

Module Interface Specification for Sandlot

Team 29

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January 15, 2025

1 Revision History

Date	Version	Notes
January 13, 2025	1.0	TA Feedback
January 15, 2025	1.1	Rev0

2 Symbols, Abbreviations and Acronyms

See SRS Documentation at [\[give url —SS\]](#)

[\[Also add any additional symbols, abbreviations or acronyms —SS\]](#)

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3 Introduction

The following document details the Module Interface Specifications for the implemented modules in a platform designed to organize a seasonal softball league. It is intended to ease navigation through the platform for design and maintenance purposes.

Complementary documents include the System Requirement Specifications and Module Guide. The full documentation and implementation can be found at ... [\[provide the url for your repo —SS\]](#)

4 Notation

[\[You should describe your notation. You can use what is below as a starting point. —SS\]](#)

The structure of the MIS for modules comes from [?](#), with the addition that template modules have been adapted from [?](#). The mathematical notation comes from Chapter 3 of [?](#). For instance, the symbol $:=$ is used for a multiple assignment statement and conditional rules follow the form $(c_1 \Rightarrow r_1 | c_2 \Rightarrow r_2 | \dots | c_n \Rightarrow r_n)$.

The following table summarizes the primitive data types used by Sandlot.

Data Type	Notation	Description
character	char	a single symbol or digit
integer	\mathbb{Z}	a number without a fractional component in $(-\infty, \infty)$
natural number	\mathbb{N}	a number without a fractional component in $[1, \infty)$
real	\mathbb{R}	any number in $(-\infty, \infty)$

The specification of Sandlot uses some derived data types: sequences, strings, and tuples. Sequences are lists filled with elements of the same data type. Strings are sequences of characters. Tuples contain a list of values, potentially of different types. In addition, Sandlot uses functions, which are defined by the data types of their inputs and outputs. Local functions are described by giving their type signature followed by their specification.

5 Module Decomposition

The following table is taken directly from the Module Guide document for this project.

Level 1	Level 2
Hardware-Hiding Module	
	Account Module
	Player Module
	Team Module
	Commissioner Module
	Account Structure Module
Behaviour-Hiding Module	Team Structure Module
	Schedule Structure Module
	Standings Structure Module
	Reschedule Module
	Alerts Module
	Database Module
Software Decision Module	Season Scheduler Module
	Web Application Framework Module

Table 1: Module Hierarchy

6 MIS of Account Module

[You can reference SRS labels, such as R??. —SS]

[It is also possible to use L^AT_EX for hypperlinks to external documents. —SS]

6.1 Module

[Short name for the module —SS]

6.2 Uses

6.3 Syntax

6.3.1 Exported Constants

6.3.2 Exported Access Programs

Name	In	Out	Exceptions
[accessProg —SS]	-	-	-

6.4 Semantics

6.4.1 State Variables

[Not all modules will have state variables. State variables give the module a memory. —SS]

6.4.2 Environment Variables

[This section is not necessary for all modules. Its purpose is to capture when the module has external interaction with the environment, such as for a device driver, screen interface, keyboard, file, etc. —SS]

6.4.3 Assumptions

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6.4.4 Access Routine Semantics

[accessProg —SS]():

- transition: [if appropriate —SS]
- output: [if appropriate —SS]
- exception: [if appropriate —SS]

[A module without environment variables or state variables is unlikely to have a state transition. In this case a state transition can only occur if the module is changing the state of another module. —SS]

[Modules rarely have both a transition and an output. In most cases you will have one or the other. —SS]

6.4.5 Local Functions

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7 MIS of Player Module

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7.1 Module

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7.2 Uses

7.3 Syntax

7.3.1 Exported Constants

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8.1 Module

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8.2 Uses

8.3 Syntax

8.3.1 Exported Constants

8.3.2 Exported Access Programs

Name	In	Out	Exceptions
[accessProg —SS]	-	-	-

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9.1 Module

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9.2 Uses

9.3 Syntax

9.3.1 Exported Constants

9.3.2 Exported Access Programs

Name	In	Out	Exceptions
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10 MIS of Account Structure Module

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10.1 Module

[Short name for the module —SS]

10.2 Uses

10.3 Syntax

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11.2 Uses

11.3 Syntax

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Name	In	Out	Exceptions
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12.1 Module

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12.2 Uses

12.3 Syntax

12.3.1 Exported Constants

12.3.2 Exported Access Programs

Name	In	Out	Exceptions
[accessProg —SS]	-	-	-

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13 MIS of Standings Structure Module

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13.1 Module

[Short name for the module —SS]

13.2 Uses

13.3 Syntax

13.3.1 Exported Constants

13.3.2 Exported Access Programs

Name	In	Out	Exceptions
[accessProg —SS]	-	-	-

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14 MIS of Reschedule Module

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14.1 Module

[Short name for the module —SS]

14.2 Uses

14.3 Syntax

14.3.1 Exported Constants

14.3.2 Exported Access Programs

Name	In	Out	Exceptions
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15 MIS of Alerts Module

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15.1 Module

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15.2 Uses

15.3 Syntax

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16 MIS of Database Module

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16.1 Module

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16.2 Uses

16.3 Syntax

16.3.1 Exported Constants

16.3.2 Exported Access Programs

Name	In	Out	Exceptions
[accessProg —SS]	-	-	-

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17 MIS of Season Scheduler Module

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17.1 Module

[Short name for the module —SS]

17.2 Uses

17.3 Syntax

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Name	In	Out	Exceptions
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18 MIS of Web Application Framework Module

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- output: [if appropriate —SS]
- exception: [if appropriate —SS]

[A module without environment variables or state variables is unlikely to have a state transition. In this case a state transition can only occur if the module is changing the state of another module. —SS]

[Modules rarely have both a transition and an output. In most cases you will have one or the other. —SS]

18.4.5 Local Functions

[As appropriate —SS] [These functions are for the purpose of specification. They are not necessarily something that is going to be implemented explicitly. Even if they are implemented, they are not exported; they only have local scope. —SS]

19 Appendix

[Extra information if required —SS]

Appendix — Reflection

[Not required for CAS 741 projects —SS]

The information in this section will be used to evaluate the team members on the graduate attribute of Problem Analysis and Design.

The purpose of reflection questions is to give you a chance to assess your own learning and that of your group as a whole, and to find ways to improve in the future. Reflection is an important part of the learning process. Reflection is also an essential component of a successful software development process.

Reflections are most interesting and useful when they're honest, even if the stories they tell are imperfect. You will be marked based on your depth of thought and analysis, and not based on the content of the reflections themselves. Thus, for full marks we encourage you to answer openly and honestly and to avoid simply writing “what you think the evaluator wants to hear.”

Please answer the following questions. Some questions can be answered on the team level, but where appropriate, each team member should write their own response:

1. What went well while writing this deliverable?
2. What pain points did you experience during this deliverable, and how did you resolve them?
3. Which of your design decisions stemmed from speaking to your client(s) or a proxy (e.g. your peers, stakeholders, potential users)? For those that were not, why, and where did they come from?
4. While creating the design doc, what parts of your other documents (e.g. requirements, hazard analysis, etc), if any, needed to be changed, and why?
5. What are the limitations of your solution? Put another way, given unlimited resources, what could you do to make the project better? (LO_ProbSolutions)
6. Give a brief overview of other design solutions you considered. What are the benefits and tradeoffs of those other designs compared with the chosen design? From all the potential options, why did you select the documented design? (LO_Explores)