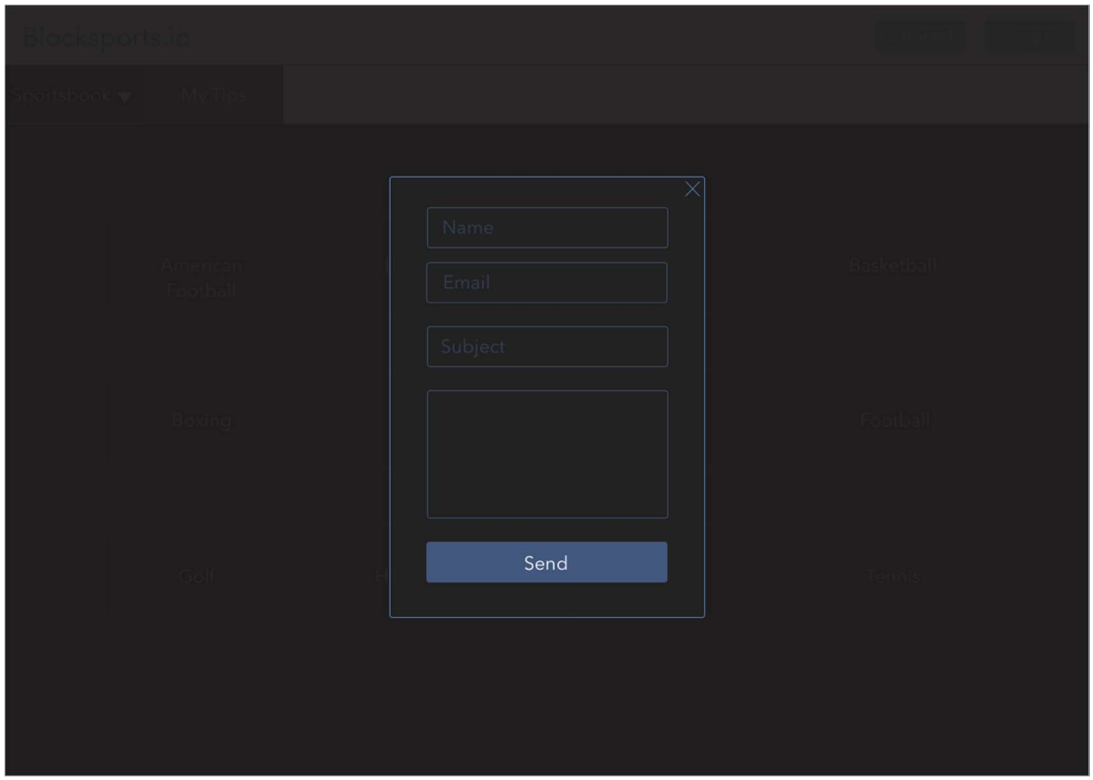


**Figure 14 - Contact Us Page**

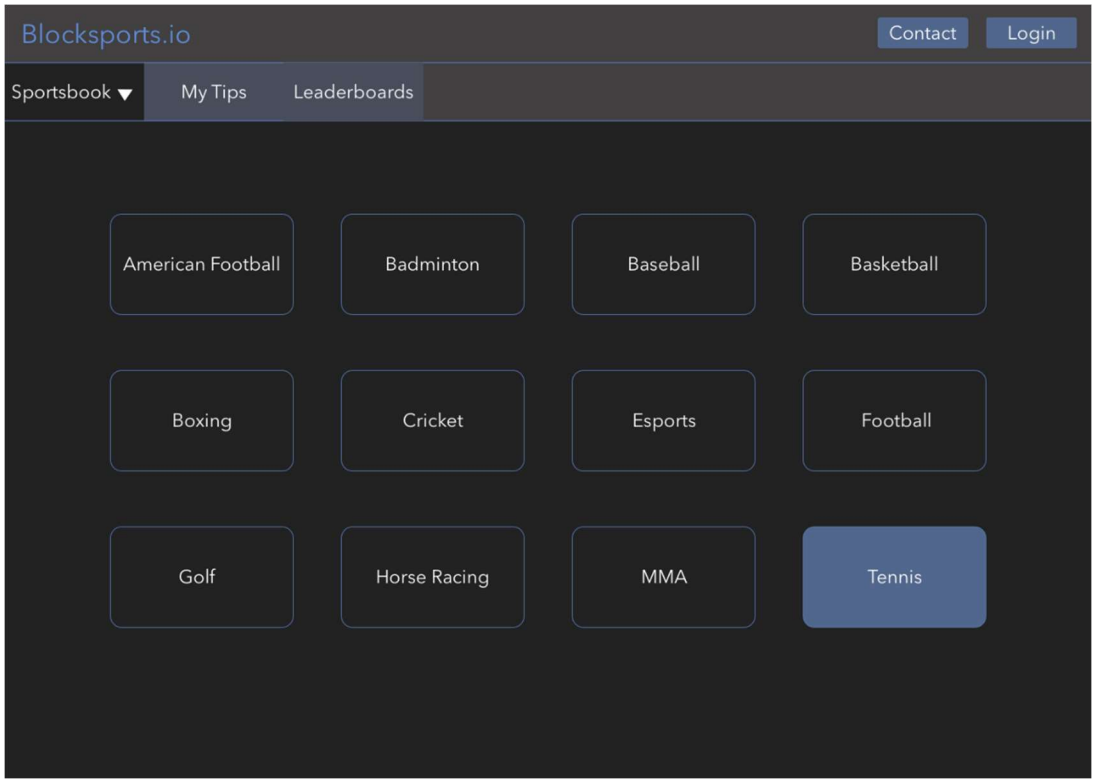


**Figure 15 - Sport Select Preview**

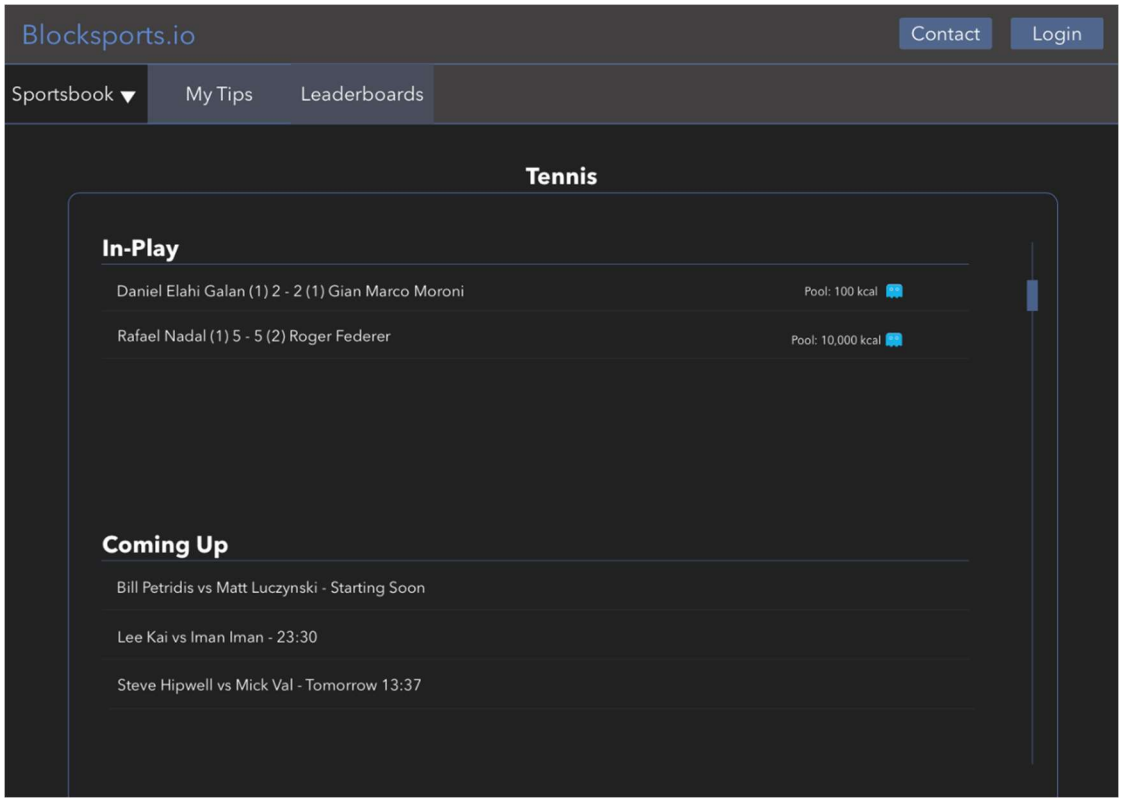


**Figure 16 - Sport Page Preview**

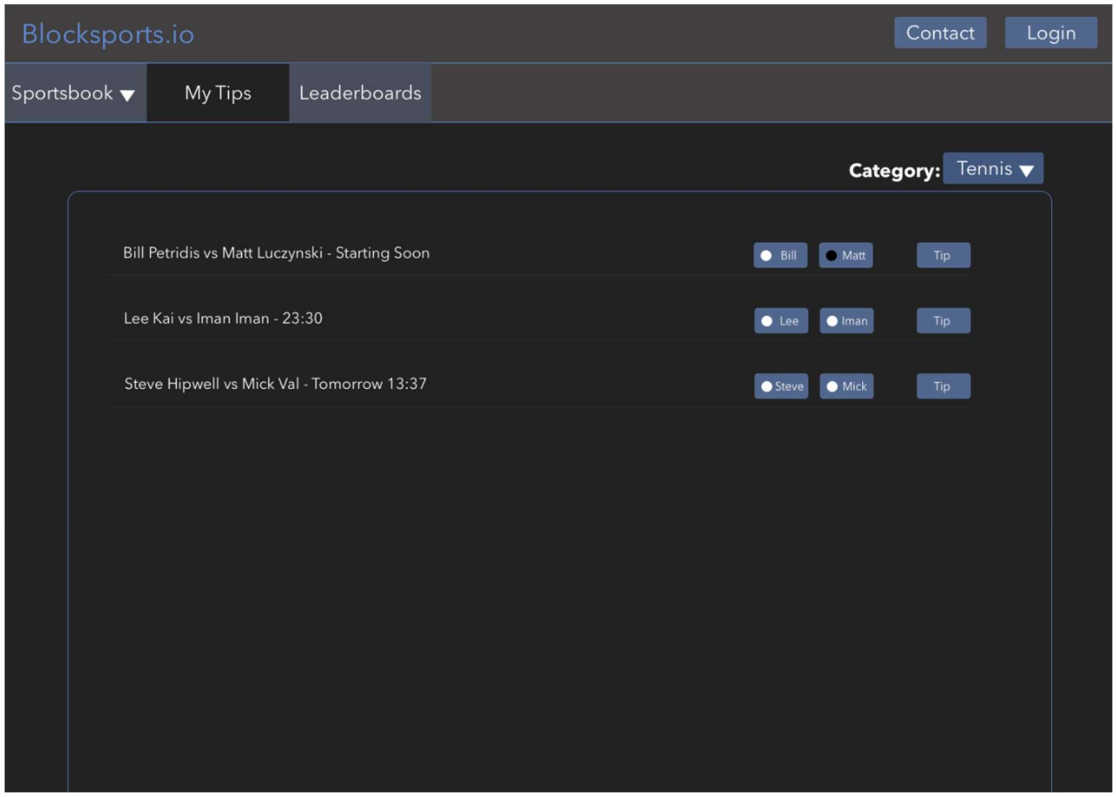


**Figure 17 - Tipping Selection**

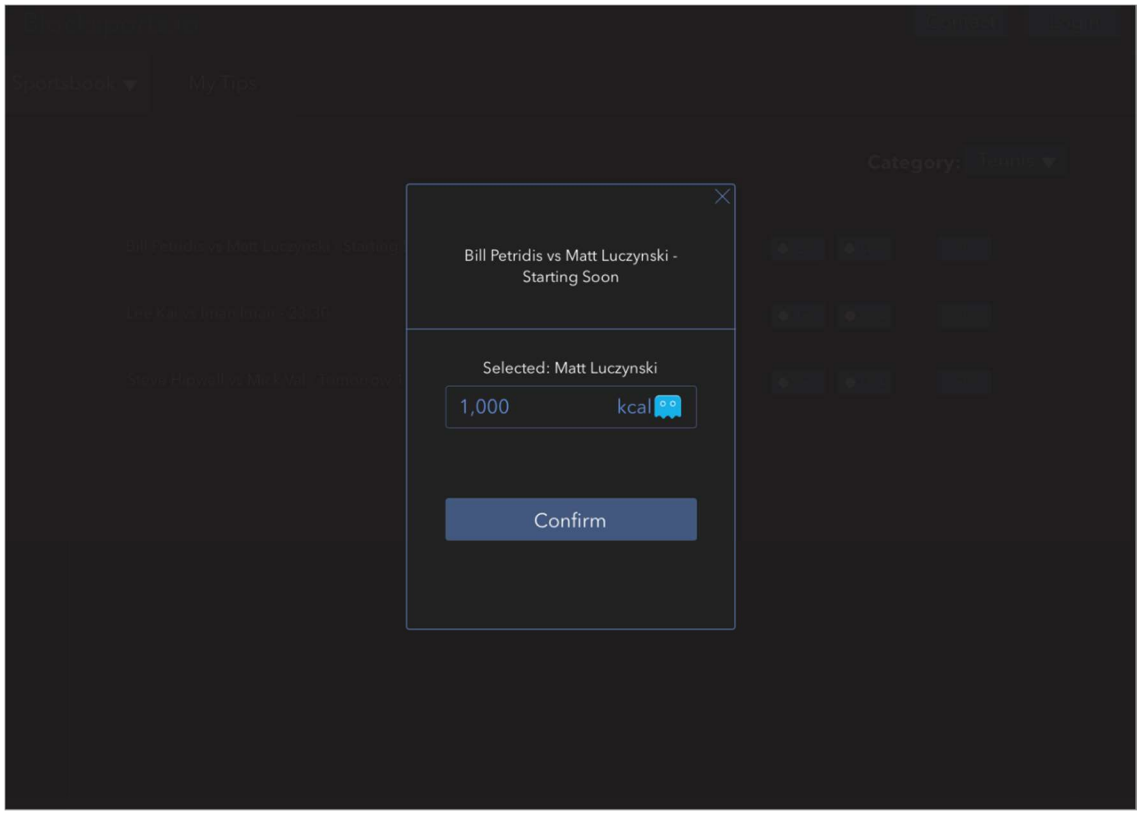


**Figure 18 - Tipping Confirmation with KCAL**

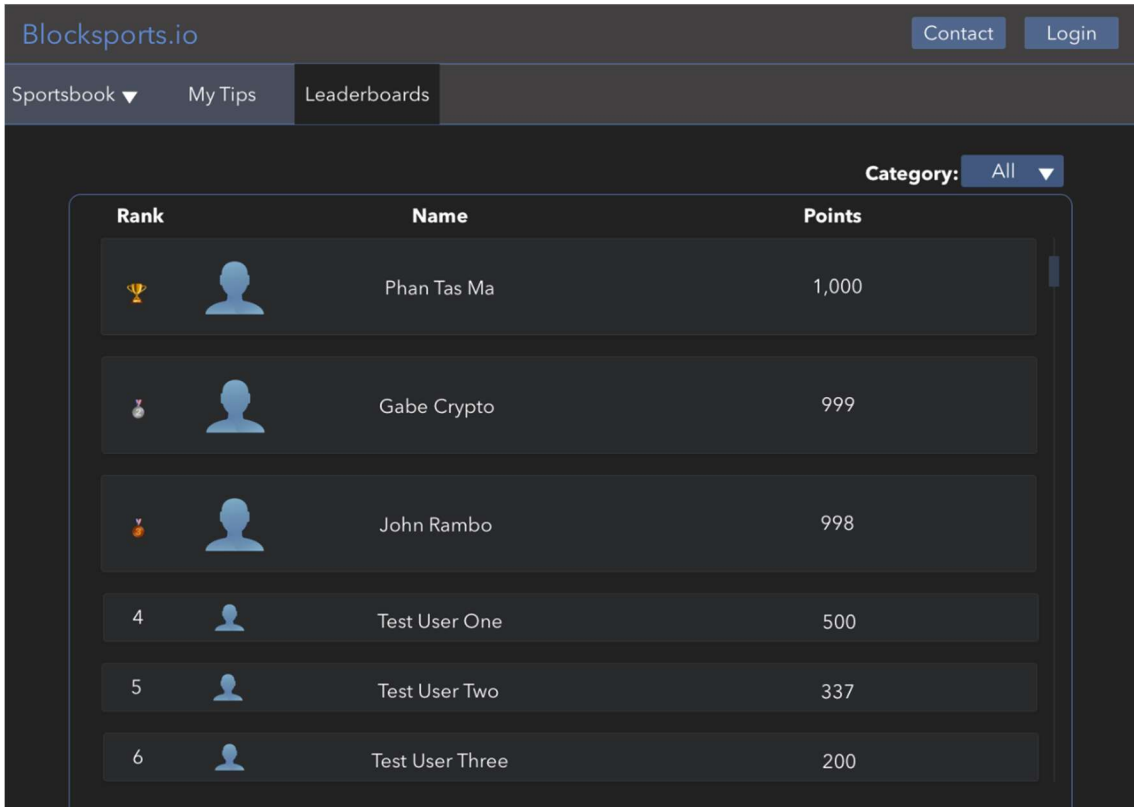


**Figure 19 - Leaderboards**

# 4. Technology Architecture

## 4.1 Platform

Desktop and Laptop Computers - for the most user-friendly experience. In the future we will be implementing an iOS and Android mobile application (See Roadmap).

The technology stack we will be using on Blocksports.io using GWT (Google Web Toolkit) and MySQL for the database. This still isn't finalized and can be amended.

## 4.2 Connectivity Requirements

The system will always require an internet connection. The reason for this is we will have features such as "In-Play" which will pull data from multiple APIs in real-time providing the users the most accurate information while on the platform.

## 4.3 Platform

**Operating System**

- Windows 7 or later
- Mac OS 10.7 or later

**Browsers—the latest versions of the following:**

- Google Chrome
- Mozilla Firefox
- Internet Explorer 11 or newer
- Microsoft Edge (Windows 10 only)
- Safari (Mac only)

## 4.4 Security and Privacy Architecture

For Blocksports.io login page we will use SSL encryption. Additionally, we may be hosting the web server and database via Amazons AWS. This will allow for the following:

- Network firewalls built into Amazon VPC, and web application firewall capabilities in AWS WAF let us create private networks, and control access to your instances and applications
- Customer-controlled encryption in transit with TLS across all services
- Connectivity options that enable private, or dedicated, connections from our office or on-premises environment
- Automatic encryption of all traffic on the AWS global and regional networks between AWS secured facilities[1]

## 4.5 Authentication and Authorization

For account registration users will be required to supply a username and password we will implement will use CAPTCHA or RECATCHA. This prevents or reduces the level of automated (BOT) signups that might occur on the platform.

Additionally, once users have set-up their account, they will have the option to add Two Factor Authentication (2FA). The reasoning is; passwords are old-fashioned. Most users fall time and again into the bad habit of choosing weak passwords.

Analyses of hacked passwords frequently show that large percentage of people opt for passwords such as ‘12345’ and ‘password’, with requirements for alphanumeric passwords barely improving the situation. Used in combination with a password, 2FA greatly enhances security.[2]

# 5. Risk and Mitigation

## 5.1 Blocking Issues

Blocksports.io cannot function without APIs. We will need to identify which APIs to use and what data will be presented for the app to fully function. Additionally, we will need to determine which technologies to use and combine to build well round and robust system.

## 5.2 Critical Success Factors

- Allow users to register and login
- Allow users to view in-play sports
- Allow users to tip
- Allow users to see their score via leaderboards
- Apply multiple APIs to different sports to show data

**Long-term challenges:**

- Wallet login
- Prize pool rewards via deposit wallet address
- User made competitions with reward incentives

# 6. Roadmap

Below is the version one roadmap for Blocksports.io, we will aim to hit all targets within the set data. Unfortunately, we cannot confirm that we will hit these because of the following; development, release, and timing of any products, features or functionality and thus is subject to change.

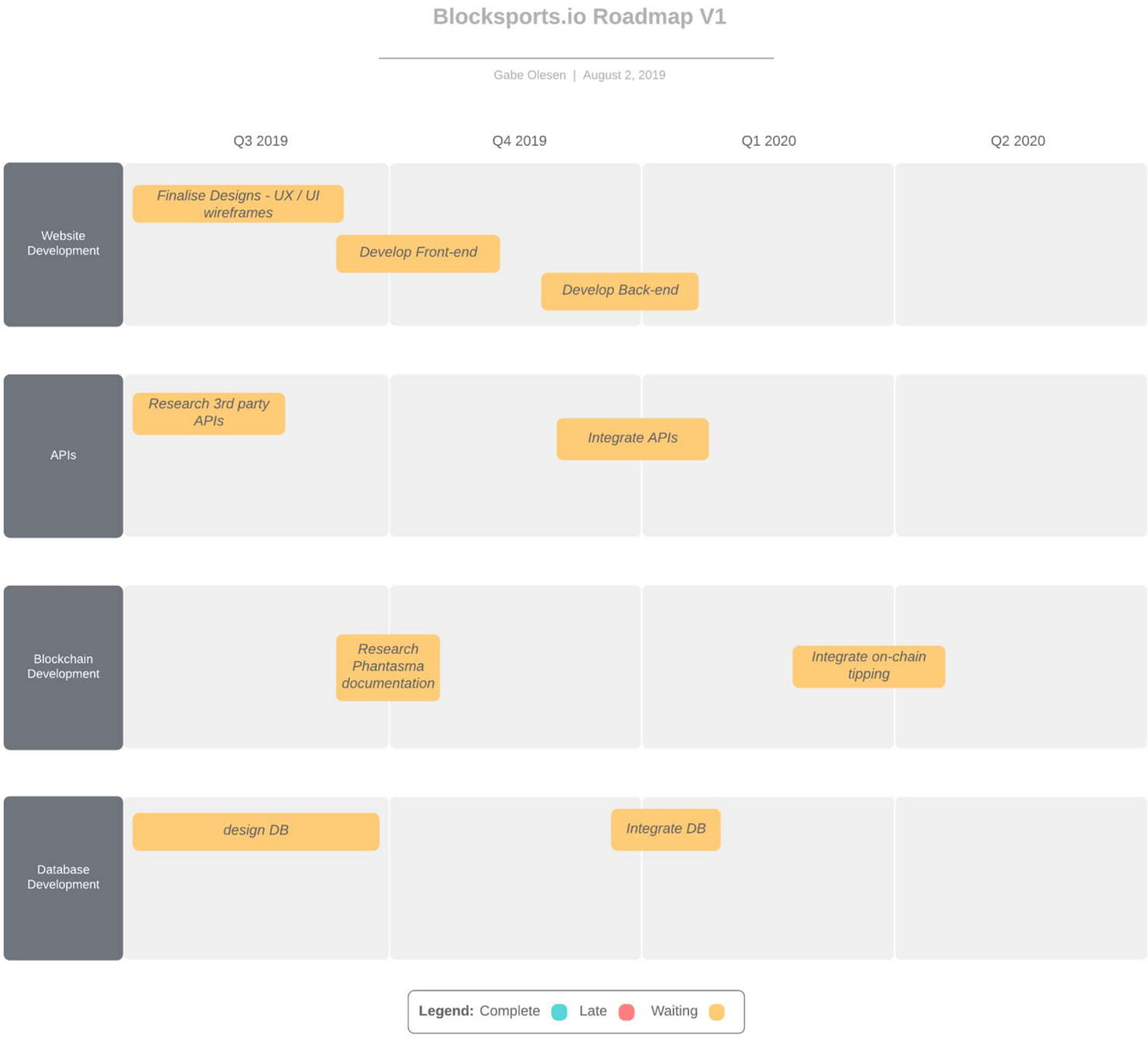


**Figure 20 - Blocksports Roadmap V1**

[1] Amazoncom. 2019. Amazon Web Services, Inc. [Online]. [22 July 2019]. Available from: https://aws.amazon.com/security/

[2] Nexusgroupcom. 2018. Nexus Group. [Online]. [22 July 2019]. Available from: https://www.nexusgroup.com/blog/the-benefits-of-2fa/