

Object Model

Class Hub



Release: 1.0

Version: 1.1

Date: 12/01/17

Responsible Analyst: Matthew Del Fante

E-mail: matthew.delfante@oit.edu

Signatory Page

Professor:

Signature (Calvin Caldwell)

Date

Analyst:

Matthew Del Fante

Signature (Matthew Del Fante)

11/08/17

Date

Revision History

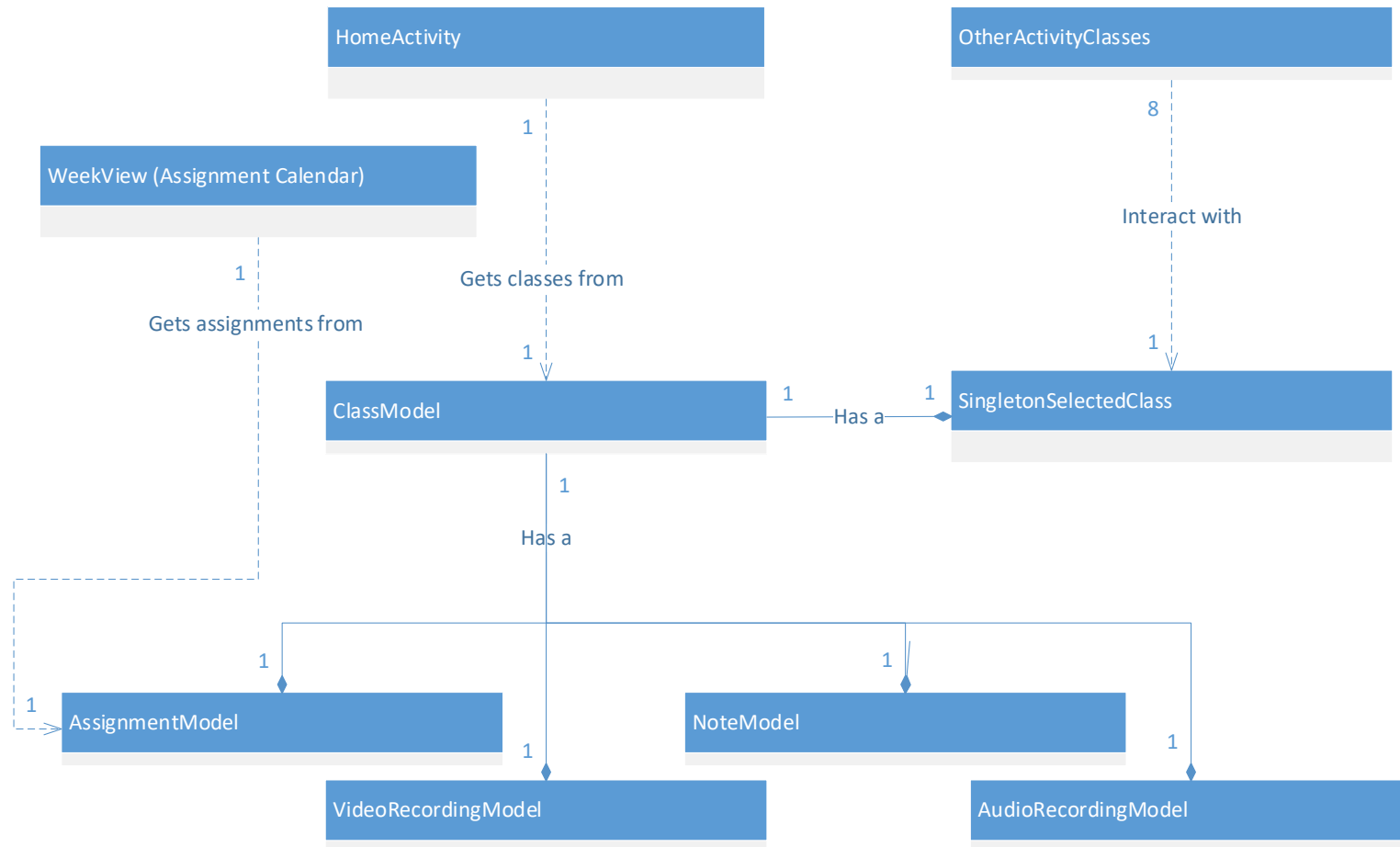
Author	Company	Version	Date	Filename	Comments
Matthew Del Fante	Delware	1.0	11/08/17	ObjectModel.doc	Initial draft.
Matthew Del Fante	Delware	1.1	12/01/17	ObjectModel.doc	Added getAssignments() method to the AssignmentModel class.

Contents

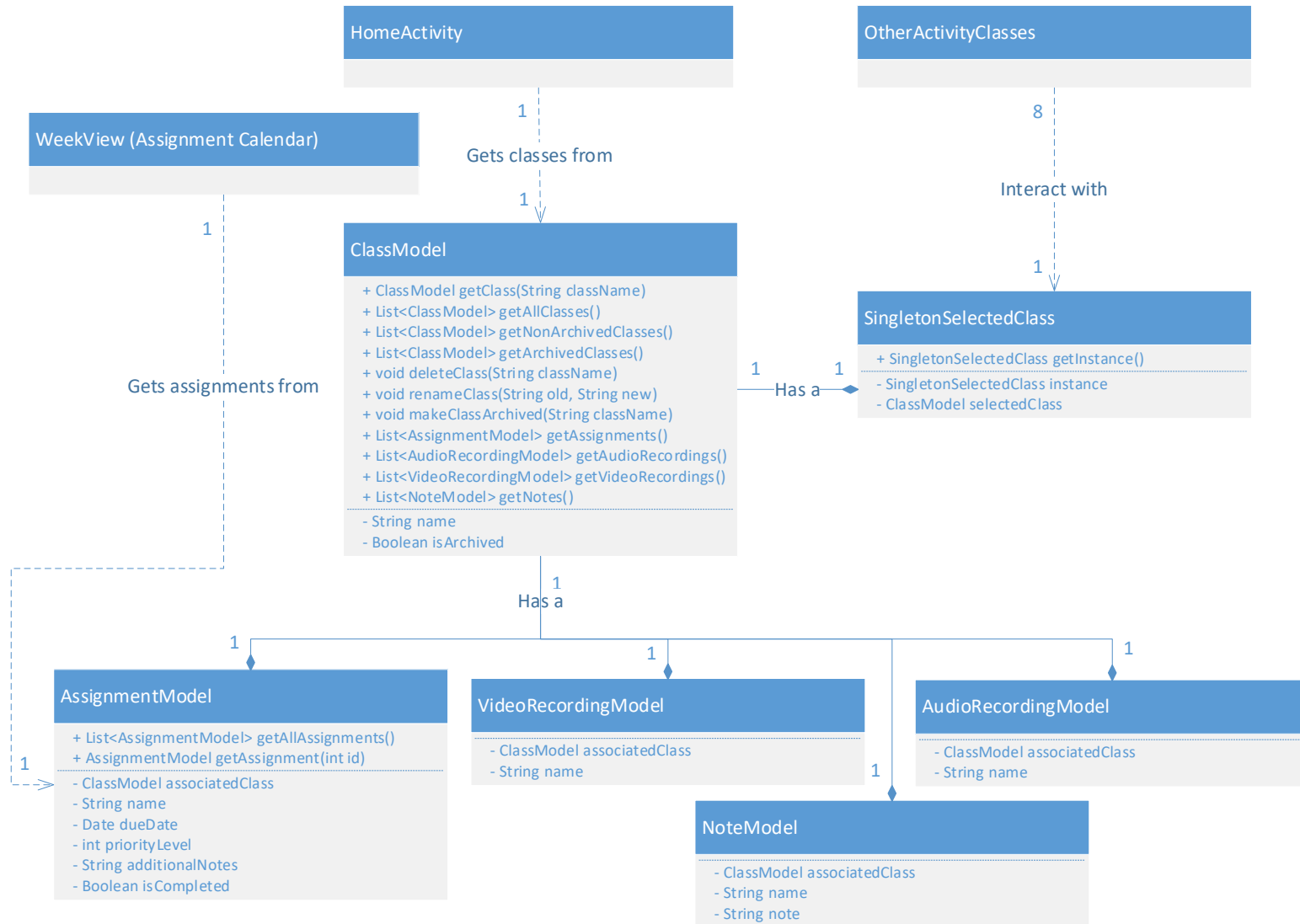
Signatory Page	ii
Revision History	iii
Class Diagrams	5
Executive	5
Detailed.....	6
Class Specifications	7
Class Specifications Introduction.....	7
CS 01.....	7
CS 02.....	9
CS 03.....	10
CS 04.....	12
CS 05.....	14
CS 06.....	15

Class Diagrams

Executive



Detailed



Class Specifications

Class Specifications Introduction

Below is important information about certain classes within the ClassHub application:

1. All classes that end with the word “Model” are ORM (Object Relational Mapper) classes. This implies that those classes represent tables in the database and are responsible for updating the database and pulling information from the database.
2. A major exception for all Model classes occurs if the user attempts to store more bytes of data than the database allows. If this occurs, the class will throw an exception and it is expected that the exception will be caught in the calling function.
3. The application is single threaded so there will never be any concurrency issues with any of the application’s classes.
4. The WeekView (Assignment Calendar) class will not have a Class Specification written for it since it is a third party library class.
5. None of the Activity classes will have Class Specifications written for them since those classes are mainly UI related.

CS 01

Class Information		
Class Name: AssignmentModel		
Abstract Type: No		Persistence: Yes

Trace-ability Information		
Use Case ID	Use Case Name	Steps
UC 01	Add Assignment 01	8
UC 07	Delete Assignment 01	6, 11
UC 12	Edit Assignment 01	6, 10
UC 15	MAAC 01	8, 9
UC 21	View Assignment 01	6
UC 24	VAIAC 01	3
UC 25	TAIAC 01	3

Public Methods		
Signature	Preconditions	Post Conditions
public static List<AssignmentModel> getAllAssignments()	None.	Returns a list of all AssignmentModels in the database. This method is used by the Assignment Calendar so it can add assignments as entries into the calendar.
public int AssignmentModel getAssignment(int id)	None.	Returns an AssignmentModel from the database that has a primary key with the same value as the passed parameter.

Protected Methods		
Signature	Preconditions	Post Conditions
None.		

Private Methods		
Signature	Preconditions	Post Conditions
None.		

Attributes					
Name	Type	Object (Y/N)	Instance/Static	Visibility	Description
associatedClass	ClassModel	Y	Instance	Private	The ClassModel the assignment belongs to. This class is an ORM class so the associatedClass essentially acts as a foreign key to the ClassModel that the assignment belongs to.
name	String	Y	Instance	Private	The name of the assignment.
dueDate	Date	Y	Instance	Private	The date/time that an assignment is due.
priorityLevel	Int	Y	Instance	Private	The priority level of the assignment
isCompleted	Boolean	Y	Instance	Private	A flag determining whether an assignment is completed or not. True if completed, false if not.
additionalNotes	String	Y	Instance	Private	Notes about the assignment.

Concurrency	
Threading Issue	Description
None.	

Major Exceptions		
Name	Trigger	Action
See Class Specifications Introduction.		

Instance Information			
Minimum	Maximum	Mean	Fixed
0	∞	30	

General Comments		
Author	Date	Comment
Matt Del Fante	11/6/17	This class can retrieve all assignments with the static method getAllAssignments(). However, instances of this class represent a single assignment.

CS 02

Class Information		
Class Name: AudioRecordingModel		
Abstract Type: No		Persistence: Yes

Trace-ability Information		
Use Case ID	Use Case Name	Steps
UC 02	Add Audio Recording 01	11
UC 08	Delete Audio Recording 01	8, 13
UC 14	Listen to Audio 01	8, 11
UC 16	Rename Audio Recording 01	8, 13

Public Methods		
Signature	Preconditions	Post Conditions
N/A		

Protected Methods		
Signature	Preconditions	Post Conditions
None.		

Private Methods		
Signature	Preconditions	Post Conditions
None.		

Attributes					
Name	Type	Object (Y/N)	Instance/ Static	Visibility	Description
associatedClass	ClassModel	Y	Instance	Private	The ClassModel the audio recording belongs to. This class is an ORM class so the associatedClass essentially acts as a foreign key to the ClassModel that the audio recording belongs to.
name	String	Y	Instance	Private	The name of the audio recording.

Concurrency	
Threading Issue	Description
None.	

Major Exceptions		
Name	Trigger	Action
See Class Specifications Introduction.		

Instance Information			
Minimum	Maximum	Mean	Fixed
0	∞	10	

General Comments		
Author	Date	Comment
Matt Del Fante	11/3/17	The audio recording itself will not be saved to the database. The audio recording will be saved in a file within the file structure of the project.
Matt Del Fante	11/06/17	Instances of this class represent a single audio recording.

CS 03

Class Information	
Class Name: ClassModel	
Abstract Type: No	Persistence: Yes

Trace-ability Information		
Use Case ID	Use Case Name	Steps
UC 01	Add Assignment 01	2, 8
UC 02	Add Audio Recording 01	2, 11
UC 03	Add Class 01	6
UC 04	Add Notes 01	2, 10
UC 05	Add Video Recording 01	2, 11
UC 06	Archive Class 01	5
UC 07	Delete Assignment 01	2, 6, 11
UC 08	Delete Audio Recording 01	2, 8, 13
UC 09	Delete Class 01	7
UC 10	Delete Note 01	2, 8, 13
UC 11	Delete Video Recording 01	2, 8, 13
UC 12	Edit Assignment 01	2, 6, 10
UC 13	Edit Notes 01	2, 8, 14
UC 14	Listen to Audio 01	2, 8
UC 15	MAAC 01	2, 6, 9
UC 16	Rename Audio Recording 01	2, 8, 13
UC 17	Rename Class 01	7
UC 18	Rename Note 01	2, 8, 13
UC 19	Rename Video Recording 01	2, 8, 13

UC 20	Retrieve Archived Classes 01	5
UC 21	View Assignment 01	2
UC 22	View Notes 01	2, 8
UC 23	Watch Video Recording 01	2, 8
UC 25	TAIAC 01	5

Public Methods		
Signature	Preconditions	Post Conditions
public static ClassModel getClass(String className)	The ClassModel named className exists in the database.	Returns the ClassModel object from the database with the name className.
public static List<ClassModel> getAllClasses()	None.	Returns a list of all the ClassModel objects in the database.
public static List<ClassModel> getNonArcivedClasses()	None.	Returns a list of ClassModel objects whose isArchived attribute is false from the database.
public static List<ClassModel> getArchivedClasses()	None.	Returns a list of ClassModel objects whose isArchived attribute is true from the database.
public static void deleteClass(String className)	The ClassModel named className exists in the database.	Deletes the ClassModel named className from the database.
public static void renameClass(String old, String new)	The ClassModel named old exists in the database.	Updates the database so that the ClassModel named old is updated to have the name new.
public static void makeClassArchived(String className)	The ClassModel named className exists in the database.	Updates the database so that className's isArchived attribute is true.
public List<AssignmentModel> getAssignments()	None.	Returns a list of AssignmentModel objects from the database that belongs to the particular ClassModel instance.
public List<AudioRecordingModel> getAudioRecordings()	None.	Returns a list of AudioRecordingModel objects from the database that belongs to the particular ClassModel instance.
public List<VideoRecordingModel> getVideoRecordings()	None.	Returns a list of VideoRecordingModel objects from the database that belongs to the particular ClassModel instance.
public List<NoteModel> getNotes()	None.	Returns a list of Note objects from the database that belongs to the particular ClassModel instance.

Protected Methods		
Signature	Preconditions	Post Conditions
None.		

Private Methods		
Signature	Preconditions	Post Conditions
None.		

Attributes					
Name	Type	Object (Y/N)	Instance/ Static	Visibility	Description
name	String	Y	Instance	Private	The name of the class.

isArchived	Boolean	Y	Instance	Private	Determines if a class is "archived" or not. True if it is achieved, false if not.
------------	---------	---	----------	---------	---

Concurrency	
Threading Issue	Description
None.	

Major Exceptions		
Name	Trigger	Action
See Class Specifications Introduction.		

Instance Information			
Minimum	Maximum	Mean	Fixed
0	∞	12	

General Comments		
Author	Date	Comment
Matt Del Fante	11/6/17	This class can retrieve all ClassModels with the static method getAllClasses(). However, instances of this class represent a single class.

CS 04

Class Information
Class Name: NoteModel Abstract Type: No Persistence: Yes

Trace-ability Information		
Use Case ID	Use Case Name	Steps
UC 04	Add Notes 01	10
UC 10	Delete Note 01	8, 13
UC 13	Edit Notes 01	8, 14
UC 18	Rename Note 01	8, 13
UC 22	View Notes 01	8

Public Methods		
Signature	Preconditions	Post Conditions
N/A		

Protected Methods		
Signature	Preconditions	Post Conditions
None.		

Private Methods		
Signature	Preconditions	Post Conditions
None.		

Attributes					
Name	Type	Object (Y/N)	Instance/Static	Visibility	Description
associatedClass	ClassModel	Y	Instance	Private	The ClassModel that the note belongs to. This class is an ORM object so the associatedClass essentially acts as a foreign key to the ClassModel that the note belongs to.
name	String	Y	Instance	Private	The name of the note.
note	String	Y	Instance	Private	The note.

Concurrency	
Threading Issue	Description
None.	

Major Exceptions		
Name	Trigger	Action
See Class Specifications Introduction.		

Instance Information			
Minimum	Maximum	Mean	Fixed
0	∞	15	

General Comments		
Author	Date	Comment
None.		

CS 05

Class Information		
Class Name: SingletonSelectedClass		
Abstract Type: No	Persistence: No	

Trace-ability Information		
Use Case ID	Use Case Name	Steps
UC 01	Add Assignment 01	2, 8
UC 02	Add Audio Recording 01	2, 11
UC 04	Add Notes 01	2, 10
UC 05	Add Video Recording 01	2, 11
UC 07	Delete Assignment 01	2, 6, 11
UC 08	Delete Audio Recording 01	2, 8, 13
UC 10	Delete Note 01	2, 8, 13
UC 11	Delete Video Recording 01	2, 8, 13
UC 12	Edit Assignment 01	2, 6, 10
UC 13	Edit Notes 01	2, 8, 14
UC 14	Listen to Audio 01	2, 8
UC 15	MAAC 01	2, 6, 9
UC 16	Rename Audio Recording 01	2, 8, 13
UC 18	Rename Note 01	2, 8, 13
UC 19	Rename Video Recording 01	2, 8, 13
UC 21	View Assignment 01	2
UC 22	View Notes 01	2, 8
UC 23	Watch Video Recording 01	2, 8
UC 25	TAIAC 01	5

Public Methods		
Signature	Preconditions	Post Conditions
public static SingletonSelectedClass getInstance()	None.	If this is the first time the method is being called, the instance is newed up and returned. Else, the existing instance is returned.

Protected Methods		
Signature	Preconditions	Post Conditions
None.		

Private Methods		
Signature	Preconditions	Post Conditions
N/A		

Attributes					
Name	Type	Object (Y/N)	Instance/ Static	Visibility	Description
instance	SingletonSelectedClass	Y	Static	Private	The instance that is returned from the getInstance() function.
selectedClass	ClassModel	Y	Instance	Private	When the user selects a class to interact with, that class' ClassModel is stored in this variable. The activity classes will interact with it via the SingletonSelectedClass class.

Concurrency	
Threading Issue	Description
None.	

Major Exceptions		
Name	Trigger	Action
None.		

Instance Information			
Minimum	Maximum	Mean	Fixed
			1

General Comments		
Author	Date	Comment
Matt Del Fante	11/3/17	When the user selects a class on the HomeActivity, that class' ClassModel is stored in the selectedClass attribute. Whenever a user modifies a class' information in the app, the user is modifying that class' ClassModel via this Singleton. The ClassModel will then save those changes to the database.

CS 06

Class Information
Class Name: VideoRecordingModel Abstract Type: No Persistence: Yes

Trace-ability Information		
Use Case ID	Use Case Name	Steps
UC 05	Add Video Recording 01	11

UC 11	Delete Video Recording 01	8, 13
UC 19	Rename Video Recording 01	8, 13
UC 23	Watch Video Recording 01	8, 11

Public Methods		
Signature	Preconditions	Post Conditions
N/A		

Protected Methods		
Signature	Preconditions	Post Conditions
None.		

Private Methods		
Signature	Preconditions	Post Conditions
None.		

Attributes					
Name	Type	Object (Y/N)	Instance/Static	Visibility	Description
associatedClass	ClassModel	Y	Instance	Private	The ClassModel the video recording belongs to. This class is an ORM object so the associatedClass essentially acts as a foreign key to the ClassModel that the video recording belongs to.
Name	String	Y	Instance	Private	The name of the video recording.

Concurrency	
Threading Issue	Description
None.	

Major Exceptions		
Name	Trigger	Action
See Class Specifications Introduction.		

Instance Information			
Minimum	Maximum	Mean	Fixed
0	∞	8	

General Comments		
Author	Date	Comment
Matt Del Fante	11/3/17	The video recording itself will not be saved in the database. The video recordings will be saved in a file within the file structure of the project.