

影音管理軟體

HW# 6

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1 Requirement Document

1.1 Change History

Iteration I		
Version	Description	Date
1	Cover Page Problem Statement The Development Language	2016.2.28
2.1	Change History System Feature Use Case 1	2016.3.10
2.2	Modify Use Case 1 Add Use Case 2 & 3	2016.3.15
2.3	Add Use Case 4	2016.3.17
3.1	Domain Diagram Design	2016.3.29
4.1	Logic Architecture & SSD	2016.4.12
4.2	Contract & Operation Sequence Diagram SSD modified	2016.4.26
4.3	Class Diagram	2016.4.27
5.1	Add Initialize Seq and Destructor Seq and Implementation Class Diagram	2016.5.03
5.2	Add the difference between implementation and design and the information of source code	2016.5.05
6.1	Modify Use Case 1 and Use Case 2 Modify Domain Model Design Add SSD of Use Case 2	2016.5.17

1.2 Problem Statement

日前電視劇風靡各年齡層，每周推出的新集數與每季上映的新劇，往往令那些電視劇觀賞者眼花撩亂，也讓那些想嘗試新劇的人不知如何下手，於是我們想到利用一套軟體記錄使用者的觀賞進度與喜好程度，同時管理使用者的影集，並可利用軟體推薦使用者可能喜歡的新劇，而使用者可在自家使用任意設備、平台進行記錄。

因為電視劇眾多且集數與觀賞記錄個不同，因此使用者容易遺失自己的影集進度，也不容易清楚究竟哪些新劇符合自己的胃口，透過此軟體，在每一次觀看前便可查詢先前的進度，而觀看後做上記錄與評論，就可以避免進度的遺失，也可藉評論讓軟體歸納使用者可能喜歡的類型，進而推薦新劇給有需要的

人。

本軟體提供 GUI，讓使用者快速、簡便、直覺地操作，並記錄影集的觀看進度，也讓使用者可清楚自己喜好的類別與觀看歷史。

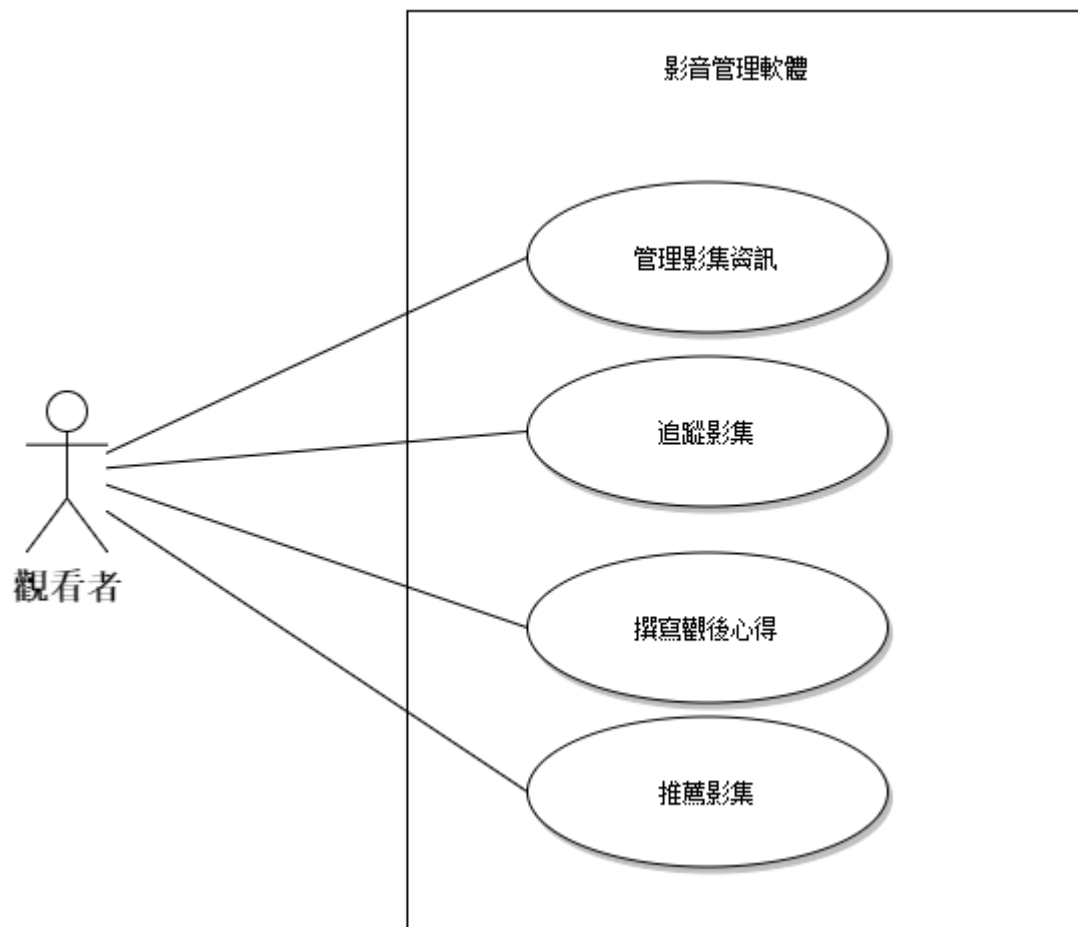
1.3 System Context Diagram



1.4 System Features

1. 管理影集資訊
2. 追蹤影集
3. 撰寫觀後心得
4. 推薦影集

1.5 Use Case Diagram



1.6 Use Case

1. Use Case 1 (New)

Use Case Name	管理影集資訊
Scope	影音管理軟體
Level	User Goal
Prime Actor	觀看者
Stakeholder and Interests	觀看者：管理影集的資訊，包含取得、新增、修改、刪除影集資訊
Preconditions	觀看者已安裝軟體
Success Guarantee	觀看者能成功管理影集資訊，並看見結果
Main Success Scenario	<ol style="list-style-type: none"> 1. 觀看者啟動軟體 2. 軟體讀取 local 的存檔 3. 軟體告訴使用者正在更新資訊 4. 軟體自 server 抓取最新資訊 5. 軟體顯示更新完成 6. 觀看者手動對影集資訊進行管理

	7. 顯示正確結果
Extensions	<p>2a. 若 local 沒有存檔，建立空的影集資訊列表</p> <p>2b. 若檔案讀取失敗，通知觀看者，檔案損毀</p> <p>4a. 沒有網路的情況下，通知觀看者，目前裝置尚未連接網路</p> <p>4b. 如果沒有新的影集資訊，通知觀看者</p> <p>6a. 若觀看者要新增影集資訊</p> <ol style="list-style-type: none"> 1. 觀看者使用新增功能 2. 觀看者輸入影集資訊 3. 觀看者完成新增 <p>6b. 若觀看者要匯入影集資訊</p> <ol style="list-style-type: none"> 1. 觀看者使用匯入功能 2. 觀看者選擇要匯入的檔案 3. 軟體完成匯入 <p>6c. 若觀看者要修改影集資訊</p> <ol style="list-style-type: none"> 1. 觀看者選擇影集並修改 2. 觀看者輸入修改的資訊 3. 觀看者完成修改 <p>6d. 若觀看者要刪除影集資訊</p> <ol style="list-style-type: none"> 1. 觀看者選擇影集並刪除 2. 軟體再次確認影集的刪除 <ol style="list-style-type: none"> 2a. 若觀看者確認刪除，軟體刪除影集資訊 <p>6e. 若觀看者要手動更新網路資訊</p> <ol style="list-style-type: none"> 1. 觀看者使用更新功能 2. 跳到步驟二 <p>7a. 若觀看者想繼續管理影音資訊，回到步驟六</p> <p>7b. 若觀看者關閉軟體，軟體把目前的影集資訊儲存到 local 中</p>
Special Requirements	NFR-01、NFR-02、NFR-03
Technology and Data Variations List	<p>網路影集資訊與私人影集資訊擁有個別的獨立編號。</p> <p>影集資訊中，包含描述與類別。</p>
Frequency of Occurrence	每次啟動後一定會發生至少一次
Open Issue	<ol style="list-style-type: none"> 1. 影集資料格式尚未決定 2. 各部影集的獨立編號產生方式尚未決定

	3. 伺服器是要租用還要自己架設 4. 匯入的資料格式尚未決定
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2. Use Case 2

Use Case Name	追蹤影集
Scope	影音管理軟體
Level	User Goal
Prime Actor	觀看者
Stakeholder and Interests	觀看者：對影集進行追蹤，包含新增追蹤的影集、修改追蹤進度、取消追蹤
Preconditions	觀看者已安裝軟體
Success Guarantee	觀看者能成功追蹤影集，並看見結果
Main Success Scenario	<ol style="list-style-type: none"> 1. 觀看者選擇影集 2. 軟體顯示影集資訊 3. 觀看者使用追蹤功能 4. 顯示正確結果
Extensions	<p>3a. 若觀看者要追蹤新的影集，軟體紀錄開始追蹤</p> <p>3b. 若觀看者要新增已追蹤的影集集數</p> <ol style="list-style-type: none"> 1. 觀看者使用新增集數功能 2. 觀看者輸入集數資訊 3. 軟體顯示該影集的集數資訊 <p>重複 2、3 步驟，直到觀看者不再新增集數</p> <p>3c. 若觀看者要修改已追蹤的影集進度</p> <ol style="list-style-type: none"> 1. 觀看者使用修改進度功能 2. 觀看者紀錄觀看的集數 <ol style="list-style-type: none"> 2a. 若集數不存在，觀看者新增集數 <ol style="list-style-type: none"> 3. 軟體要求輸入評論 <ol style="list-style-type: none"> 3a. 若觀看者取消輸入，則不新增評論 3b. 若觀看者輸入評論，則新增一筆評論 <p>3d. 若觀看者要取消已追蹤的影集</p> <ol style="list-style-type: none"> 1. 觀看者使用取消追蹤的功能 2. 軟體再去確認影集取消追蹤 <ol style="list-style-type: none"> 2a. 若觀看這確認，軟體取消影集的追蹤 <p>3e. 若觀看者要恢復已取消追蹤的影集</p> <ol style="list-style-type: none"> 1. 軟體恢復開始追蹤 2. 軟體讀取先前的集數資訊，並顯示
Special	NFR-03、NFR-01

Requirements	
Technology and Data Variations List	NA
Frequency of Occurrence	經常發生
Open Issue	NA

3. Use Case 3

Use Case Name	撰寫觀後心得
Scope	影音管理軟體
Level	User Goal
Prime Actor	觀看者
Stakeholder and Interests	觀看者：可以記錄自己的觀後心得
Preconditions	觀看者至少有一部已追蹤的影集
Success Guarantee	觀看者能成功紀錄下觀後心得
Main Success Scenario	<ol style="list-style-type: none"> 1. 觀看者選擇影集 2. 軟體顯示影集資訊 3. 觀看者開始撰寫心得 4. 軟體定期儲存當前的心得資訊 5. 觀看者結束心得的撰寫
Extensions	<p>3a. 若軟體發現上次沒有正確儲存的心得資料</p> <ol style="list-style-type: none"> 1. 軟體詢問觀看者是否重新載入上次的心得 <ol style="list-style-type: none"> 1a. 若觀看者確認，則軟體顯示上次心得 1b. 若觀看者取消，則軟體清除上次心得 <p>5a. 若觀看者取消心得撰寫</p> <ol style="list-style-type: none"> 1. 軟體詢問觀看者是否保留目前的心得 <ol style="list-style-type: none"> 1a. 若觀看者確認，軟體保留當前心得記錄 1b. 若觀看者取消，軟體清除定期儲存的心得資訊 <p>5b. 若觀看者完成心得</p> <ol style="list-style-type: none"> 1. 軟體詢問觀看者是否儲存心得 <ol style="list-style-type: none"> 1a. 若觀看者確認，軟體儲存並完成心得 1b. 若觀看者取消，觀看者可以繼續編輯心得
Special	NFR-03、NFR-01

Requirements	
Technology and Data Variations List	NA
Frequency of Occurrence	經常發生
Open Issue	NA

4. Use Case 4

Use Case Name	推薦影集
Scope	影音管理軟體
Level	User Goal
Prime Actor	軟體
Stakeholder and Interests	觀看者：希望可以看見軟體所推薦的影集 軟體：推薦影集給觀看者
Preconditions	觀看者可以有過去影集的追蹤紀錄
Success Guarantee	影集被推薦給觀看者
Main Success Scenario	<ol style="list-style-type: none"> 1. 觀看者使用推薦功能 2. 軟體顯示數個推薦影集 3. 觀看者對推薦影集操作
Extensions	<p>2a. 若軟體無法取得觀看者的資料</p> <ol style="list-style-type: none"> 1. 軟體通知觀看者，無法推薦影集 <p>2b. 若軟體的推薦影集皆被觀看者列入黑名單</p> <ol style="list-style-type: none"> 1. 軟體通知觀看者，無非黑名單的推薦影集 <p>3a. 若觀看者對某推薦影集有興趣</p> <ol style="list-style-type: none"> 1. 觀看者對該部影集進行追蹤 <p>3b. 若觀看者對某推薦影集不感興趣</p> <ol style="list-style-type: none"> 1. 觀看者取消推薦該影集 2. 軟體將該影集列入黑名單 <p>3c. 若觀看者希望再次推薦</p> <ol style="list-style-type: none"> 1. 觀看者使用再次推薦功能 2. 回到步驟二 <p>3d. 若觀看者不進行任何操作，直接離開</p>
Special Requirements	NFR-01、NFR-03
Technology and Data Variations List	依照影集類別，軟體一次最多推薦 5 部影集
Frequency of	偶爾發生

Occurrence	
Open Issue	NA

1.7 Non-Functional Requirement and Constraints

NFR ID	Category	Description
NFR-01	Performance	資料讀寫需要在一秒內完成
NFR-02	Performance	伺服器要在 0.5 秒內回應
NFR-03	Usability	通知要夠大夠清楚
NFR-04	Usability	UI 要足夠友善
NFR-05	Reliability	資料讀寫必須正確無誤

1.8 Glossary

Term	Definition and Information	Format	Validation Rules	Aliases
影集	以單集為播放單位而長期放映的影片			影劇、Series
集數	一部影集的最小單位			Episode

1.9 Software Environments

The program will be written in C# language with Visual Studio.

2 Domain Class Model

2.1 Domain Class Diagram Showing Only Concepts

2.1.1 Class Identified (New)

- Business Transaction : Series 、Episode 、Blacklist 、Tracing_List 、Abandoned_List
- Products : Review 、Command
- Description : Series_Description 、Episode_Description
- Catalogs : Catalog
- Collaborating System : Server 、Software 、**FileManager**

P.S. 以上為使用類別清單 (Catalog List) 所找出來的 Concepts，其中有些 Concepts 並沒有劃入 Domain Model 中。

2.1.2 Bad Class

以 Attribute 的方式取代：

Series_Description, Episode_Description, BlackList, Tracing_List, Abandoned_List

2.1.3 Good Class (New)

Series, Episode：Domain 基礎物件

Review, Command：功能之一

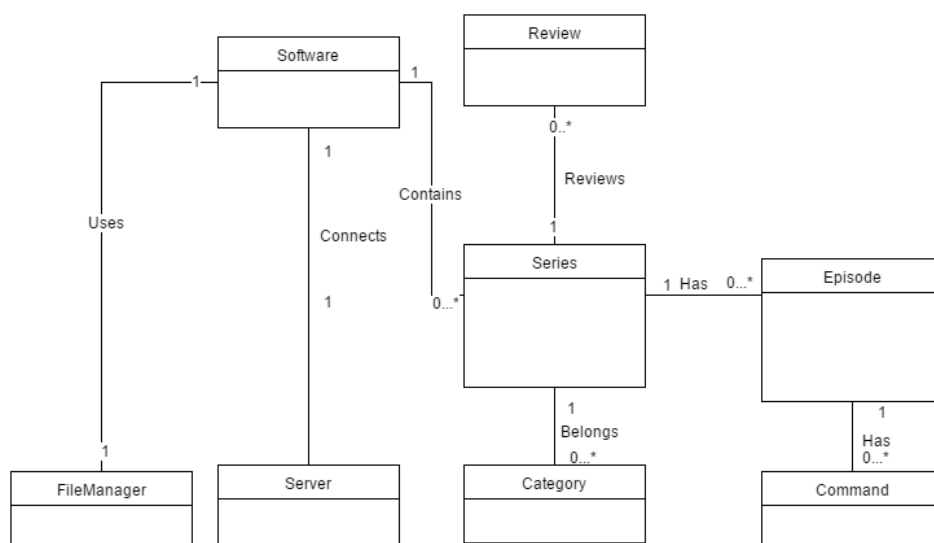
Category：分類影音的物件

Server：負責外部連結的物件

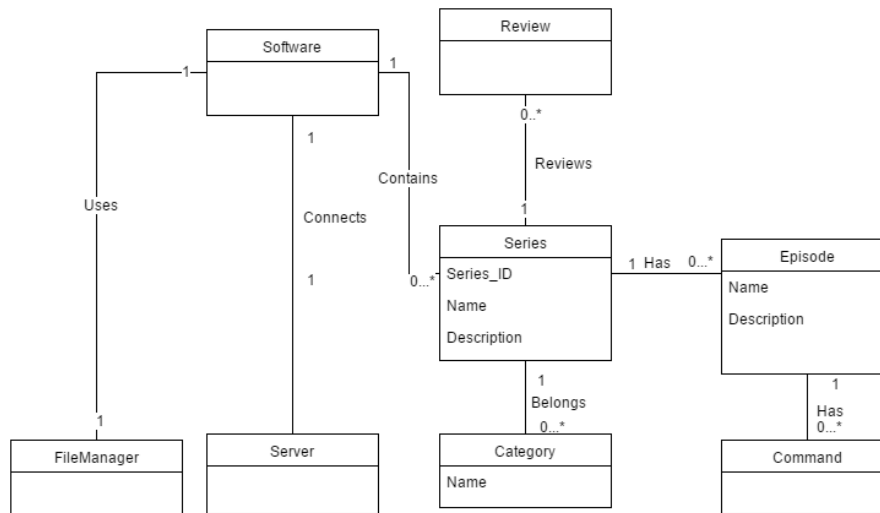
Software：Root Object

FileManager：負責管理軟體的存讀檔

2.2 Add Associations (New)

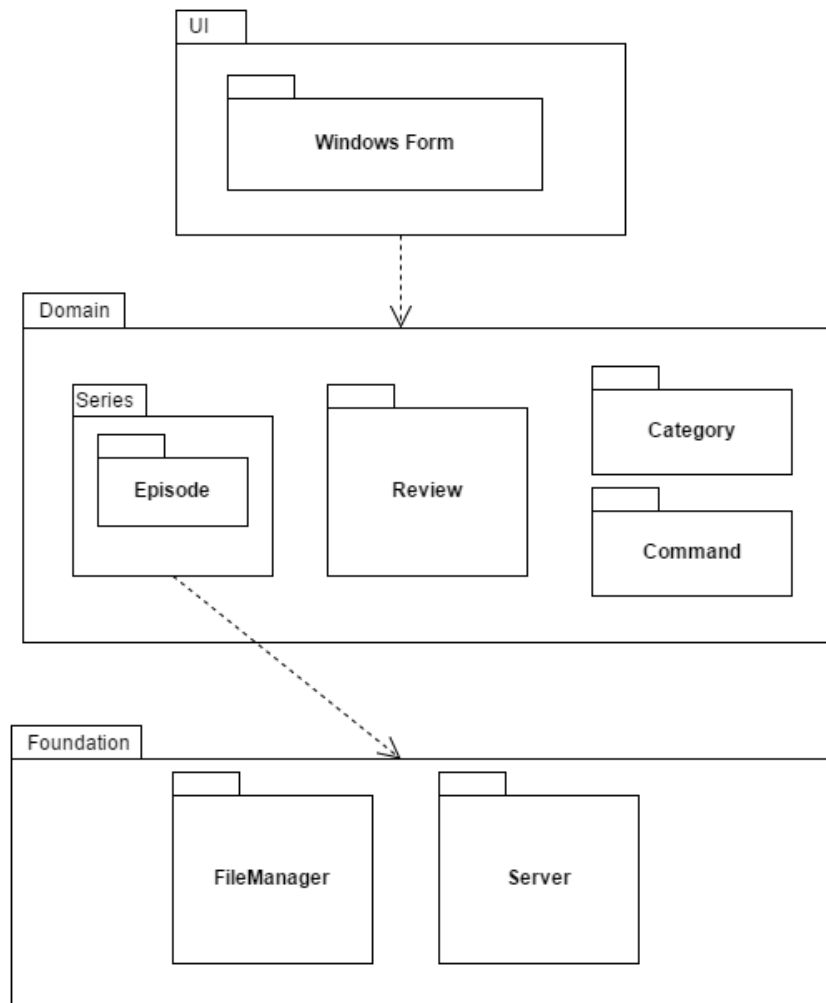


2.3 Add Attributes (New)



3 Design

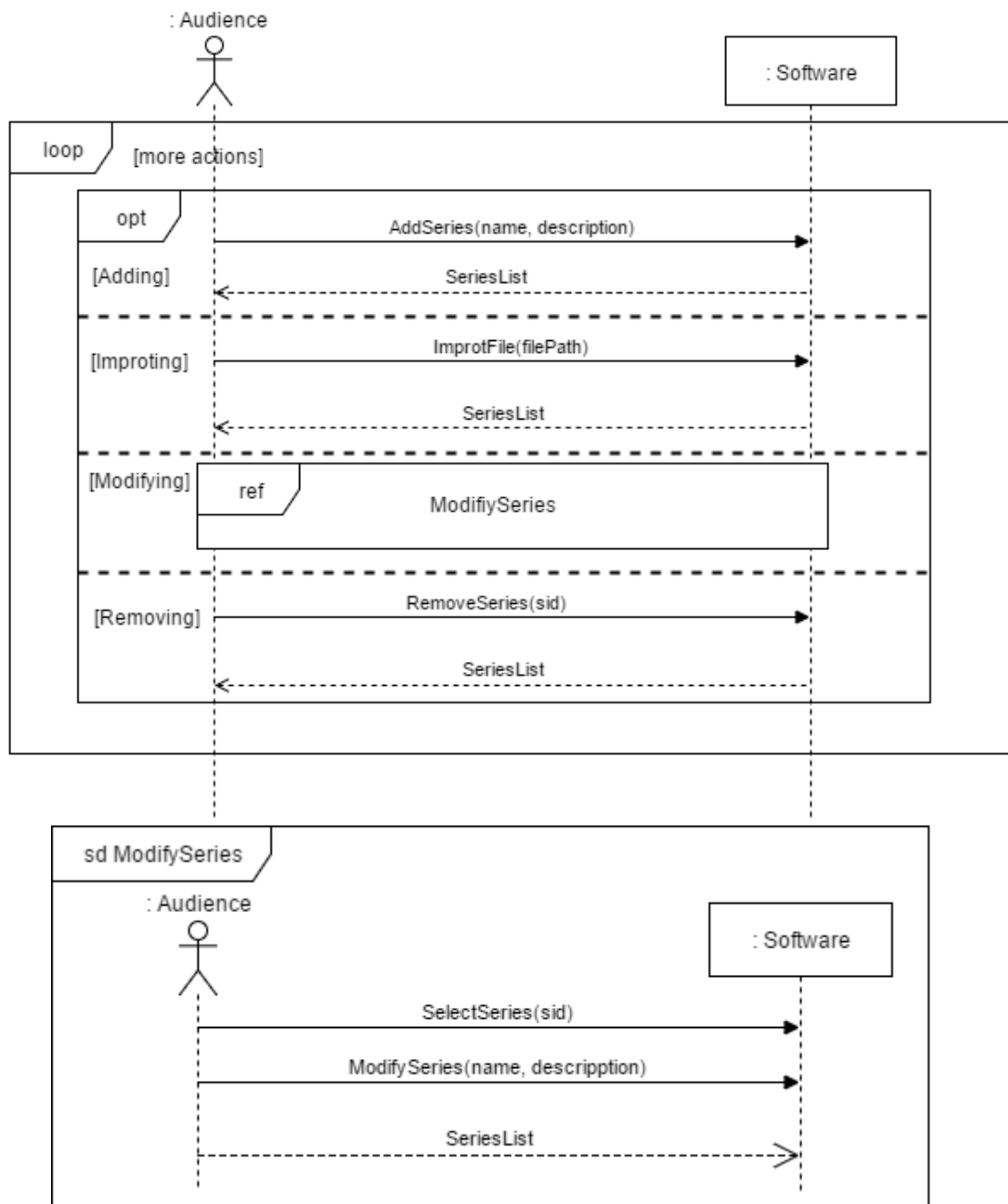
3.1 Logic Architecture (New)



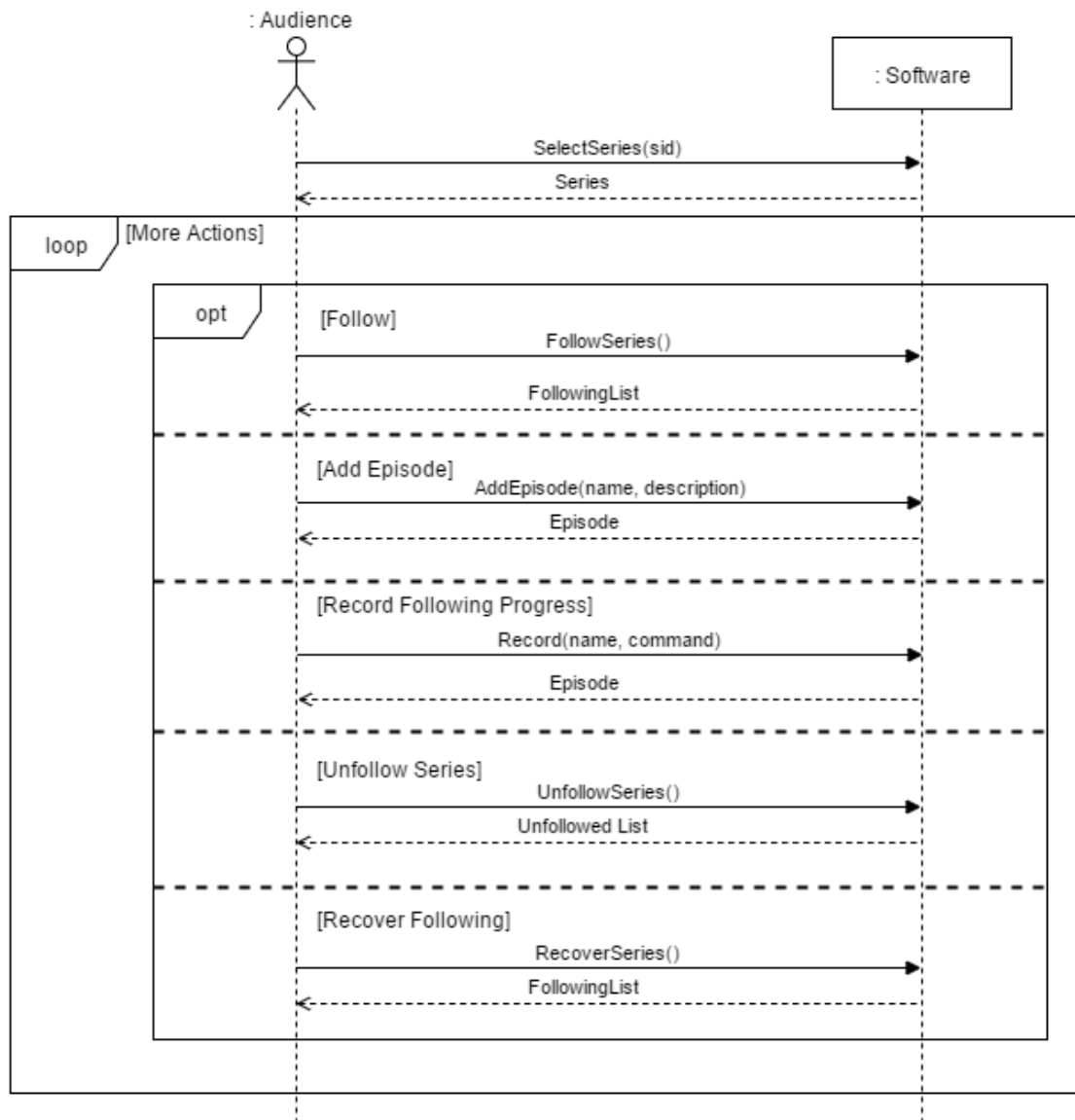
3.2 Use-Case Realizations with GRASP Patterns

3.2.1 System Sequence Diagram

3.2.1.1 管理影集資訊(Use Case 1)



3.2.1.2 追蹤影集(Use Case 2) (New)



3.2.2 Contract

Contract ID	Operation Name
CO-01	AddSeries
CO-02	ImportFile
CO-03	SelectSeries
CO-04	ModifySeries
CO-05	RemoveSeries

3.2.2.1 AddSeries

Operation	AddSeries(name:string, description:string)
Cross Reference	Use Case 1
Preconditions	Software was opened

Postconditions	A new series instance s was created.(instance creation) S was added into series list of software.(association formed)
----------------	--

3.2.2.2 ImportFile

Operation	ImportFile(filePath:string)
Cross Reference	Use Case1
Preconditions	Software was opened
Postconditions	A list of new series sl was created.(instance creation) Sl was added into series list of software.(association formed)

3.2.2.3 SelectSeries

Operation	SelectSeries(sid: int)
Cross Reference	Use Case1
Preconditions	Software was opened
Postconditions	Software.selectedSeries became a series s.(attribute modification)

3.2.2.4 ModifySeries

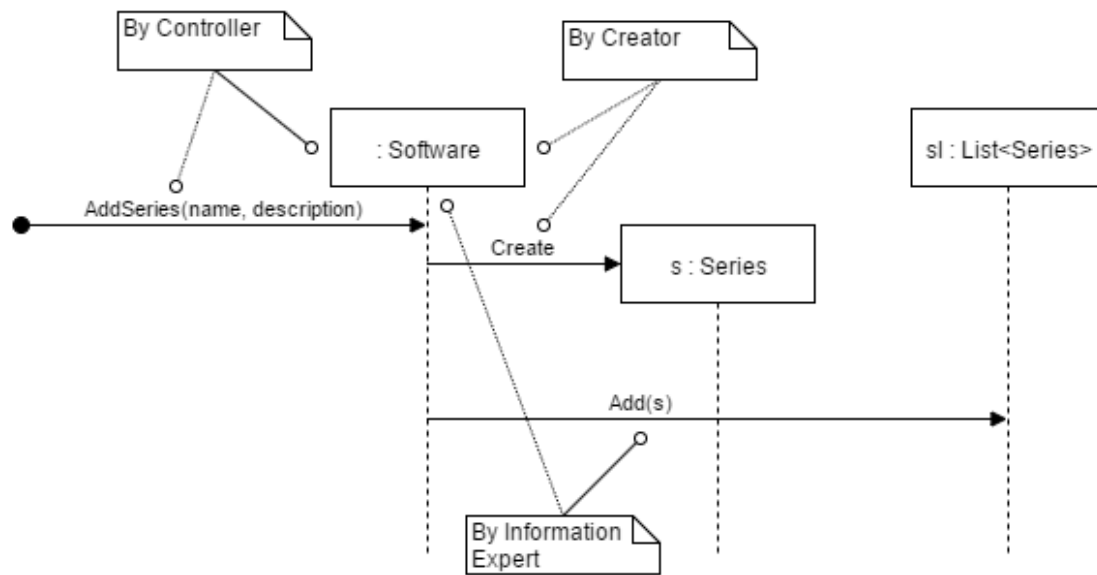
Operation	ModifySeries (name: string, description: string)
Cross Reference	Use Case1
Preconditions	A series s has been selected.
Postconditions	s.name was modified.(instance creation) s.description was modified.(attribute modification)

3.2.2.5 RemoveSeries

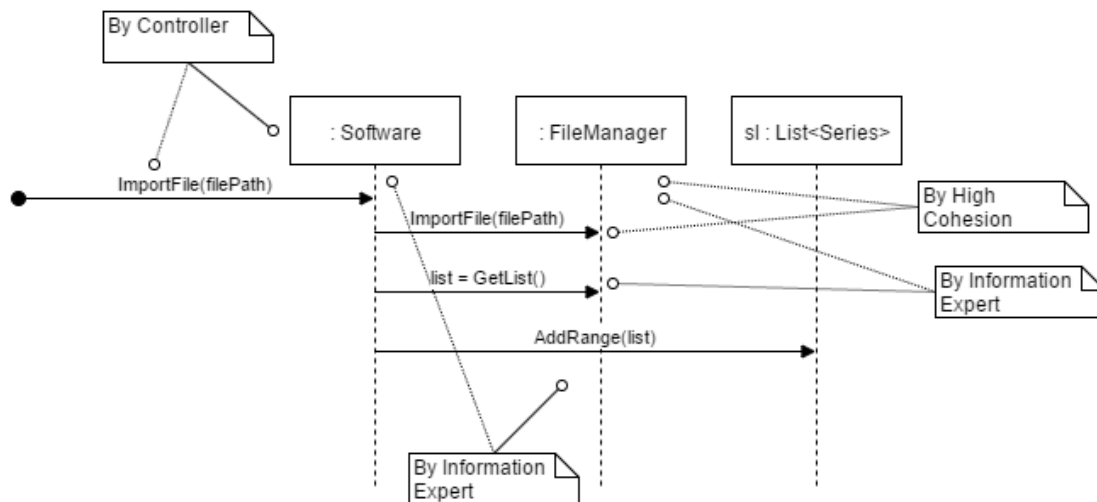
Operation	RemoveSeries (sid: int)
Cross Reference	Use Case1
Preconditions	Software was opened
Postconditions	A series s was removed from the list of series of software.(attribute modification)

3.2.3 Operation Sequence Diagram

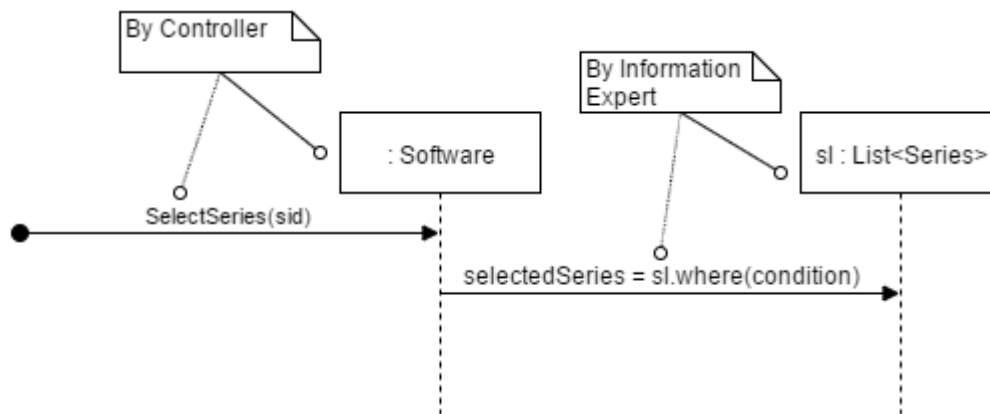
3.2.3.1 AddSeries



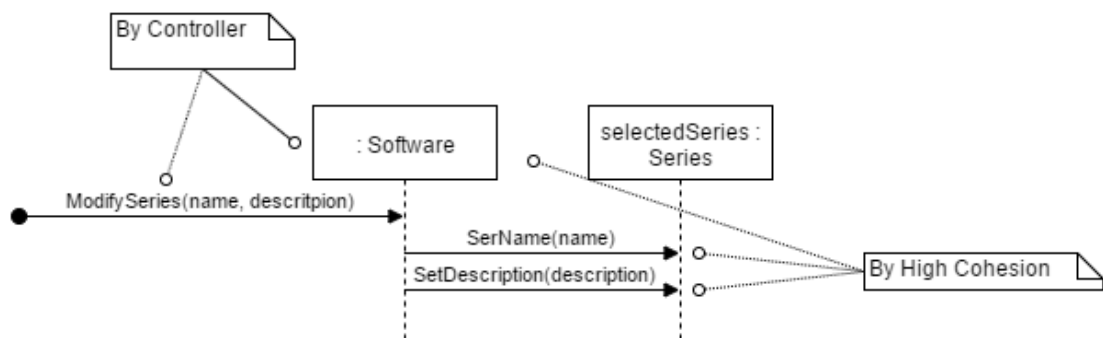
3.2.3.2 ImportFile



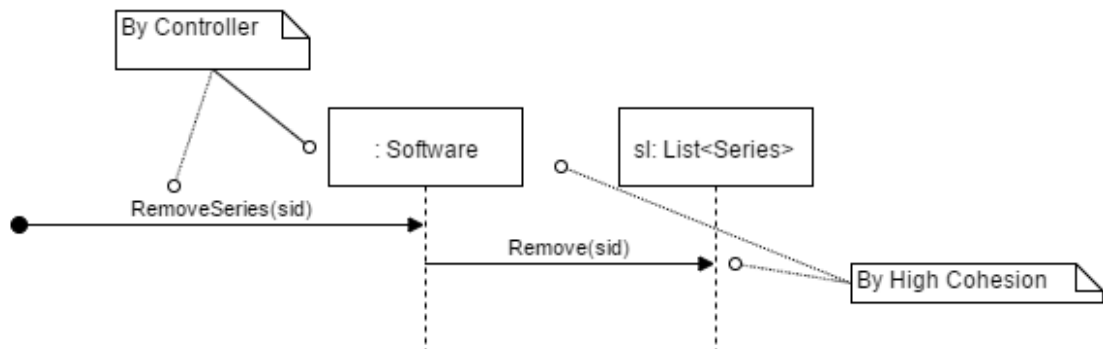
3.2.3.3 SelectSeries



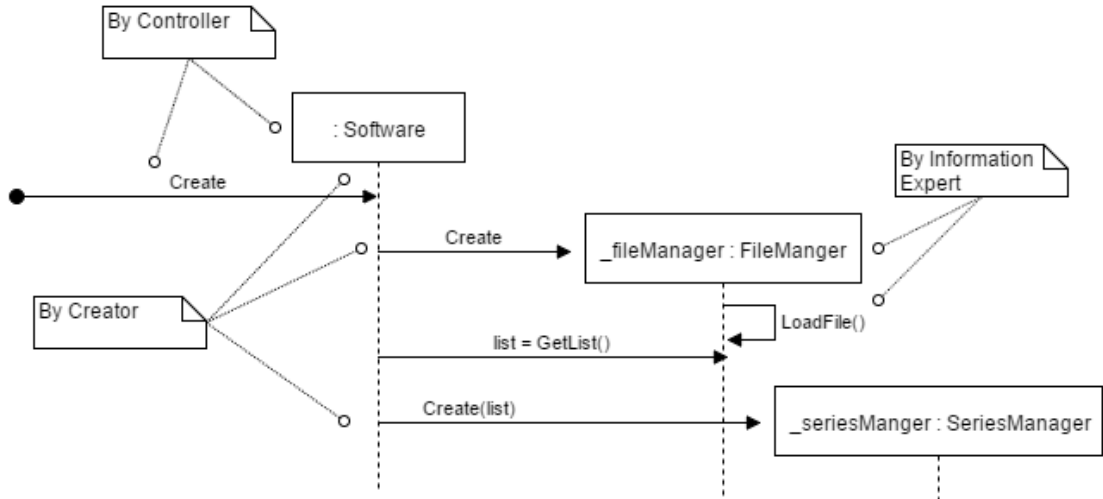
3.2.3.4 ModifySeries



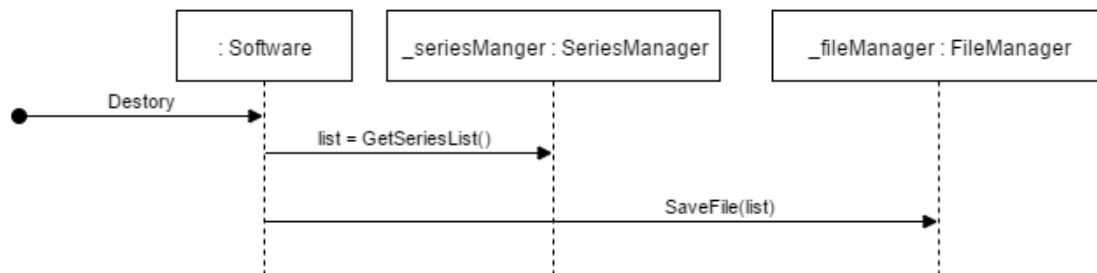
3.2.3.5 RemoveSeries



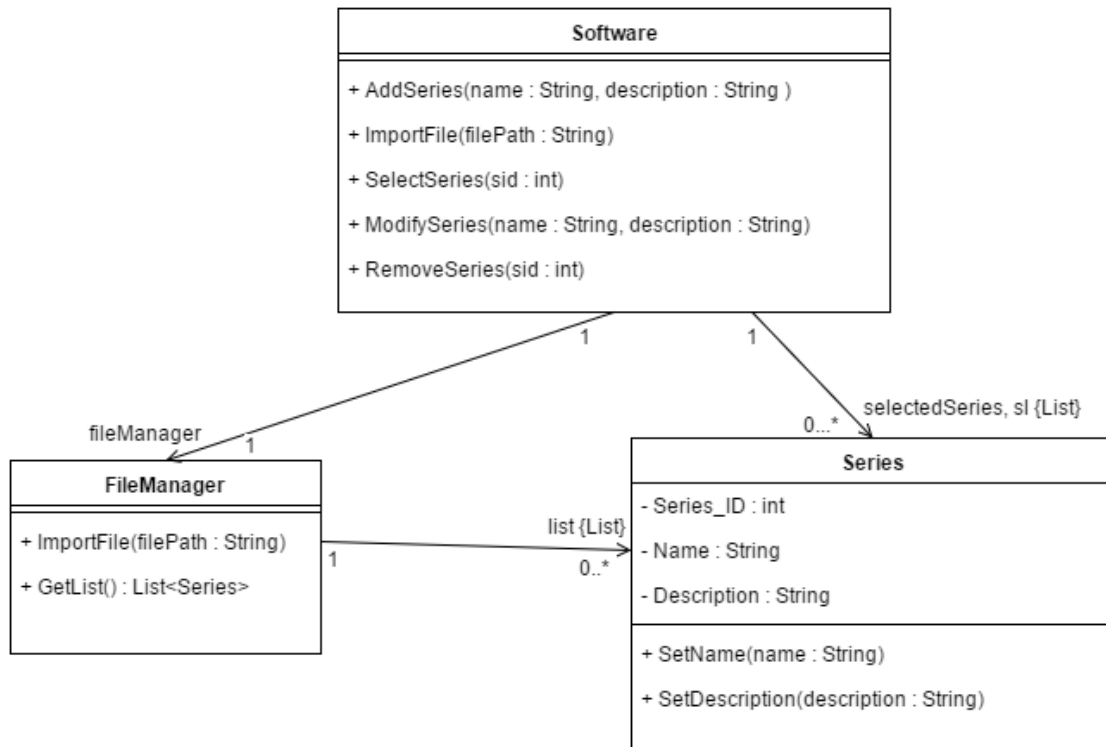
3.2.3.6 Initialize



3.2.3.7 Destroy

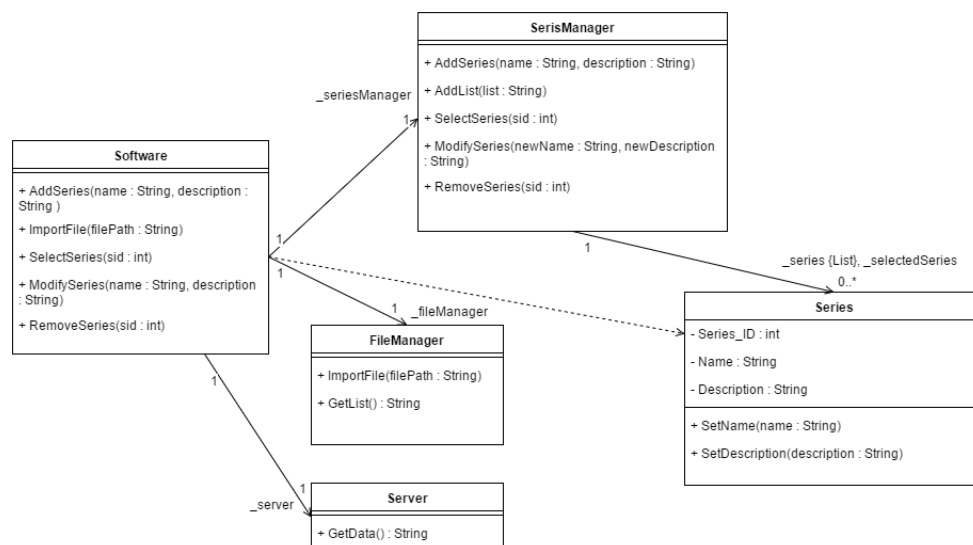


3.3 Design Class Diagram



4 Implementation Class Model

4.1 Implementation Class Diagram



4.2 The Difference between Implementation and Design Class Model

4.2.1 Comparison with Design and Implementation Class

Class	Method	Design	Imp.
Software	AddSeries	Yes	Yes
	ImportFile	Yes	Yes
	SelectSeries	Yes	Yes
	ModifySeries	Yes	Yes
	RemoveSeries	Yes	Yes
FileManager	ImportFile	Yes	Yes
	GetList	Yes	Fixed
	SaveFile	No	New
Series	SetName	Yes	Yes
	SetDescription	Yes	Yes
	SetSeriesID	No	New
SeriesManager (add in Imp. phase)	GetSeriesList	No	New
	GetSelectedSeries	No	New
	AddSeries	No	New
	AddList	No	New
	SelectSeries	No	New
	ModifySelectedSeries	No	New
	RemoveSeries	No	New
	InitializeCount	No	New
Server (add in Imp. phase)	GetData	No	New

4.2.2 Summary of Implementation Class / Method Changed

	Number of Added	Number of Removed	Number of Modified
Class	2	0	1
Method	11	0	1

4.3 The Lines of Code

No	Class Name	Number of Methods	Line of codes without comment
1	Software	5	14
2	FileManger	3	20

3	Series	3	14
4	SeriesManager	8	27
5	Server	1	12

Measurement

101820302 施帛辰		101820340 鄒令業		備註
HW #1				
16/02/23 14:10~15:15	65 min	16/02/23 14:10~15:15	65 min	Meeting
		16/02/28 13:30~14:00	30 min	Doc. Writing
Total	65 min	Total	95 min	
HW #2				
16/03/10 10:10~12:10	120 min	16/03/10 10:10~12:10	120 min	Meeting & Discussion
16/03/15 14:15~17:05	170 min	16/03/15 14:15~17:05	170 min	Meeting & Discussion
16/03/17 10:10~11:30	80 min	16/03/17 10:10~11:30	80 min	Meeting & Discussion
Total	370 min	Total	370 min	
HW #3				
16/03/29 14:10~15:30	80 min	16/03/29 14:10~15:30	80 min	Meeting
Total	80 min	Total	80 min	
HW #4				
16/04/26 14:20~17:10	170 min	16/04/26 14:20~17:10	170 min	Meeting
		16/04/27 13:00~14:00	60 min	Coding
16/04/27 16:10~17:20	70 min	16/04/27 16:10~17:20	70 min	Meeting
Total	240 min	Total	300 min	
HW #5				
16/05/01 19:00~20:30	90 min	16/05/02 12:00~12:30	30 min	Coding
16/05/03	180 min	16/05/03	180 min	Meeting

14:00~17:00		14:00~17:00		
		16/05/04 11:00~11:30	30 min	Coding
16/05/05 15:10~17:00	110 min	16/05/05 15:10~17:00	110 min	Meeting
16/05/05 19:00~19:30	30 min			Coding
Total	410 min	Total	350 min	
HW #6				
16/05/17 14:10~17:00	170 min	16/05/17 14:10~17:00	170 min	Discussion
Total	170 min	Total	170 min	
All Efforts	22.25 hr	All Efforts	22.75 hr	