# **CSC 431 –** R (Spring 2025) UScore - The Sports Score & Noise Tracker Software Requirements Specification (SRS)

**Team Number 4**

| Shane O’Neill | Project Manager/Software Engineer |
| --- | --- |
| Samuel Schell | Project Manager/Software Engineer |
| Elliot Wright | Project Manager/Software Engineer |
|  |  |

# Version History

| Version | Date | Author(s) | Change Comments |
| --- | --- | --- | --- |
| 1.0 | 02/12 | Shane O’Neill | Initial draft of the SRS document. |
| 1.1 | 02/14 | Samuel Schell | Added functional requirements and use cases. |
| 1.2 | 02/16 | Elliot Wright | Updated non-functional requirements section. |
| 1.3 | 02/17 | Shane O’Neill | Updated system constraints section. |
| 1.4 | 02/18 | Shane\_O’Neill, Samuel\_Schell, Elliot\_Wright | Improved clarity in non-functional requirements. |
| 1.5 | 02/19 | Samuel Schell | Integrated peer feedback and resolved comments. |
| 1.6 | 02/20 | Elliot Wright | Integrated peer feedback and resolved comments. |
| 1.7 | 02/21 | Shane O’Neill | Integrated peer feedback and resolved comments. |
| 1.8 | 02/23 | Samuel Schell | Created use-case diagrams for core features. |
| 1.9 | 02/24 | Elliot Wright | Conducted proofreading and formatting adjustments. |
| 2.0 | 02/25 | Shane\_O’Neill, Samuel\_Schell, Elliot\_Wright | Final review and submission of the SRS document. |

# Table of Contents

[1.](#_heading=h.3dy6vkm) **System Requirements** 6

[1.1](#_heading=h.1t3h5sf) Functional Requirements 6

[1.1.1](#_heading=h.4d34og8) Live Score Updates 6

1.1.2 Noise Meter 6

1.1.3 Quick-Reaction Chat System 7

1.1.4 Game Recaps 7

1.1.5 Customizable Feeds 8

[1.2](#_heading=h.2s8eyo1) Non-Functional Requirements 8

[1.2.1](#_heading=h.17dp8vu) Performance 8

1.2.2 Security 8

1.2.3 Scalability 9

1.2.4 Compliance 9

[2.](#_heading=h.3rdcrjn)**System Constraints** 10

[2.1](#_heading=h.26in1rg) Tool Constraints 10

[2.1.1](#_heading=h.lnxbz9) Programming Languages 10

[2.2](#_heading=h.35nkun2) Language Constraints 10

[2.2.1](#_heading=h.1ksv4uv) Supported Languages 10

[2.3](#_heading=h.44sinio) Platform Constraints 10

[2.3.1](#_heading=h.2jxsxqh) Web Accessibility 10

[2.4](#_heading=h.z337ya) Hardware Constraints 11

[2.4.1](#_heading=h.3j2qqm3) Server Requirements 11

[2.5](#_heading=h.1y810tw) Network Constraints 11

[2.5.1](#_heading=h.4i7ojhp) API Connectivity 11

[2.6](#_heading=h.2xcytpi) Deployment Constraints 11

[2.6.1](#_heading=h.1ci93xb) Hosting 11

[2.7](#_heading=h.3whwml4) Transition & Support Constraints 12

[2.7.1](#_heading=h.2bn6wsx) Future Expansion 12

[2.8](#_heading=h.qsh70q) Budget & Schedule Constraints 12

[2.8.1](#_heading=h.3as4poj) Timeline 12

[2.9](#_heading=h.1pxezwc) Miscellaneous Constraints 12

[2.9.1](#_heading=h.49x2ik5) Compliance 12

[3.](#_heading=h.2p2csry) **Requirements Modeling** 13

[3.1.1](#_heading=h.147n2zr) Live Score Updates 13

3.1.2 Noise Meter 13

3.1.3 Quick-Reaction Chat System 14

3.1.4 Game Recaps 14

3.1.5 Customizable Feeds 15

[4.](#_heading=h.3o7alnk) **Evolutionary Requirements** 16

[4.1](#_heading=h.23ckvvd) Functional Requirements 16

[4.1.1](#_heading=h.ihv636) Future Features 16

[4.2](#_heading=h.32hioqz) Non-Functional Requirements 16

[4.2.1](#_heading=h.1hmsyys) Scalability Improvements 16

### System Requirements

#### Functional Requirements

##### Live Score Updates

| Title | Live Score Updates |
| --- | --- |
| Description | The system shall provide real-time sports scores for multiple leagues using APIs |
| Priority | 0 |
| Precondition(s) | API connection established |
| Basic Flow | User selects a game, system retrieves and displays latest score updates |
| Postconditions(s) | Scores update dynamically |
| Use Case Diagram | 3.1.1 |

##### Noise Meter

| Title | Noise Meter |
| --- | --- |
| Description | The system shall measure fan excitement based on reactions, crowd energy, and key game events |
| Priority | 1 |
| Precondition(s) | Active game in progress |
| Basic Flow | System aggregates reactions and generates an intensity score |
| Postconditions(s) | Display updated noise levels |
| Use Case Diagram | 3.1.2 |

##### Quick-Reaction Chat System

| Title | Quick-Reaction Chat System |
| --- | --- |
| Description | The system shall allow users to post quick reactions to game events |
| Priority | 2 |
| Precondition(s) | User logged in |
| Basic Flow | User selects a game event, posts a reaction, and sees others' responses in real time |
| Postconditions(s) | Reaction appears in chat |
| Use Case Diagram | 3.1.3 |

##### Game Recaps

| Title | Game Recaps |
| --- | --- |
| Description | The system shall generate automated game summaries based on API data |
| Priority | 2 |
| Precondition(s) | Game completed |
| Basic Flow | System compiles key game events, player statistics, and fan engagement levels |
| Postconditions(s) | Summary displayed to users |
| Use Case Diagram | 3.1.4 |

##### Customizable Feeds

| Title | Customizable Feeds |
| --- | --- |
| Description | The system shall allow users to follow their favorite teams and leagues |
| Priority | 1 |
| Precondition(s) | User logged in |
| Basic Flow | User selects preferred teams, system filters content accordingly |
| Postconditions(s) | Personalized content displayed |
| Use Case Diagram | 3.1.5 |

#### Non-Functional Requirements

##### Performance

| Title | Performance |
| --- | --- |
| Description | The system shall update scores within 5 seconds |
| Priority | 0 |
| Applicable FR(s) | Live Score Updates |

##### Security

| Title | Security |
| --- | --- |
| Description | The system shall use secure authentication for user interactions |
| Priority | 1 |
| Applicable FR(s) | Quick-Reaction Chat System, Customizable Feeds |

##### Scalability

| Title | Scalability |
| --- | --- |
| Description | The system shall handle increased traffic during peak games |
| Priority | 1 |
| Applicable FR(s) | All Functional Requirements |

##### User Experience

| Title | User Experience |
| --- | --- |
| Description | The system shall ensure an intuitive, engaging, and responsive interface for users |
| Priority | 2 |
| Applicable FR(s) | Customizable Feeds, Quick-Reaction Chat System |

### System Constraints

#### Tool Constraints

##### Programming Languages

| Title | Programming Languages |
| --- | --- |
| Description | The system shall be developed using Java, Python, and C++ |
| Priority | 1 |

#### Language Constraints

##### Supported Languages

| Title | Supported Languages |
| --- | --- |
| Description | The system shall initially support English, with plans for multilingual expansion |
| Priority | 2 |

#### Platform Constraints

##### Web Accessibility

| Title | Web Accessibility |
| --- | --- |
| Description | The system shall be accessible via web browsers on desktop and mobile |
| Priority | 1 |

#### 

#### Hardware Constraints

##### Server Requirements

| Title | Server Requirements |
| --- | --- |
| Description | The system shall run on Unix-based servers with cloud deployment capability |
| Priority | 1 |

#### Network Constraints

##### Stable Internet

| Title | Stable Internet |
| --- | --- |
| Description | The system shall rely on stable internet connection |
| Priority | 0 |

#### Deployment Constraints

##### Hosting

| Title | Hosting |
| --- | --- |
| Description | The system shall be deployed using cloud-based hosting solutions |
| Priority | 1 |

#### Transition & Support Constraints

##### Future Expansion

| Title | Future Expansion |
| --- | --- |
| Description | The system shall be designed with modular components for easy updates |
| Priority | 2 |

#### Budget & Schedule Constraints

##### Timeline

| Title | Timeline |
| --- | --- |
| Description | The system shall adhere to the project schedule outlined in the proposal |
| Priority | 1 |

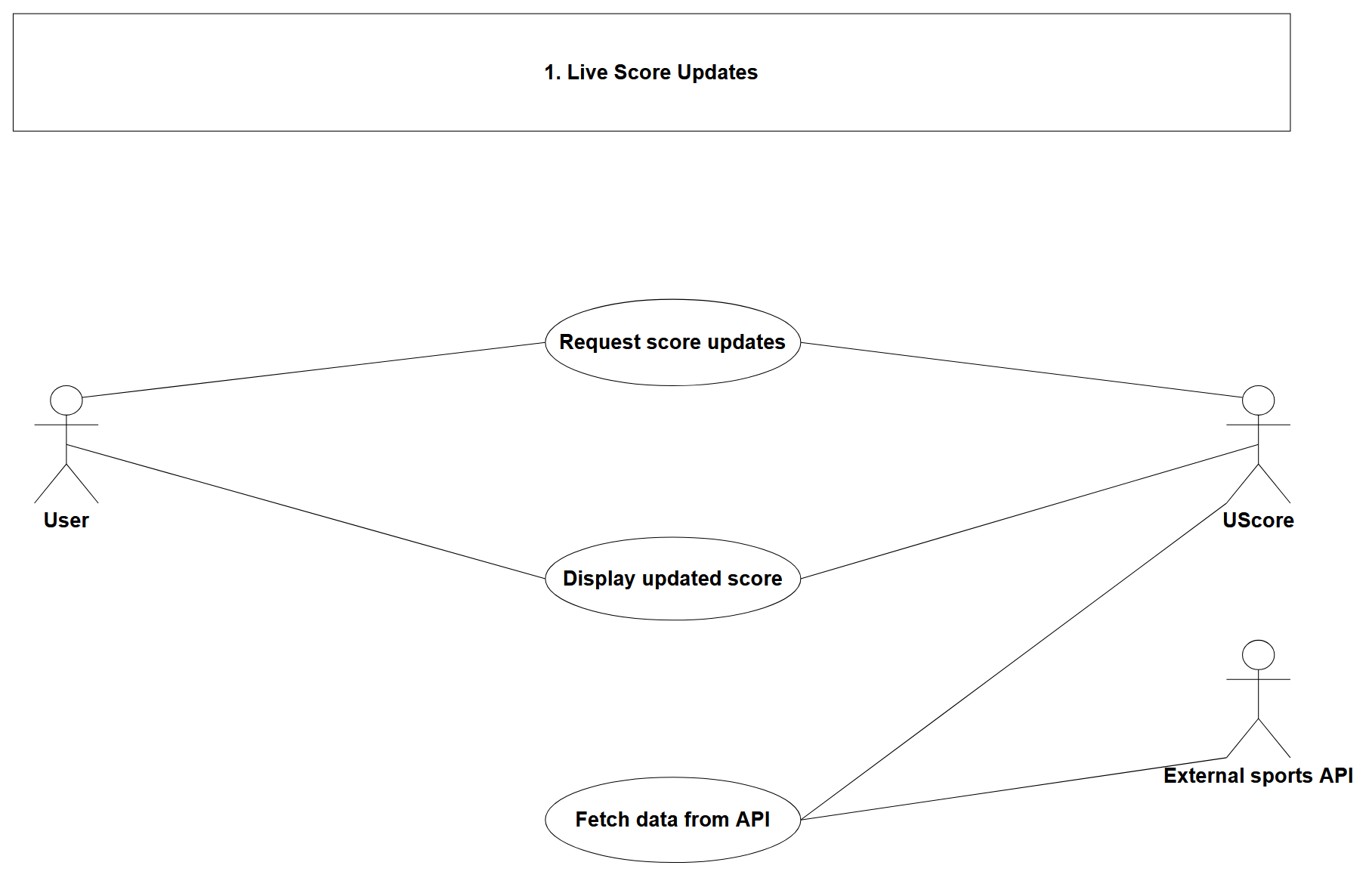
#### Miscellaneous Constraints

##### Complianc**e**

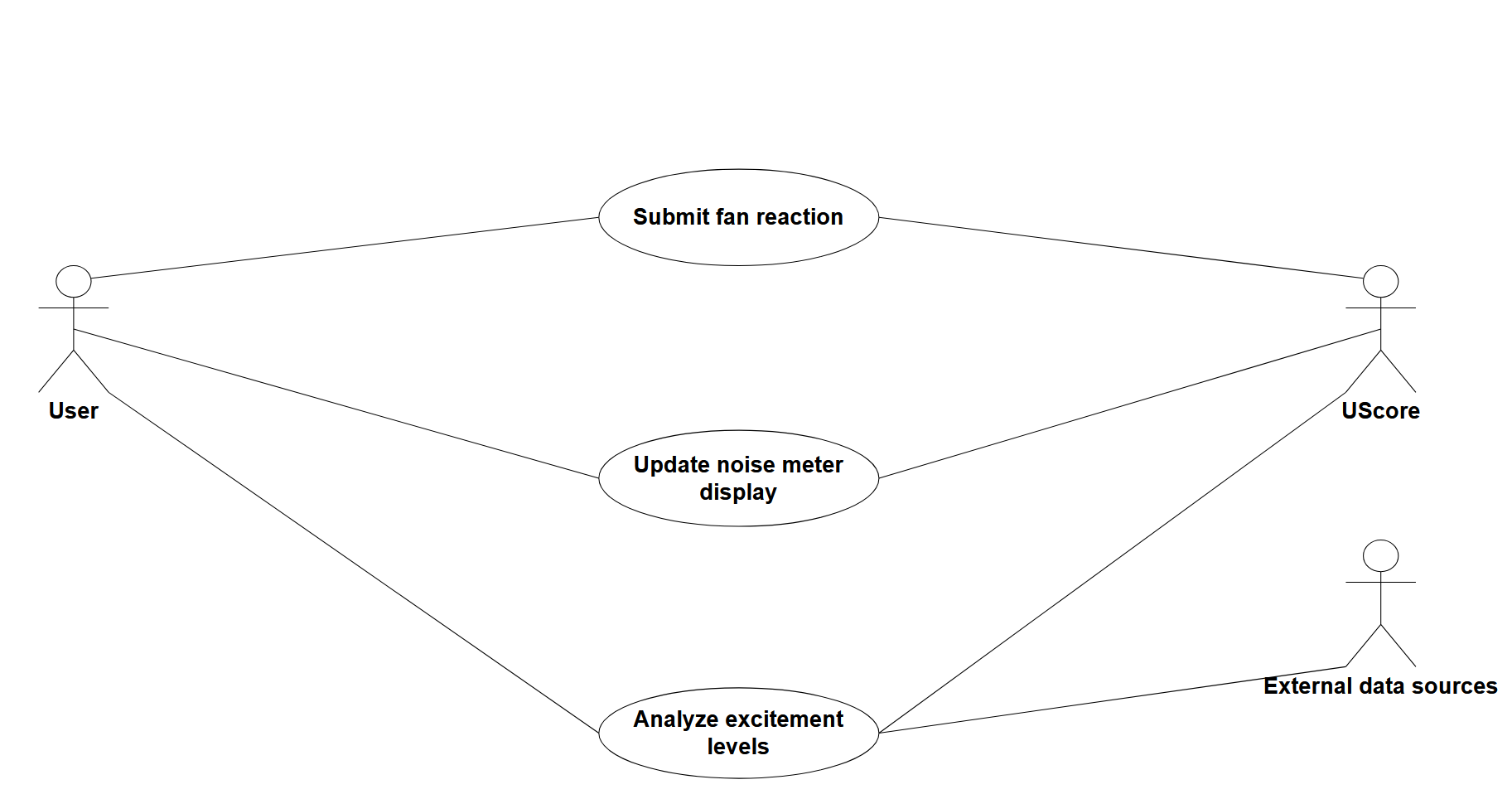
| Title | Compliance |
| --- | --- |
| Description | The system shall comply with legal regulations regarding user data protection |
| Priority | 1 |

### Requirements Modeling

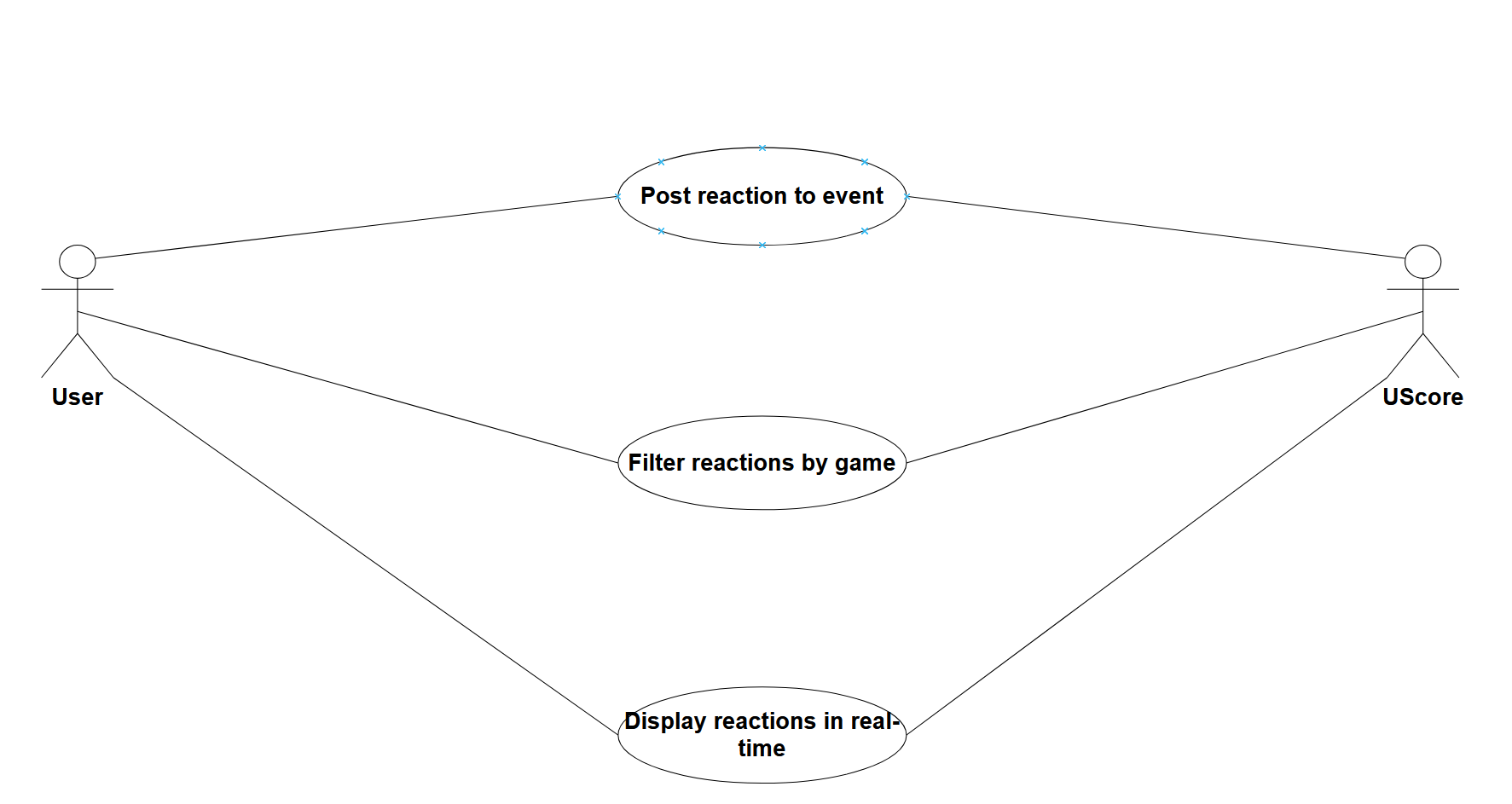
##### Live Score Updates



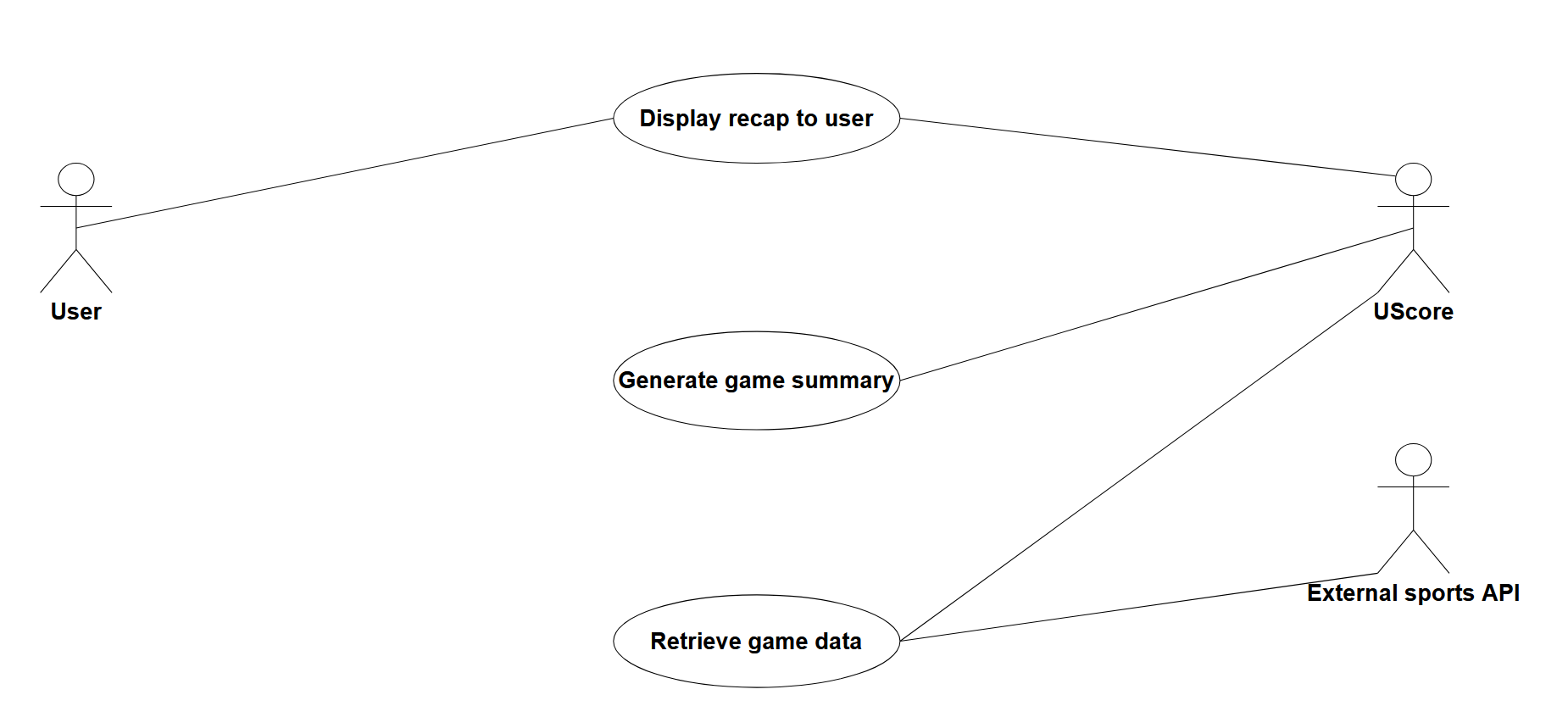
##### Noise Meter



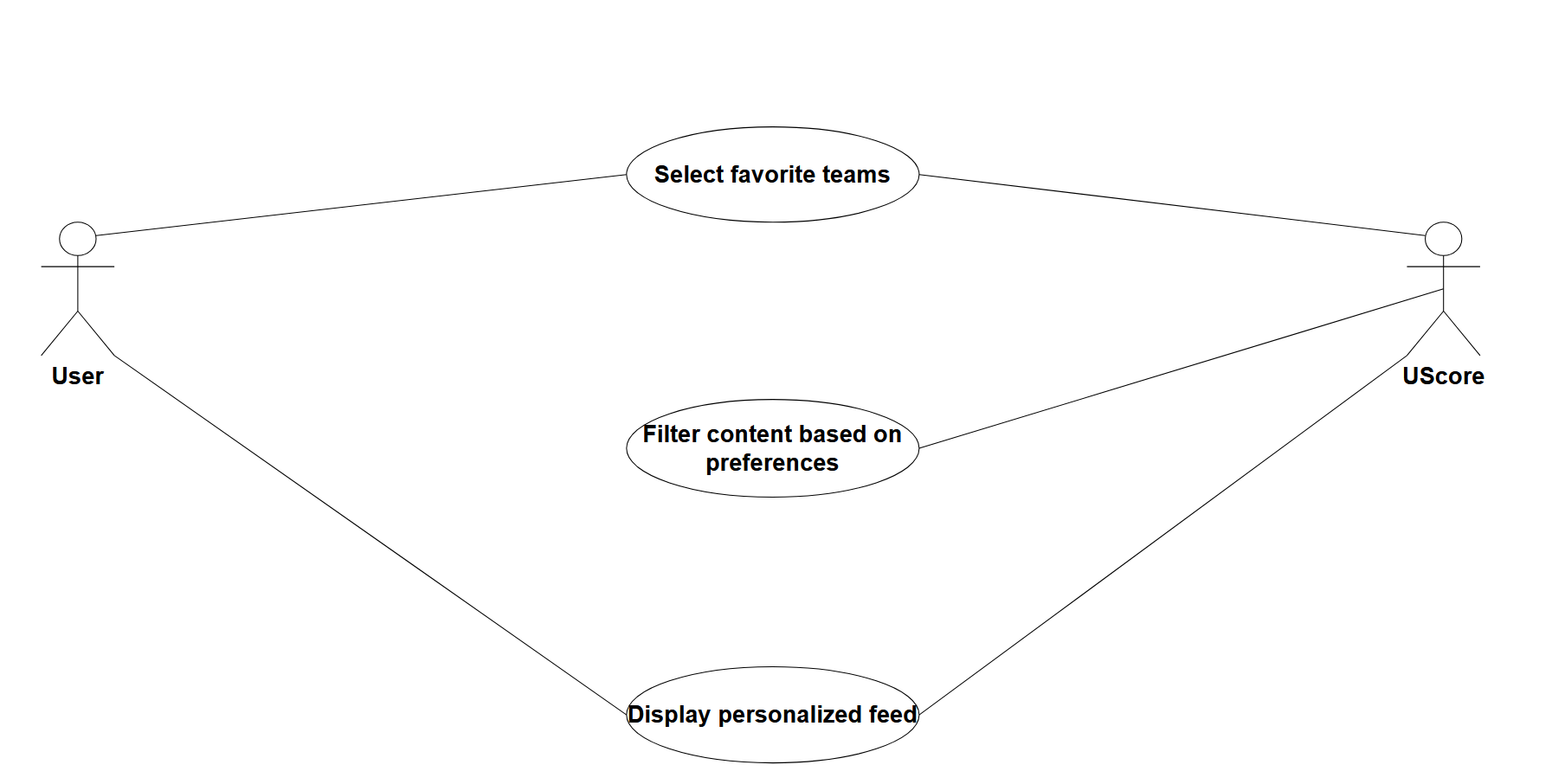
##### Quick-Reaction Chat System



##### Game Recaps



##### Customizable Feeds



### Evolutionary Requirements

#### Functional Requirements

##### Future Features

| Title | Future Features |
| --- | --- |
| Description | The system shall be designed to incorporate AI-based game predictions |
| Priority | 3 |
| Precondition(s) | Stable real-time data available |
| Postconditions(s) | Predictive insights displayed to users |
| Use Case Diagram | N/A |

#### Non-Functional Requirements

##### Scalability Improvements

| Title | Scalability Improvements |
| --- | --- |
| Description | The system shall increase server capacity dynamically based on demand |
| Priority | 2 |
| Applicable FR(s) | All Functional Requirements |