

Module Interface Specification for Sandlot

Team 29

Nicholas Fabugais-Inaba

Casra Ghazanfari

Alex Verity

Jung Woo Lee

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 [\[give url —SS\]](#)

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

Contents

1	Revision History	i
2	Symbols, Abbreviations and Acronyms	ii
3	Introduction	1
4	Notation	1
5	Module Decomposition	1
6	MIS of Account Module	3
6.1	Module	3
6.2	Uses	3
6.3	Syntax	3
6.3.1	Exported Constants	3
6.3.2	Exported Access Programs	3
6.4	Semantics	3
6.4.1	State Variables	3
6.4.2	Environment Variables	3
6.4.3	Assumptions	3
6.4.4	Access Routine Semantics	3
6.4.5	Local Functions	4
7	MIS of Player Module	5
7.1	Module	5
7.2	Uses	5
7.3	Syntax	5
7.3.1	Exported Constants	5
7.3.2	Exported Access Programs	5
7.4	Semantics	5
7.4.1	State Variables	5
7.4.2	Environment Variables	5
7.4.3	Assumptions	5
7.4.4	Access Routine Semantics	5
7.4.5	Local Functions	6
8	MIS of Team Module	7
8.1	Module	7
8.2	Uses	7
8.3	Syntax	7
8.3.1	Exported Constants	7
8.3.2	Exported Access Programs	7

8.4	Semantics	7
8.4.1	State Variables	7
8.4.2	Environment Variables	7
8.4.3	Assumptions	7
8.4.4	Access Routine Semantics	7
8.4.5	Local Functions	8
9	MIS of Commissioner Module	9
9.1	Module	9
9.2	Uses	9
9.3	Syntax	9
9.3.1	Exported Constants	9
9.3.2	Exported Access Programs	9
9.4	Semantics	9
9.4.1	State Variables	9
9.4.2	Environment Variables	9
9.4.3	Assumptions	9
9.4.4	Access Routine Semantics	9
9.4.5	Local Functions	10
10	MIS of Account Structure Module	11
10.1	Module	11
10.2	Uses	11
10.3	Syntax	11
10.3.1	Exported Constants	11
10.3.2	Exported Access Programs	11
10.4	Semantics	11
10.4.1	State Variables	11
10.4.2	Environment Variables	11
10.4.3	Assumptions	11
10.4.4	Access Routine Semantics	11
10.4.5	Local Functions	12
11	MIS of Team Structure Module	13
11.1	Module	13
11.2	Uses	13
11.3	Syntax	13
11.3.1	Exported Constants	13
11.3.2	Exported Access Programs	13
11.4	Semantics	13
11.4.1	State Variables	13
11.4.2	Environment Variables	13
11.4.3	Assumptions	13

11.4.4	Access Routine Semantics	13
11.4.5	Local Functions	14
12	MIS of Schedule Structure Module	15
12.1	Module	15
12.2	Uses	15
12.3	Syntax	15
12.3.1	Exported Constants	15
12.3.2	Exported Access Programs	15
12.4	Semantics	15
12.4.1	State Variables	15
12.4.2	Environment Variables	15
12.4.3	Assumptions	15
12.4.4	Access Routine Semantics	15
12.4.5	Local Functions	16
13	MIS of Standings Structure Module	17
13.1	Module	17
13.2	Uses	17
13.3	Syntax	17
13.3.1	Exported Constants	17
13.3.2	Exported Access Programs	17
13.4	Semantics	17
13.4.1	State Variables	17
13.4.2	Environment Variables	17
13.4.3	Assumptions	17
13.4.4	Access Routine Semantics	17
13.4.5	Local Functions	18
14	MIS of Reschedule Module	19
14.1	Module	19
14.2	Uses	19
14.3	Syntax	19
14.3.1	Exported Constants	19
14.3.2	Exported Access Programs	19
14.4	Semantics	19
14.4.1	State Variables	19
14.4.2	Environment Variables	19
14.4.3	Assumptions	19
14.4.4	Access Routine Semantics	19
14.4.5	Local Functions	20

15 MIS of Alerts Module	21
15.1 Module	21
15.2 Uses	21
15.3 Syntax	21
15.3.1 Exported Constants	21
15.3.2 Exported Access Programs	21
15.4 Semantics	21
15.4.1 State Variables	21
15.4.2 Environment Variables	21
15.4.3 Assumptions	21
15.4.4 Access Routine Semantics	21
15.4.5 Local Functions	22
16 MIS of Database Module	23
16.1 Module	23
16.2 Uses	23
16.3 Syntax	23
16.3.1 Exported Constants	23
16.3.2 Exported Access Programs	23
16.4 Semantics	23
16.4.1 State Variables	23
16.4.2 Environment Variables	23
16.4.3 Assumptions	23
16.4.4 Access Routine Semantics	23
16.4.5 Local Functions	24
17 MIS of Season Scheduler Module	25
17.1 Module	25
17.2 Uses	25
17.3 Syntax	25
17.3.1 Exported Constants	25
17.3.2 Exported Access Programs	25
17.4 Semantics	25
17.4.1 State Variables	25
17.4.2 Environment Variables	25
17.4.3 Assumptions	25
17.4.4 Access Routine Semantics	25
17.4.5 Local Functions	26
18 MIS of Web Application Framework Module	27
18.1 Module	27
18.2 Uses	27
18.3 Syntax	27

18.3.1	Exported Constants	27
18.3.2	Exported Access Programs	27
18.4	Semantics	27
18.4.1	State Variables	27
18.4.2	Environment Variables	27
18.4.3	Assumptions	27
18.4.4	Access Routine Semantics	27
18.4.5	Local Functions	28
19	Appendix	29

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

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

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

[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]

7 MIS of Player 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]

7.1 Module

[Short name for the module —SS]

7.2 Uses

7.3 Syntax

7.3.1 Exported Constants

7.3.2 Exported Access Programs

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

7.4 Semantics

7.4.1 State Variables

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

7.4.2 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]

7.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

7.4.4 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]

7.4.5 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]

8 MIS of Team Module

[Use labels for cross-referencing —SS]

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

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

8.1 Module

[Short name for the module —SS]

8.2 Uses

8.3 Syntax

8.3.1 Exported Constants

8.3.2 Exported Access Programs

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

8.4 Semantics

8.4.1 State Variables

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

8.4.2 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]

8.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

8.4.4 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]

8.4.5 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]

9 MIS of Commissioner 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]

9.1 Module

[Short name for the module —SS]

9.2 Uses

9.3 Syntax

9.3.1 Exported Constants

9.3.2 Exported Access Programs

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

9.4 Semantics

9.4.1 State Variables

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

9.4.2 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]

9.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

9.4.4 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]

9.4.5 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]

10 MIS of Account Structure 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]

10.1 Module

[Short name for the module —SS]

10.2 Uses

10.3 Syntax

10.3.1 Exported Constants

10.3.2 Exported Access Programs

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

10.4 Semantics

10.4.1 State Variables

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

10.4.2 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]

10.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

10.4.4 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]

10.4.5 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]

11 MIS of Team Structure Module

[Use labels for cross-referencing —SS]

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

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

11.1 Module

[Short name for the module —SS]

11.2 Uses

11.3 Syntax

11.3.1 Exported Constants

11.3.2 Exported Access Programs

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

11.4 Semantics

11.4.1 State Variables

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

11.4.2 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]

11.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

11.4.4 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]

11.4.5 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]

12 MIS of Schedule Structure Module

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

[It is also possible to use \LaTeX for hypperlinks to external documents. —SS]

12.1 Module

[Short name for the module —SS]

12.2 Uses

12.3 Syntax

12.3.1 Exported Constants

12.3.2 Exported Access Programs

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

12.4 Semantics

12.4.1 State Variables

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

12.4.2 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]

12.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

12.4.4 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]

12.4.5 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]

13 MIS of Standings Structure 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]

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]	-	-	-

13.4 Semantics

13.4.1 State Variables

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

13.4.2 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]

13.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

13.4.4 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]

13.4.5 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]

14 MIS of Reschedule Module

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

[It is also possible to use \LaTeX for hypperlinks to external documents. —SS]

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
[accessProg —SS]	-	-	-

14.4 Semantics

14.4.1 State Variables

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

14.4.2 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]

14.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

14.4.4 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]

14.4.5 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]

15 MIS of Alerts 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]

15.1 Module

[Short name for the module —SS]

15.2 Uses

15.3 Syntax

15.3.1 Exported Constants

15.3.2 Exported Access Programs

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

15.4 Semantics

15.4.1 State Variables

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

15.4.2 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]

15.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

15.4.4 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]

15.4.5 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]

16 MIS of Database 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]

16.1 Module

[Short name for the module —SS]

16.2 Uses

16.3 Syntax

16.3.1 Exported Constants

16.3.2 Exported Access Programs

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

16.4 Semantics

16.4.1 State Variables

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

16.4.2 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]

16.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

16.4.4 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]

16.4.5 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]

17 MIS of Season Scheduler 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]

17.1 Module

[Short name for the module —SS]

17.2 Uses

17.3 Syntax

17.3.1 Exported Constants

17.3.2 Exported Access Programs

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

17.4 Semantics

17.4.1 State Variables

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

17.4.2 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]

17.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

17.4.4 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]

17.4.5 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]

18 MIS of Web Application Framework 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]

18.1 Module

[Short name for the module —SS]

18.2 Uses

18.3 Syntax

18.3.1 Exported Constants

18.3.2 Exported Access Programs

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

18.4 Semantics

18.4.1 State Variables

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

18.4.2 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]

18.4.3 Assumptions

[Try to minimize assumptions and anticipate programmer errors via exceptions, but for practical purposes assumptions are sometimes appropriate. —SS]

18.4.4 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]

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)