

# **Requirements Specification Document**

## **2Towers Client Management Project**

Version 1.0

**Michail Roesli (V00853253)**  
**Muhammad Ali (V00854120)**  
**Conor Butte-Landsfried (V00876461)**  
**Gregory O'Hagan (V00836165)**  
**Samuel Tsokwa (V00861810)**  
**Andrew Rose (V00884894)**  
**Annie Zhou (V00890522)**  
**Tony Chan(V00924954)**

**Hecksoft**

**19th March 2019**

## Table of Contents

0.1 Revision History	4
<b>1 Introduction</b>	4
1.1 Purpose	4
1.2 Project Scope	4
1.3 Glossary of Terms	5
1.4 References	6
1.5 Overview	6
<b>2 Overall Description</b>	6
2.1 Product Perspective	6
2.2 Product Features	6
2.3 User Classes and Characteristics	6
2.4 Operating Environment	7
2.5 Design and Implementation Constraints	7
2.6 Assumptions and dependencies	7
<b>3 Debtor Information Manager Features</b>	7
3.1 Warnings	7
3.1.1 Description and Priority	7
3.1.2 Functional Requirements	7
3.2 Configurable Pipeline	8
3.2.1 Description and Priority	8
3.2.2 Functional Requirements	8
3.3 Information Consolidation and Storage	8
3.3.1 Description and Priority	8
3.3.2 Functional Requirements	8
3.4 Limit System Access Using Privileges	8
3.4.1 Description and Priority	9
3.4.2 Functional Requirements	9
3.5 Event Notes	9
3.5.1 Description and Priority	9
3.5.2 Functional Requirements	9
<b>4 External Interface Requirements</b>	9
4.1 User Interfaces	9
4.1.1 Requirements	9
4.2 Hardware Interfaces	10
4.3 Software Interfaces	10
4.3.1 Requirements	10
4.4 Communications Interfaces	10
4.4.1 Requirements	10
<b>5 Other Non-Functional Requirements</b>	10

5.1 Performance Requirements	10
5.2 Safety Requirements	11
5.3 Security Requirements	11
5.4 Software Quality Attributes	11
5.4.1 Maintainability	11
5.4.2 Portability	11
5.4.3 Availability	11
5.4.4 Usability	11
<b>6 Other Requirements</b>	<b>11</b>
<b>7 Analysis Models</b>	<b>11</b>
7.1 Data Flow Diagram	11
7.1.1 Context Level Diagram	12
7.1.2 Data Flow Diagram Level 1	13
7.1.3 Data Flow Diagram Level 2	14
7.2 Entity Relationship Diagram	16
7.2.1 Data Dictionary	16
7.3 Use Case Model	17
7.3.1 Use Case Model Diagram	18
7.4 Use Cases	19
7.4.1 Login	19
7.4.1.1 Use Case Table	19
7.4.1.2 Sequence Diagram	19
7.4.1.3 User Interface Storyboard	20
7.4.2 Create New Debtor Profile	21
7.4.2.1 Use Case Table	21
7.4.2.2 Sequence Diagram	21
7.4.2.3 User Interface Storyboard	22
7.4.3 Navigate to Debtor Profile	24
7.4.3.1 Use Case Table	24
7.4.3.2 Sequence Diagram	24
7.4.3.3 User Interface Storyboard	25
7.4.4 Edit Debtor Profile Information	26
7.4.4.1 Use Case Table	26
7.4.4.2 Sequence Diagram	26
7.4.4.3 User Interface Storyboard	27
7.4.5 Change Debtor Profile Version	28
7.4.5.1 Use Case Table	28
7.4.5.2 Sequence Diagram	29
7.4.5.3 User Interface Storyboard	30
7.4.6 Record Notes to Debtor Profile	32
7.4.6.1 Use Case Table	32

7.4.6.2 Sequence Diagram	32
7.4.6.3 User Interface Storyboard	33
7.4.7 View Outstanding Fees to 2Towers	35
7.4.7.1 Use Case Table	35
7.4.7.2 Sequence Diagram	35
7.4.7.3 User Interface Storyboard	36
7.4.8 Add File Attachment	36
7.4.8.1 Use Case Table	37
7.4.8.2 Sequence Diagram	37
7.4.8.3 User Interface Storyboard	38
7.4.9 Add New Stage	39
7.4.9.1 Use Case Table	39
7.4.9.2 Sequence Diagram	40
7.4.9.3 User Interface Storyboard	41
7.4.10 Edit a Stage	42
7.4.10.1 Use Case Table	43
7.4.10.2 Sequence Diagram	44
7.4.10.3 User Interface Storyboard	45
7.4.11 Removing a Stage	46
7.4.11.1 Use Case Table	47
7.4.11.2 Sequence Diagram	48
7.4.11.3 User Interface Storyboard	49
7.4.12 View Stage Statistics	50
7.4.12.1 Use Case Table	50
7.4.12.2 Sequence Diagram	51
7.4.12.3 User Interface Storyboard	51
7.4.13 View Debtor Statistics	54
7.4.13.1 Use Case Table	54
7.4.13.2 Sequence Diagram	54
7.4.13.3 User Interface Storyboard	55
7.4.14 Move Debtor to New Stage	57
7.4.14.1 Use Case Table	57
7.4.14.2 Sequence Diagram	57
7.4.14.3 User Interface Storyboard	58
7.4.15 Navigate to Google Calendar	59
7.4.15.1 Use Case Table	59
7.4.15.2 Sequence Diagram	59
7.4.15.3 User Interface Storyboard	60
7.4.16 Dismiss Warning	61
7.4.16.1 Use Case Table	61
7.4.16.2 Sequence Diagram	61
7.4.16.3 User Interface Storyboard	62

7.4.17 Add New DC Account	63
7.4.17.1 Use Case Table	63
7.4.17.2 Sequence Diagram	63
7.4.17.3 User Interface Storyboard	64
7.4.18 Promoting a DC to BM	67
7.4.18.1 Use Case Table	67
7.4.18.2 Sequence Diagram	67
7.4.18.3 User Interface Storyboard	68
7.4.19 Remove DC account	69
7.4.19.1 Use Case Table	69
7.4.19.2 Sequence Diagram	70
7.4.19.3 User Interface Storyboard	71
7.4.20 Change DC assigned to debtor	73
7.4.20.1 Use Case Table	73
7.4.20.2 Sequence Diagram	73
7.4.20.3 User Interface Storyboard	74
7.4.21 Access debtor files	75
7.4.21.1 Use Case Table	75
7.4.21.2 Sequence Diagram	76
7.4.21.3 User Interface Storyboard	77

## 0.1 Revision History

Name	Date	Reason for Changes	Version
Initial Draft	Feb 14	Added suggested changes from the RD 1.1	0.1
First Client Suggestions	Mar 13	Client 0.1 review additions	0.9
RSD 0.9 Revision	Mar 14	Reviewed\added suggested changes from 0.9	0.95
Final RSD 1.0 Draft	Mar 19	Rectified document inconsistencies	1.0

## 1 Introduction

### 1.1 Purpose

The purpose of this document is to enumerate the requirements and specification for the Debtor Information Manager (DIM) currently being developed by Hecksoft for 2Towers Debt Consolidation, a company that advises debtors in becoming debt-free. The DIM will increase time efficiency, prevent loss of debtors, and organize data in a way that is easily accessible to employees at 2Towers. Currently, 2Towers uses 5 different softwares to carry out their work, which causes difficulties in organizing information and keeping track of debtors.

Commented [JK1]: Grammar

### 1.2 Project Scope

The DIM will include event scheduling, debtor information, debtor classification represented by the pipeline (see glossary), and file storage. The purpose of the DIM is to provide one interface for all the debt case information that will be uploaded and retrieved by the branch manager and each debt counsellor. 2Towers would benefit from unifying the many software tools into a single program, as this would reduce operating costs and simplify business.

## 1.3 Glossary of Terms

2Towers	Shorthand for 2Towers Debt Consolidation, the client company, which advises people in becoming debt-free.
Account	Account refers to an employee's account that info.
Branch manager (BM)	The 2Towers employee responsible for working on difficult cases, reviewing debtor progress, bookkeeping-related tasks including reviewing finances of their branch, and tracking and handling payments made by debtors to 2Towers.
Debt counsellor (DC)	A 2Towers employee responsible for one-on-one contact with debtors. This includes discussing debt reduction plans, arranging events with the debtor, reviewing debtor history, and following up with the debtor regarding any changes to the status of their debt reduction plan.
Debt counsellor information	A debt counsellor's calendar, user ID number, and a list of all debtor profiles assigned to them.
Debtor	A 2Towers customer who is being advised on how to reduce their debt.
Debtor Information Manager (DIM)	The debtor information management software to be built for 2Towers.
Debtor information	First and last name, date of birth, telephone number(s), email address, facial photograph, assigned debt counsellor, debt counsellor notes, all scheduled events, financial information, the current pipeline stage, debtor ID #, and miscellaneous documents.
Employee	Branch manager or debt counsellor (Not both).
Event	Scheduled meeting or an important deadline. For example, an event might be a meeting between a counsellor and debtor or a meeting with a bank counsellor.
Financial information	A complete enumeration of a debtor's assets and liabilities, as well as every known transaction which reduced or increased their debt a) made since signing up with 2Towers or b) deemed relevant by a debt counsellor.
Lead	A lead is a prospective debtor for 2Towers and has received a free consultation, but has yet to book any paid services from 2Towers.
Pipeline	As described by 2Towers, the pipeline is a metaphorical description of how every debtor that works with 2Towers goes through the same stages. The stages may change as per 2Towers company policy.
Profile	A profile refers to a debtors profile.
REQ	Requirement.
Stage	A phase within the pipeline. Consists of a name and a length of time. If a debtor spends longer than that length of time in a stage, they are considered stuck in that stage.

Commented [JK2]: Please reword

Commented [JK3]: What do you mean? This is a little ambiguous

Commented [JK4]: Please define this as it is an input to your DFD from the user. It is also used often throughout the document.

Debtor statistics	The total time that a debtor has spent in each stage ( a debtor may move back and forth from stages) and total time spent in the pipeline. .
Stage statistics	Refers to the average time spent in a stage and the number of debtors in a stage at a given time.
Warning	A push notification displayed to a debt counsellor when one of their debtors has been in a single pipeline stage for long enough to be considered stuck.
Stuck	Stuck is a descriptor for a debtor for when the debtor has been in a stage for longer than the specified duration by the BM.

Table 1. Glossary

**Commented [JK5]:** Formatting

## 1.4 References

- [1] “2Towers Client Management Project Request for Proposals.” [Online]. Available: [https://kerfootj.github.io/seng321\\_client/docs/G2\\_RFP.pdf](https://kerfootj.github.io/seng321_client/docs/G2_RFP.pdf) [Accessed: 04-Feb-2019].
- [2] “Proceeds of Crime (Money Laundering) and Terrorist Financing Act.” [Online]. Available: <https://laws-lois.justice.gc.ca/eng/acts/P-24.501/FullText.html> [Accessed 05-Feb-2019].

**Commented [JK6]:** Consider ordering the glossary alphabetically

## 1.5 Overview

In this document, we will cover the various features of the DIM, some of the characteristics of DIM users, where the DIM will operate, and what the constraints, assumptions and dependencies of the DIM are. Next, we will describe each DIM feature, including their functional requirements and their respective priority levels. Then we will discuss some of the existing external interfaces that the DIM will rely upon, and some analysis models to describe all the features that will be implemented. The analysis models include a context level diagram, level 1 and 2 data flow diagrams, a use case model, an entity-relationship model, and use cases with their according sequence diagrams and storyboards.

# 2 Overall Description

## 2.1 Product Perspective

The DIM is a replacement for 2Towers’s existing debtor management tools. 2Towers currently uses 5 different softwares - Zoho, Excel, FreshBooks, ShareFile and Google Calendar - to manage their debtors. To simplify operations, 2Towers wants to merge them into a single program.

**Commented [DJ7]:** I don't believe you can pluralize software like this

## 2.2 Product Features

The DIM will give DCs the ability to track the debtor’s progress in the pipeline, view financial data, make and save event notes which will enable them to make informed decisions with regards to the debt consolidation process of the debtors. The DIM provides the BM with statistical data that can be used to improve the debt consolidation process.

## 2.3 User Classes and Characteristics

The two user classes, branch manager and debt counsellor, shall be granted different data access privileges.

Branch manager

- Able to view and modify each debtor's profile.
- Able to view pipeline statistics.
- Able to view and edit financial data.
- Able to restructure the pipeline should the need arise.

Debt counsellor

- Able to view all debtor profiles and their financial data.
- Able to modify only their assigned debtor profiles.
- Able to view statistics of only the debtors assigned to them.

## 2.4 Operating Environment

The DIM is to be used in an office setting; hence, it will be fully operational on MacOS and Windows. Windows 10 and MacOS 10.13+ must be supported.

## 2.5 Design and Implementation Constraints

**CS-1:** Budget: Development must stay within the \$50,000 budgetary allocation.

**CS-2:** Software must be compatible with MacOS 10.13+ and Windows 10.

**CS-3:** Debtor information stored in the DIM must be encrypted and accessible to the BM and each DC.

## 2.6 Assumptions and dependencies

**AD-1:** This project assumes that commercial licenses will be obtained for integrating the following software into the DIM: ShareFile and Google Calendar.

**AD-2:** This project assumes that the following software currently being used by 2Towers are capable of being integrated into the DIM: ShareFile and Google Calendar.

**AD-3:** The method of data storage is to be decided by 2Towers. Hecksoft assumes that its selected storage medium can store and retrieve data without failure and within the timing specified in section 5.

## 3 Debtor Information Manager Features

This section will provide a description of each DIM feature alongside its respective priority. Each feature will include some functional requirements that we obtained from the 2Towers RFP [1].

### 3.1 Warnings

#### 3.1.1 Description and Priority

The main goal of DIM warnings is to notify DCs of debtors who have been stuck in any stage of the pipeline for the time frame specified by the BM. Warnings help the DC to book events with their debtor and discuss their future plan.

**Priority: High**

#### 3.1.2 Functional Requirements

**Commented [JK8]:** Are you integrating with ShareFile? It is not present as an entity in your DFD

**Commented [GU9R8]:** Additionally, your entity relationship diagram has a Files field attached to the Debtor Profile. It's very unclear whether you intend to store the files yourself or integrate with sharefile as noted here.

**Commented [DJ10]:** do you need an assumption about freshbooks too?

**Commented [JK11]:** What does this refer to? Physical storage hardware or ShareFile. We would like you to propose a medium to us.

**REQ-NS-1:** [Each DC] must be notified whenever a debtor assigned to them has been stuck in a stage in the pipeline for a given time frame specified by the manager.

**Commented [JK12]:** Can a BM have a debtor assigned to them?

## 3.2 Configurable Pipeline

### 3.2.1 Description and Priority

Organization of debtor progress to recovery from debt is very important to 2Towers' business. The configurable pipeline allows 2Towers to better understand debtor's progress.

**Priority: High**

### 3.2.2 Functional Requirements

**REQ-CP-1:** The BM must be able to create new stages, modify existing stages, and [move existing stages within the pipeline].

**Commented [SG13]:** I don't think this requirement has been met.

**REQ-CP-2:** Each debtor must be assigned to only one stage at a time.

**REQ-CP-3:** Each debtor's assigned DC, or the BM, must be able to place that debtor in any stage.

**REQ-CP-4:** The BM must be able to see the number of debtors currently in each stage.

**REQ-CP-5:** [Each debtor's assigned DC, and the BM, must be able to see which stage of the pipeline that debtor spent the most time in.]

**Commented [SG14]:** Only BC can see these statistics

**REQ-CP-6:** The BM must be able to see the average time it takes a debtor to complete the stage.

## 3.3 Information Consolidation and Storage

### 3.3.1 Description and Priority

Debtor information will need to be safely and securely stored and retrieved for other features. 2Towers currently stores debtor information in 5 different software tools; therefore, the existing data needs to be preserved and transferred into the DIM.

**Priority: High**

### 3.3.2 Functional Requirements

**REQ-ICS-1:** Each debtor profile must be able to store all debtor data: debtor's respective files, debtor's full name, debtor's contact info, debtor's current stage, and debtor's previous stages.

**REQ-ICS-2:** The DIM must be able to access all of each debtor profile's information indefinitely.

**REQ-ICS-3:** The DIM must store all debtors' progress history, including the amount of time spent by each debtor in each stage. The stage history must be ordered in the order that the stages were visited.

**REQ-ICS-4:** The DIM must restrict access to each debtor's profile data to those authorized to access it, as detailed in the privileges feature.

**REQ-ICS-5:** The DIM must keep a complete list of timestamped revisions made to a debtor's profile and allow counsellors to revert to any past revision at any time.

**REQ-ICS-6:** When a reversion is made, the action must be listed as the most recent revision, and the contents of that list must remain accessible.

**REQ-ICS-7:** Each debtor profile must have the option for DCs and the BM to upload files of any type.

**REQ-ICS-8:** Any file attached to a debtor profile must be accessible.

**REQ-ICS-9:** The BM, and each DC, can create new debtor profiles.

**REQ-ICS-10:** [The time of access and name of the latest employee who accessed a file must be recorded.]

**Commented [SG15]:** I don't think this requirement has been met.

## 3.4 Limit System Access Using Privileges

### 3.4.1 Description and Priority

Only the BM and each DC must have access to the DIM because confidential debtor information will be stored therein. The privileges that differentiate the DC and BM will be listed below.

**Priority:** High

### 3.4.2 Functional Requirements

**REQ-LSA-1:** The BM and each DC must sign in to use the DIM.

**REQ-LSA-2:** The BM must be able to view and modify every debtor's profile.

**REQ-LSA-3:** A DC must be able to view any debtor's profile.

**REQ-LSA-4:** A DC must be able to modify a debtor's profile only if that debtor's profile is assigned to that DC.

**REQ-LSA-5:** When a new debtor profile is created, it is automatically assigned to the employee who made it whether it is the BM or DC who created it.

**REQ-LSA-6:** The BM must be able to reassign any debtor to any DC.

**REQ-LSA-7:** There is exactly one BM per branch.

**REQ-LSA-8:** When a BM promotes another DC to a BM, the BM will automatically be demoted to a DC

**REQ-LSA-9:** The BM can add new DC accounts.

**REQ-LSA-10:** The BM can delete any DC account(s).

**Commented [BC16]:** Or assign to the BM

## 3.5 Event Notes

### 3.5.1 Description and Priority

Important points may arise during events with debtors, therefore, notes should be kept for each debtor profile.

**Priority:** Medium

### 3.5.2 Functional Requirements

**REQ-MN-1:** The DIM must be able to record notes taken during events with debtors.

**REQ-MN-2:** The DIM must restrict access to event notes following functional requirements; **REQ-LSA-2**, **REQ-LSA-3**, and **REQ-LSA-4**.

**REQ-MN-3:** Event notes must be accessible from a debtor's profile.

## 4 External Interface Requirements

### 4.1 User Interfaces

2Towers employees are very familiar with ZOHO's interface and one of their main goals is to visualize the stages of the pipeline and distinctly show the stage a debtor is in within each debtor profile. It is important to be mindful that 2Towers employees would not be quick to familiarize themselves with new software.

**Commented [BC17]:** What are you trying to convey here? That the new software will be hard to pick up or that DC's aren't very good at learning new software? I think this can be restated in simpler language

#### 4.1.1 Requirements

**REQ-UI-1:** The BM must be shown a graphical representation of the stages of the pipeline for them to configure.

**REQ-UI-2:** Each debtor profile must show the current stage the debtor is at.

**REQ-UI-3:** All debtor profiles must be listed on a single page.

**REQ-UI-4:** Each debtor profile shows a history of the individual debtor's progression through the stages of the pipeline.

**REQ-UI-5:** All documents associated with each debtor profile are accessible within that debtor's profile.

## 4.2 Hardware Interfaces

No hardware interface is being designed, to our knowledge.

## 4.3 Software Interfaces

Currently, 2Towers is using 5 different software applications: ZOHO for handling debtor info and event notes, Microsoft Excel for calculating financial data, ShareFile for storing document scans, FreshBooks for 2Towers financial data, and Google Calendar for scheduling. Using so many different programs is inefficient; therefore, consolidating the relevant features of all 5 programs into a single program is the main goal of the DIM.

### 4.3.1 Requirements

**REQ-SI-1:** DIM must pull a debtor's outstanding fees owed to 2Towers from FreshBooks.

**REQ-SI-2:** Google Calendar services must be integrated into DIM.

**REQ-SI-3:** Google Account services must be used for BM and DC login credentials

**REQ-SI-4:** The employee must be able to view each employee's calendar(s).

**REQ-SI-5:** Each DC account must have his or her own calendar.

**Commented [JK18]:** Are you integrating with ShareFile or replacing it?

## 4.4 Communications Interfaces

Each employee's computer that is using the DIM will require communication over the internet with the DIM's server. This traffic includes all debtors' data that is in the DIM, which must be secured.

While the DIM will store debtors' contact email addresses, it will not interface with email servers. The email addresses will be manually copied into a traditional email client when email communications are required.

### 4.4.1 Requirements

**REQ-CI-1:** All communications and file transfers must be encrypted.

## 5 Other Non-Functional Requirements

### 5.1 Performance Requirements

**REQ-NFR-P-1:** No statistical calculation may take more than 5 seconds; this includes retrieval of the amount of time a debtor has spent in each stage, the percentage of debtors currently held by each stage, and other calculations.

Rationale:	Each DC needs to be able to do their jobs efficiently, and excessive time spent waiting for routine calculations is a waste of their time and 2Towers' money.
------------	---

**REQ-NFR-P-2:** The DIM must be able to support at least 300 active users at one time without delays longer than the maximum specified delay length and without an increased frequency of crashes or

errors.	
Rationale:	Each DC and the BM will use the DIM as part of their daily work, and we must support all of them without problems.

## 5.2 Safety Requirements

No safety requirements.

## 5.3 Security Requirements

**REQ-NFR-SE-1:** All debtors' information and files are encrypted when transmitted and saved to DIM's storage.

**REQ-NFR-SE-2:** Each DC and the BM must have their own unique set of login credentials.

**REQ-NFR-SE-3:** The threat of unauthorized access must be mitigated by following the best standard security practices.

**REQ-NFR-SE-4:** The DIM must abide by all restrictions, record-keeping, and protocols defined by the Proceeds of Crime (Money Laundering) and Terrorist Financing Act [2].

## 5.4 Software Quality Attributes

### 5.4.1 Maintainability

- The DIM must not exceed \$1000 in annual costs to maintain.

### 5.4.2 Portability

- 2Towers must be able to access the DIM on all versions of Windows 10 and Mac OS X 10.13.

### 5.4.3 Availability

- DIM unscheduled downtime must not exceed 24 hours per calendar year.

### 5.4.4 Usability

- A new user can navigate to any desired information in the DIM within 1 min.

## 6 Other Requirements

There are no additional requirements.

## 7 Analysis Models

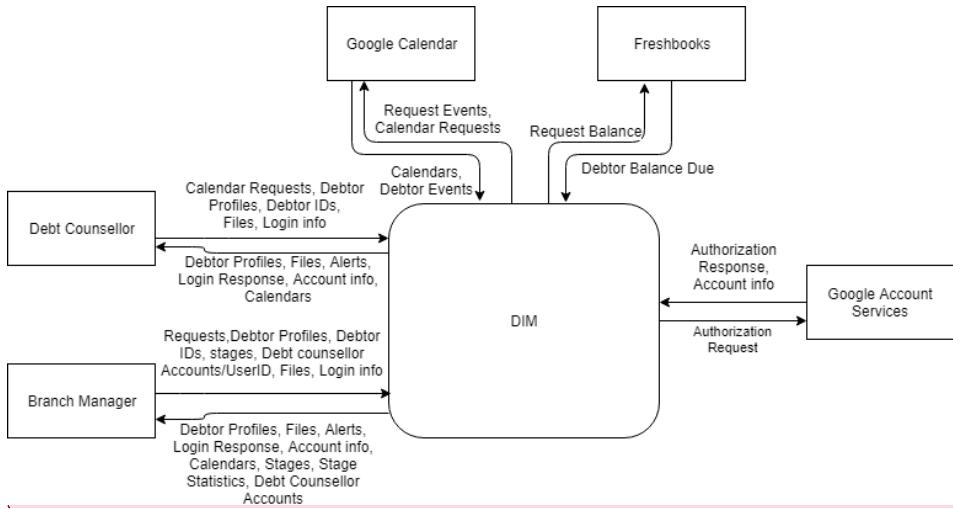
In this section, we will describe and analyze the features of DIM through a data flow diagram, use case model, and use cases, sequence diagrams and storyboards. For each use case, there is an associated use case table, sequence diagram and storyboard to help illustrate the functionality for the features of DIM.

### 7.1 Data Flow Diagram

This section contains three data flow diagrams, each of which shows the DIM at a different level of detail:

1. The Context Level Diagram shows how the system interacts with all external entities.
2. The Level 1 Diagram shows the main processes inside the DIM.
3. The Level 2 Diagram breaks down the Level 1 processes into sub-processes.

### 7.1.1 Context Level Diagram



**Commented [JK19]:** See comment on “profile” in glossary

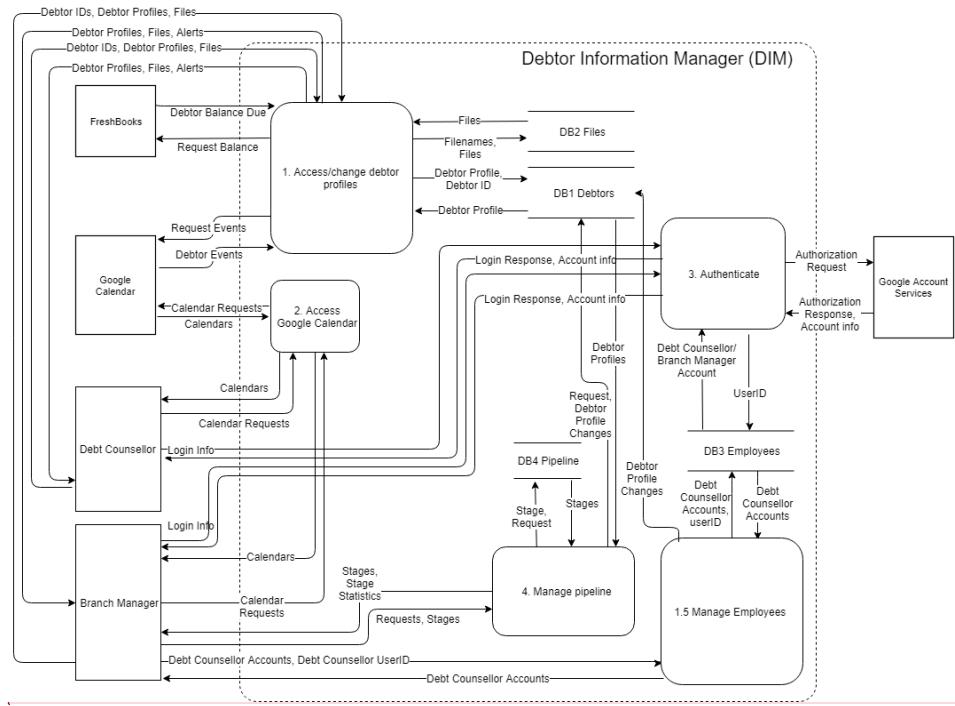
**Commented [GU20]:** What is "Alerts"? Is this referring to Warnings as defined in the glossary?

**Commented [GU21]:** You could consider adding an assumptions section for your DFDs, which include how data is being accessed by processes when interacting with external entities like Freshbooks and Google Calendar. It was a little unclear how/when data was being populated.

Legend:



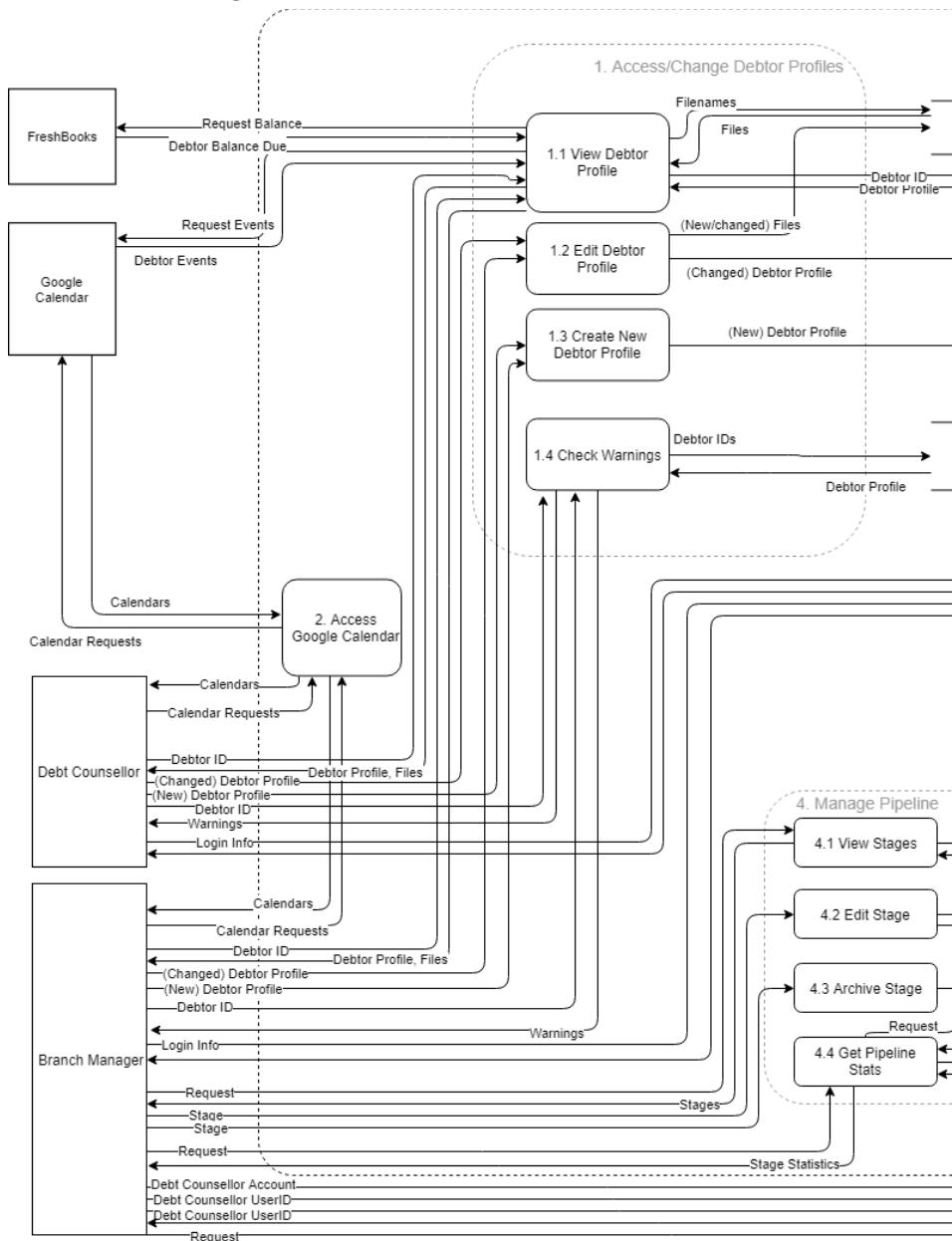
### 7.1.2 Data Flow Diagram Level 1

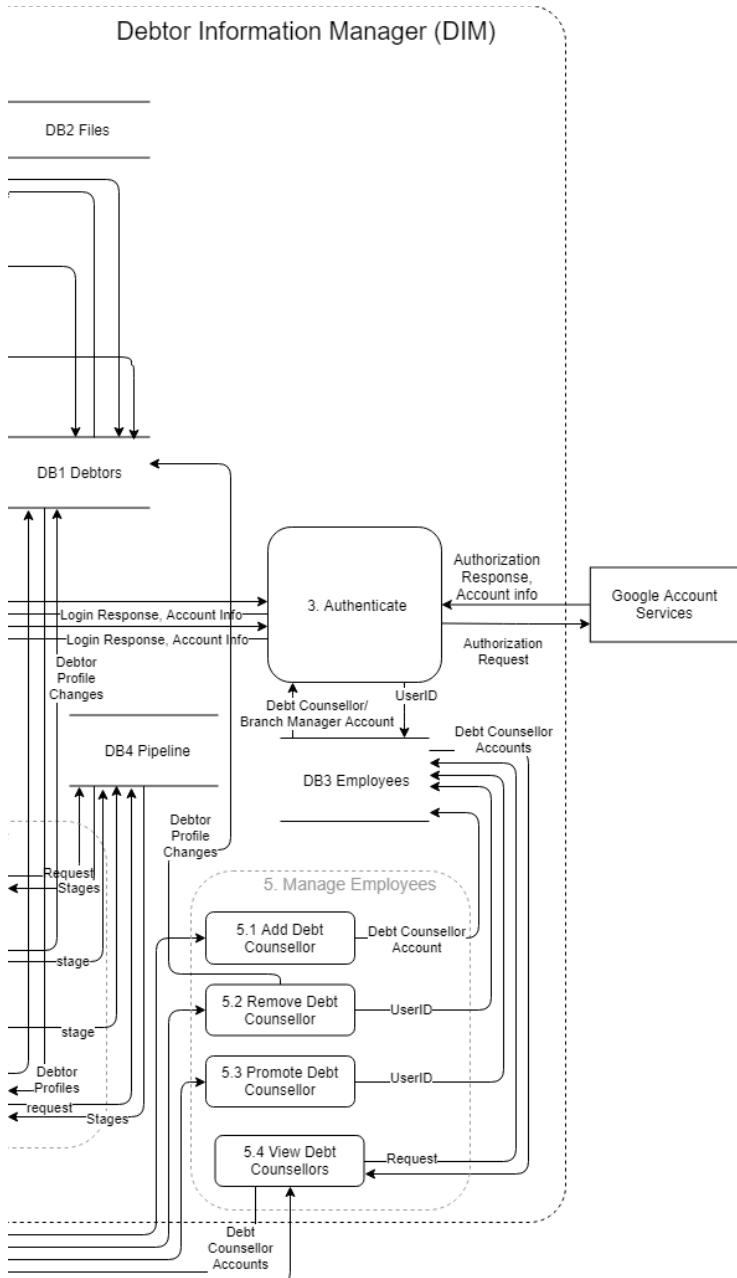


**Commented [GU22]:** Calendar Requests comes from Branch Manager to DIM in DFD1 however, it is not found coming from Branch Manager to DIM in DFDO/Context Diagram.

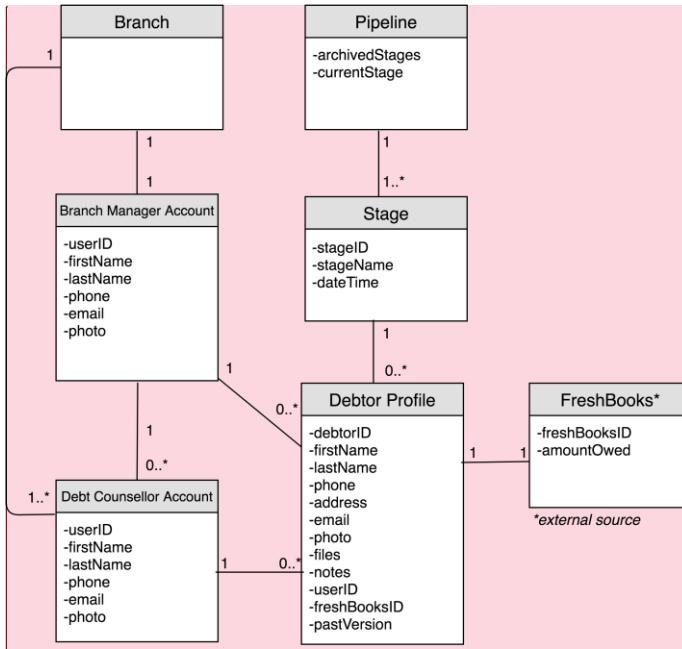
**Commented [GU23]:** For the Manage pipeline process, there is "Debtor Profile Changes" going to the DB1 database but this input is not found coming from the BM to process 4. Are you changing Debtor profile information here? Where does the returning Debtor Profiles go to (ie a BM)?

### 7.1.3 Data Flow Diagram Level 2





## 7.2 Entity Relationship Diagram



## **7.2.1 Data Dictionary**

Attribute	Attribute Description	Data Type	Length (bytes)	Primary Key	Nullable	Unique
userID	User's unique ID for identification	int	256	true	false	true
debtorID	Debtor's unique ID for identification	int	256	true	false	true
firstName	First name	varchar	256	false	false	false
lastName	Last name	varchar	256	false	false	false
phone	Contact phone number	int	32	false	true	false
email	Contact email address	varchar	256	false	red	true
address	Contact address of the debtor	varchar	265	false	true	false

**Commented [JK24]:** Are you storing debtor/stage statistics anywhere?

**Commented [GU25R24]:** Seems like it's supposed to be in Pipeline (archivedStages). But it's unclear how that is supposed to work with just a text field.

**Commented [JK26]:** Branch Entity:

Every entity requires at least one attribute.

What is a branch in the context of data being stored in the DIM?

**Commented [JK27R26]: Debtor Profile Entity:**

For the file attribute are you integrating with ShareFile?

**Commented [GU28R26]:** Unclear why you would need this entity in the first place, especially if it doesn't have any attributes.

**Commented [GLI29B26]:** Additional ERD notes:

- Commented [U25Rk2o]:** Additional ERD notes.

  - Consider combining Branch Manager Account & Debt Counsellor Account into one entity with a distinguishing field (isManager) instead of having two nearly duplicate tables
  - Photo listed twice in Debt Counsellor Account
  - Is a photo even needed for an employee account? The use case for creating an employee account only mentions an email address.
  - dateTIme attribute on the Stage table should have a clearer name
  - stageID should be recorded as a foreign key in the Debtor Profile table, otherwise how do you know which stage the debtor is currently in?
  - How are previous versions of debtor profiles stored? Is a 255 bytes varchar field enough? Doesn't seem to make sense if it has to store for example, previous versions of debtor photos which allow up to 131072 bytes. Feel like this would be better as a separate table.

**Commented [DJ30]:** can 'Branch' be empty?

**Commented [JK31]:** Forgot date of birth

**Commented [GU32R31]:** DoB also missing from Debtor Profile entity in diagram

**Commented [GU33R31]:** Would prefer the Data Dictionary to be organized as multiple tables, one for each data entity.

**Commented [GU34]:** Is this still true for BM & DC if they need a gmail account to access calendar features?

photo	Debtor photograph	image	131072	false	true	true
notes	Text note field	varchar	8192	false	true	false
files	All financial and miscellaneous documents	varchar	8192	false	true	false
pastVersion	A previous version of debtor stage	varchar	255	false	false	false
stageID	Stage's unique ID for identification	int	256	true	false	true
stageName	Name of the stage	varchar	255	false	false	false
dateTime	When a warning is to be set off	float	256	false	false	false
archivedStage	Previous stage of a debtor	varchar	255	false	false	false
currentStage	Current pipeline stage	varchar	255	false	false	false
freshBooksID	The unique ID to retrieve amount owed to 2Towers by the Debtor	int	256	true	false	true
amountOwed	Debtor amount owed to 2Towers via FreshBooks	float	256	false	false	true

**Commented [GU35]:** Noted as debtor photo here but is included in BM & DC entities

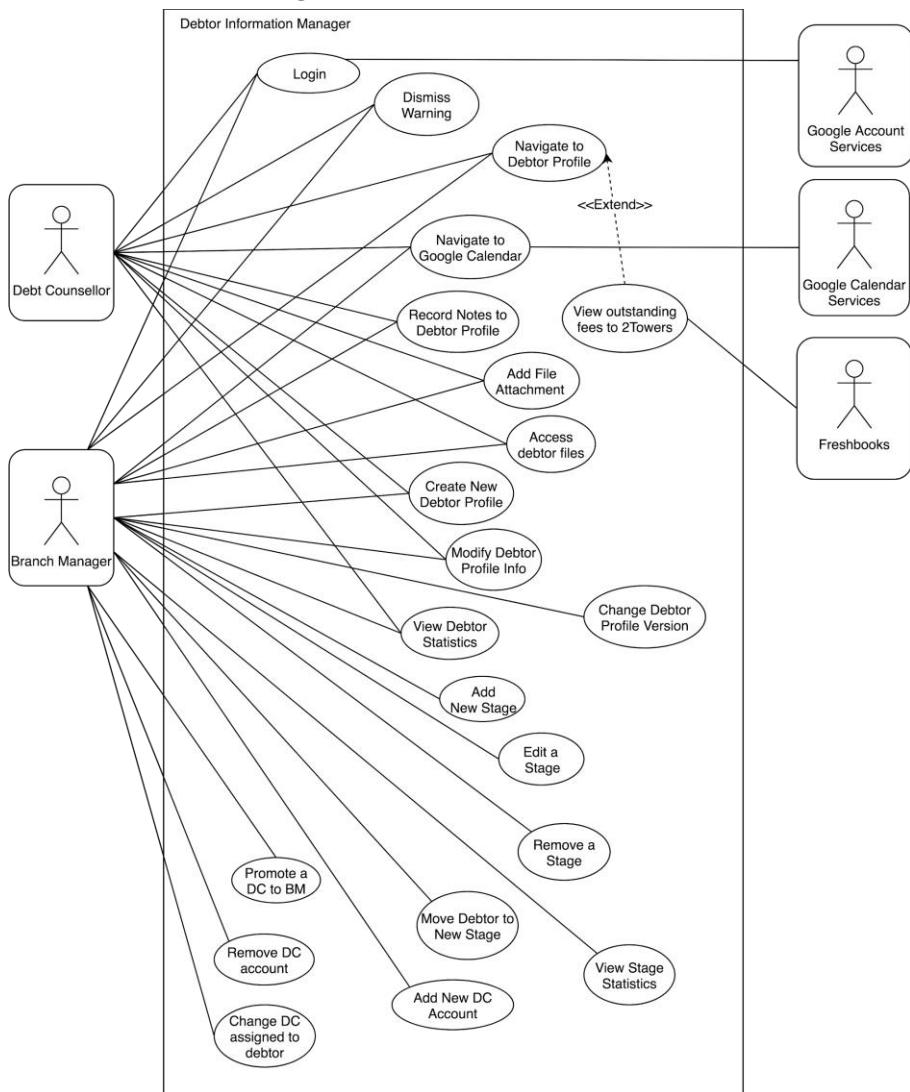
**Commented [GU36]:** See comments above (attached to diagram), this doesn't seem sufficient

**Commented [GU37]:** Is this correct? If so, what does the float measure? Minutes, hours, days? Please change this or update the description to be more clear.

### 7.3 Use Case Model

The use case model will describe what use cases are used within DIM and their relation to external actors.

### 7.3.1 Use Case Model Diagram



## 7.4 Use Cases

Below a series of use cases will be discussed with their according table, sequence diagram, and storyboard. The storyboard will have red highlights indicating a path that is along the main use case, and orange arrows for alternate paths.

### 7.4.1 Login

An employee may wish to access their account on the DIM for their work. They are required to enter their credentials in order to gain access to the DIM.

#### 7.4.1.1 Use Case Table

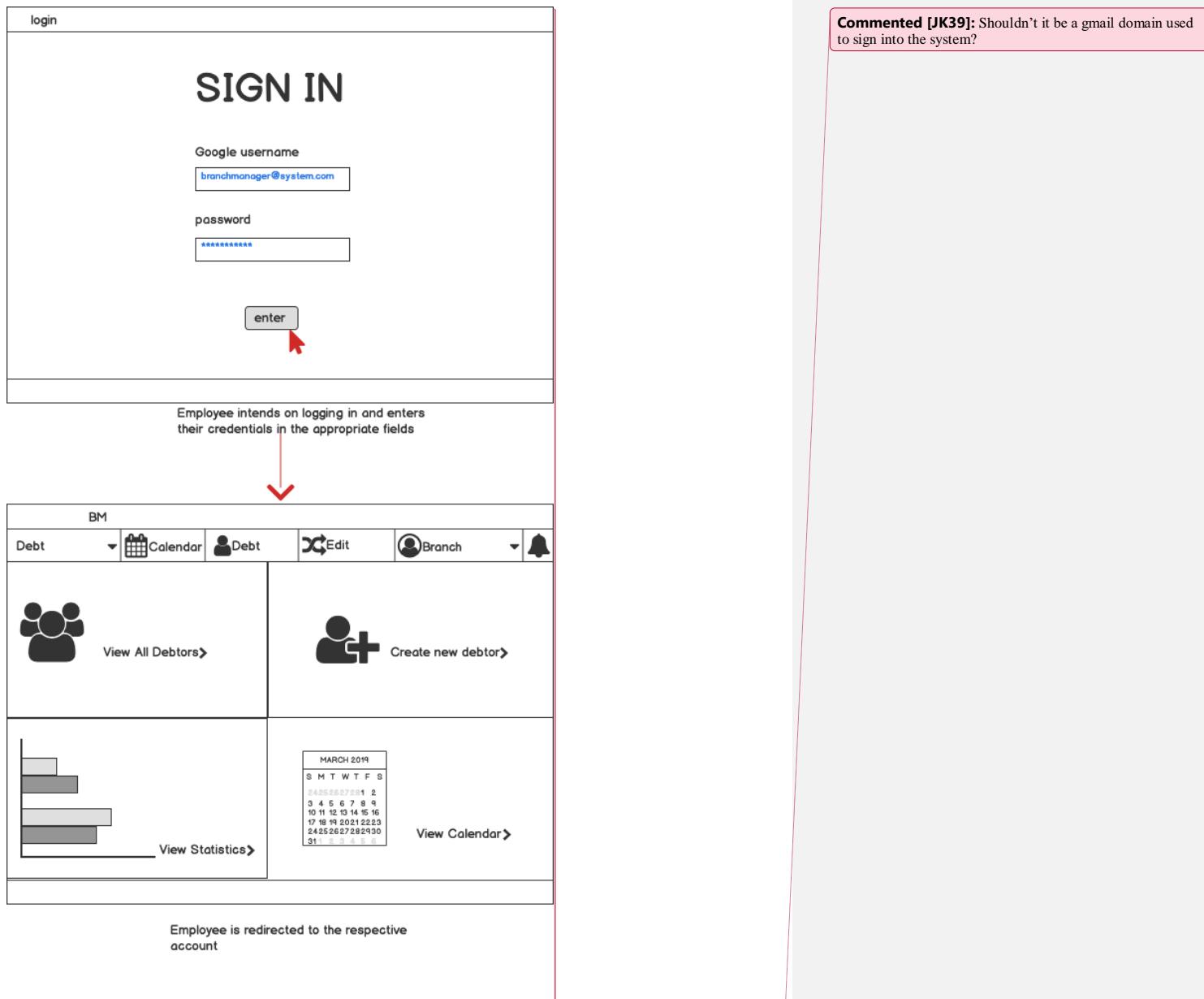
Actors	- Employee
Preconditions	1. Employee already has an account on the DIM
Steps	1. Employee navigates to login 2. Employee is prompted for credentials 3. Employee enters their account credentials. 4. Employee submits credentials information 5. The employee is redirected to their account page
Success Condition	1. Employee has accessed their account
Alternate Paths	3.a.i Employee has filled in incorrect credentials 3.a.ii Employee is prompted for correct credentials.

**Commented [DJ38]:** I'm not sure how important it is, but there is a specific way that use cases were formatted in the slides in regards to numbering and bullet points

#### 7.4.1.2 Sequence Diagram

[obj]  
Figure

#### 7.4.1.3 User Interface Storyboard



#### **7.4.2 Create New Debtor Profile**

When 2Towers gets a new debtor they are assigned a debtor profile. This debtor profile will contain the name phone and address of the debtor. It will also contain the meeting files and transaction files of the debtor. If an employee wishes to add extra information to further describe the debtor(ie debtor is divorced) they may do so by adding a comment (see section 7.9).

##### **7.4.2.1 Use Case Table**

Actors	- Employee
Preconditions	<ol style="list-style-type: none"><li>1. Employee is logged into system</li><li>2. Employee is on home page</li></ol>
Steps	<ol style="list-style-type: none"><li>1. Employee selects option to add a new debtor profile</li><li>2. Employee is prompted to fill out information for the new debtor profile</li><li>3. Employee fills and submits the information</li><li>4. DIM alerts that a new debtor profile has been created</li></ol>
Success Condition	<ol style="list-style-type: none"><li>1. The new debtor profile is assigned to the respective employee and is seen in the list of debtor profiles assigned to the first stage</li></ol>
Alternate Path	<ol style="list-style-type: none"><li>3.a.i Employee enters invalid information</li><li>3.a.ii DIM alerts that invalid information has been entered</li><li>3.a.iii Employee enters the correct information and selects the submit option</li></ol>

##### **7.4.2.2 Sequence Diagram**

[obj]

### 7.4.2.3 User Interface Storyboard

The storyboard consists of two main screens connected by a downward arrow.

**DC PROFILE**

- Top navigation bar: Calendar, My Debtors, Debt Counsellor, Bell icon.
- Left sidebar: View Debtors > (with a user icon).
- Right sidebar: Create new debtor (with a user plus icon), highlighted with a red arrow.
- Bottom sidebar: View Calendar > (with a calendar icon).
- Middle section: MARCH 2016 calendar.

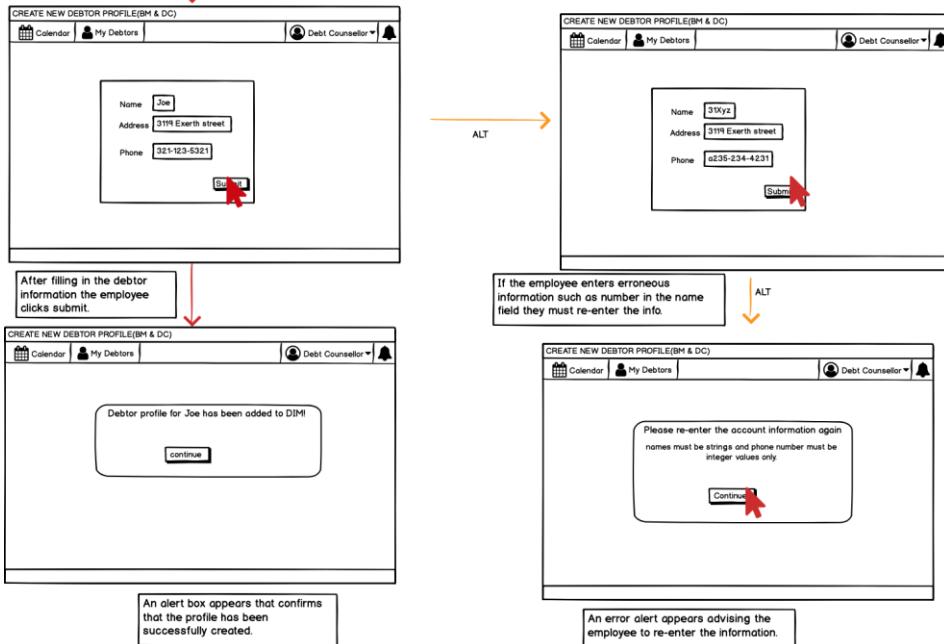
**CREATE NEW DEBTOR PROFILE(BM & DC)**

- Top navigation bar: Calendar, My Debtors, Debt Counsellor, Bell icon.
- Form fields (circled in red):
  - Name: Enter Name here
  - Address: Enter Address here
  - Phone: Enter Phone number here
- Submit button.

**Annotations:**

- A callout box on the DC PROFILE screen states: "The employee has logged in and is on their home page. They select create new debtor to go to page where they can create a new debtor profile." A red arrow points from this box down to the "Create new debtor" button.
- A callout box on the CREATE NEW DEBTOR PROFILE screen states: "The employee fills in the debtor information." A red arrow points from this box up to the form fields.

**Commented [JK40]:** Why is there so few options to enter into the profile when you are storing other details about the clients. Where do you enter their email or date of birth or picture? Perhaps you already have some documents from them you'd like to add at this step. Also, the functionality of "submit" isn't super clear. Save or create would be better.



### 7.4.3 Navigate to Debtor Profile

Navigating to a debtor profile is an essential functionality of the DIM. The ability for employees to access debtors profile enables the employees to view important information related to the specific debtor.

#### 7.4.3.1 Use Case Table

Actors	- Employee
Preconditions	1. Employee is logged into their profile 2. Employee is on home page
Steps	1. Employee navigates to list of debtors 2. Ordered list of debtors is displayed 3. Employee chooses the desired debtor profile to view 4. The chosen debtor profile is displayed
Success Conditions	1. Employee has found their desired debtor profile
Alternate Paths	3.a.i) Employee doesn't see desired profile and selects the option to create new debtor profile 3.a.ii) Create new debtor profile is displayed

**Commented [JK41]:** Are you using brackets or periods?  
See the previous use case.

**Commented [JK42]:** Wouldn't this be a create debtor profile rather than an alternate path. If they are looking for a specific profile, then they probably aren't going to create it if they don't find what they are looking for.

#### 7.4.3.2 Sequence Diagram

[obj]

### 7.4.3.3 User Interface Storyboard

DC PROFILE

Calendar | My Debtors | Debt Counsellor | Bell

**View All Debtors >**

**Create new debtor >**

MARCH 2019

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

**View Calendar >**

1. The employee clicks on the "View All Debtors" tile on their home page.

DEBTOR SEARCH (BM & DC)

Calendar | My Debtors | Debt Counsellor | Bell

**Debtor Database**

**Create New Debtor**

Search | Type a Debtor Name | Filters ▾

Name	Debtor ID	Assigned Counsellor	Last Meeting
Debtor A	123456	Debt Coun. A	2018-10-27
Debtor B	234567	Debt Coun. B	2019-2-27
⋮	⋮	⋮	⋮

2. A list of all debtors is shown. The branch manager or debt counsellor clicks on the desired debtor profile.

DEBTOR PROFILE (DC View)

Calendar | My Debtors | Debt Counsellor | Bell

**Debtor A** Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information Upcoming Meetings Notes

Name: Debtor A 2019-3-20 @ 2:00pm Enter Notes Here  
ID: 123456  
DOB: 1990-3-3  
Address: 101 Ring Rd

Stage Management File Attachments Upload

Current Stage: Stage A

3. The selected debtor profile is displayed and the employee is able to see the required information.

CREATE NEW DEBTOR PROFILE(BM & DC)

Calendar | My Debtors | Debt Counsellor | Bell

**Debtor A** Assigned Counsellor: DC A **Reason:** Outstanding Balance: \$500

Personal Information First Meeting Initial Notes

Name: Debtor A   
ID: 123456  
DOB: 1990-3-3  
Address: 101 Ring Rd

Initial Notes: Enter Notes Here

Stage Management Current Stage: Stage A

2.a The employee does not see the debtor that they are looking for. They then click the "Create New Debtor" and are redirected to the "Create New Debtor" page.

**Commented [SG43]:** There should be a way to save info on create new debtor page. Also this create new debtor page is much different than the create new debtor page in 7.4.2.3.

#### 7.4.4 Edit Debtor Profile Information

The ability to edit a debtor profile is essential for the DIM to be effective. Giving the BM and the DC assigned to the debtor the ability to edit information on a debtor profile ensures that the profile is always up-to-date.

##### 7.4.4.1 Use Case Table

Actors	- BM, or DC assigned to Debtor Profile
Preconditions	<ol style="list-style-type: none"> <li>1. Employee has logged in</li> <li>2. Employee has navigated to the desired debtor profile</li> </ol>
Steps	<ol style="list-style-type: none"> <li>1. Employee enters edit mode on the debtor profile</li> <li>2. Editable debtor main profile page is displayed</li> <li>3. Employee chooses the desired debtor information section to edit</li> <li>4. Editable information area</li> <li>5. Employee changes the desired debtor information</li> <li>6. Employee saves the changes to the profile</li> <li>7. Debtor profile with correct information is displayed</li> </ol>
Success Conditions	<ol style="list-style-type: none"> <li>1. The debtors displayed information accurately reflects the changes made by the employee.</li> </ol>
Alternate Paths	<ol style="list-style-type: none"> <li>1.a.i. DC who is not assigned to the debtor attempts to edit profile</li> <li>1.a.ii. Error message is given to the DC informing them of restrictions</li> <li>1.b.i. Employee attempts to edit the profile at the same time as another employee.</li> <li>1.b.ii. Error message informing employee that another employee is currently editing is displayed.</li> <li>5.a.i. Employee enters improperly formatted data</li> <li>5.a.ii. Error message informing employee of issue is displayed</li> </ol>

**Commented [JK44]:** It is confusing that these are numbers when you compare these numbers to the alternate paths. It may be clearer if you change preconditions to bullet points. Since they are preconditions it is assumed that they are carried out in the correct order.

**Commented [JK45]:** This isn't a step

**Commented [JK46]:** Again, maybe a good place to use bullet points instead of numbers

##### 7.4.4.2 Sequence Diagram

[OB]

### 7.4.4.3 User Interface Storyboard

**DEBTOR PROFILE (DC View)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Debtor A, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

**Edit Profile**

1. The branch manager or an assigned debt counsellor clicks the "Edit Profile" button in the bottom right corner of the page.

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Debtor A, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

Profile Version: [2019-03-11 4:43:51pm]

**Edit Profile**

2. The branch manager or assigned debt counsellor clicks on the information that they would like to edit.

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Enter Name, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

Profile Version: [2019-03-11 4:43:51pm]

**Edit Profile**

3. The branch manager or assigned debt counsellor types the updated, properly formatted information into the desired field.

**DEBTOR PROFILE (DC View)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Enter Name, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

**Edit Profile**

1.a. A debt counsellor that is not assigned to the selected debtor clicks the "Edit Profile" button in the bottom right corner. A "Permission Denied" pop-up is displayed and the debt counsellor is blocked from editing the profile.

**DEBTOR PROFILE (DC View)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Debtor A, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

**Permission Denied**  
You are not the assigned debt counsellor; therefore cannot edit this profile.  
**Continue**

**Edit Profile**

1.b. If any employee tries to edit a debtor profile while any other employee is editing the profile, an error message will appear. It will inform the employee that more than one employee cannot edit the same profile at the same time. The employee will click the continue option and

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Enter Name, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

Profile Version: [2019-03-11 4:43:51pm]

**Edit Profile**

3.a. The branch manager or assigned debt counsellor types the improperly formatted information into the desired field. They then click the "Save Changes" button in the bottom right corner of the screen.

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information: Name: Enter Name, ID: 123456, DOB: 1990-3-3, Address: 101 Ring Rd.

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

File Attachments: FinancialInfo.xlsx

Stage Management: Current Stage: Stage A

Profile Version: [2019-03-11 4:43:51pm]

**Save Changes**

**Commented [JK47]: What is invalid input?**

DEBTOR PROFILE - EDIT MODE (BM & DC)

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information  
Name: Debtor B  
ID: 123456  
DOB: 1990-3-3  
Address: 01 Ring Rd.

Upcoming Meetings  
2019-3-20 @ 2:00pm  
2019-4-20 @ 2:00pm

Stage Management  
Current Stage: Stage A

Profile Version: 2019-03-11 4:43:51pm

**4.** The branch manager or debt counsellor saves the updated information and updated profile by clicking "Save Changes" button in the bottom right corner. The "Save Changes" option only appears if changes have been made to the debtor profile.

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information  
Name: **Enter Name**  
ID: 123456  
DOB: 1990-3-3  
Address: 01 Ring Rd.

Upcoming Meetings  
2019-3-20 @ 2:00pm

**Invalid Input**  
\$\$\$\$ is not a valid name  
Please Enter a Valid Name  
Continue

Current Stage: Stage A

Profile Version: 2019-03-11 4:43:51pm

#### 7.4.5 Change Debtor Profile Version

The debtor profile version feature helps the BM and the debtor's assigned DC by providing them a view of what the debtor profile looked like at different points in time. These versions are stored anytime the debtor profile state is edited and saved. The BM and the debtor's assigned DC can also rollback the debtor profile to reflect the version they are viewing.

**Commented [JK48]: Grammar**

##### 7.4.5.1 Use Case Table

Actors	- Employee
Preconditions	<ol style="list-style-type: none"> <li>Employee has logged in</li> <li>Employee has navigated to the desired debtor profile</li> </ol>
Steps	<ol style="list-style-type: none"> <li>Employee selects the version list in the selected debtor profile</li> <li>DIM provides a list of dates and times that the profile had been edited</li> <li>Employee selects a version from the version list</li> <li>DIM displays what the profile looked like at that date and time</li> <li>Employee chooses to restore the version</li> <li>Latest edited version is added to the version list.</li> </ol>
Success Conditions	<ol style="list-style-type: none"> <li>The chosen version is reflected on the main debtor profile page</li> </ol>
Alternate Paths	<ol style="list-style-type: none"> <li>DIM displays what the profile looked like at that date and time but without the option to restore the version.</li> </ol>

#### **7.4.5.2 Sequence Diagram**

[66]

### 7.4.5.3 User Interface Storyboard

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC B Outstanding Balance: \$500

Personal Information Upcoming Meetings  
Name: Debtor A 2019-3-20 @ 2:00pm  
ID: 123456 2019-4-20 @ 2:00pm  
DOB: 1990-3-3  
Address: 101 Ring Rd.

Stage Management Current Stage: Stage A

Profile Version: 2019-03-11 4:43:51pm ▾

**Edit Profile**

1. If the employee wanted to change the version of the debtors profile to an older version, they would first have to navigate to the debtor profile page, then select the profile version list dropdown menu. Each element in the list is a different instance of when the profile was updated. Each element includes the date and time that the profile was saved.

↓

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC B Outstanding Balance: \$500

Personal Information Upcoming Meetings  
Name: Debtor A 2019-3-20 @ 2:00pm  
ID: 123456 2019-4-20 @ 2:00pm  
DOB: 1990-3-3  
Address: 101 Ring Rd.

Stage Management Current Stage: Stage A

Profile Version: 2019-03-11 4:43:51pm ▾

2019-02-11 3:43:51pm  
2019-01-11 2:43:51pm

2. A list of the saved profile date and time elements are displayed in chronological order.

↓

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC B Outstanding Balance: \$500

Personal Information Upcoming Meetings  
Name: Debtor A 2019-3-20 @ 2:00pm  
ID: 123456 2019-4-20 @ 2:00pm  
DOB: 1990-3-3  
Address: 101 Ring Rd.

Stage Management Current Stage: Stage A

Profile Version: 2019-03-11 4:43:51pm ▾

2019-02-11 3:43:51pm  
2019-01-11 2:43:51pm

ALT

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information Upcoming Meetings  
Name: Debtor A 2019-3-20 @ 2:00pm  
ID: 123456 2019-4-20 @ 2:00pm  
DOB: 1990-3-3  
Address: 101 Ring Rd.

Stage Management Current Stage: Stage A

Profile Version: 2019-02-11 3:43:51pm ▾

3. The employee can then select one of the elements in the list to view what the profile looked like at that exact date and time listed.

↓

3.a.i) If the unassigned DC selects one of the elements from the list, the profile updates to reflect what it looked like at the specified date and time. However, they will not be able to see a "save changes" option.

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A		Assigned Counsellor: DC A	Outstanding Balance: \$500
<b>Personal Information</b> Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.		<b>Upcoming Meetings</b> 2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm	
		<b>Stage Management</b> Current Stage: Stage X	
Profile Version: 2019-02-11 3:43:51pm			
<a href="#">Save Changes</a>			

4. After the employee selects one of the elements from the list, the profile updates to reflect what it looked like at the specified date and time.



**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A		Assigned Counsellor: DC A	Outstanding Balance: \$500
<b>Personal Information</b> Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.		<b>Upcoming Meetings</b> 2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm	
		<b>Stage Management</b> Current Stage: Stage X	
Profile Version: 2019-02-11 3:43:51pm			
<a href="#">Save Changes</a>			

5. Once the employee are sure they want to revert to the selected version, they then select save profile. If the profile is not any different



**DEBTOR PROFILE - EDIT MODE (BM & DC)**

Debtor A		Assigned Counsellor: DC A	Outstanding Balance: \$500
<b>Personal Information</b> Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.		<b>Upcoming Meetings</b> 2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm	
		<b>Stage Management</b> Current Stage: Stage X	
Profile Version: 2019-04-11 3:43:51pm			
<a href="#">Save Changes</a>			

6. After selecting save, it updates the version list to have a new element with the current date and time while reflecting what the profile looked like at the selected version. This can be seen if the version list is clicked again as seen above.

#### 7.4.6 Record Notes to Debtor Profile

This use case covers the functionality that allows an employee to enter a comment that may be used to summarize meetings or add additional debtor information.

Commented [JK49]: \*backspace\*

##### 7.4.6.1 Use Case Table

Actors	BM or DC assigned to debtor profile
Preconditions	1. Employee has logged in 2. Employee has navigated to the desired debtor profile
Steps	1. Employee selects option to add comment to debtor profile 2. An option is given to enter text 3. Employee enter their comment 4. An options is displayed to save the text 5. Employee selects saves 6. DIM displays the comment on the debtor profile
Success Conditions	1. The new comment appears on the debtor profile
Alternate Paths	

Commented [JK50]: spelling

Commented [DJ51]: typo

Commented [JK52]: inconsistent with UI model

##### 7.4.6.2 Sequence Diagram

[obj]

#### 7.4.6.3 User Interface Storyboard

**DEBTOR PROFILE (DC View)**

<b>Debtor A</b>		Assigned Counsellor: DC A	Outstanding Balance: \$500
<b>Personal Information</b> Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.		<b>Upcoming Meetings</b> 2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm ...	<b>Notes</b> Enter Notes Here 
		<b>Stage Management</b> Current Stage: Lead	<b>File Attachments</b> <a href="#">Upload</a> 
<a href="#">Edit Profile</a>			

The employee has logged in and navigated to the Debtor profile. If they want to add a note to the file they may do so by typing in the text box below the Notes header.



**DEBTOR PROFILE (DC View)**

<b>Debtor A</b>		Assigned Counsellor: DC A	Outstanding Balance: \$500
<b>Personal Information</b> Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.		<b>Upcoming Meetings</b> 2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm ...	<b>Notes</b> Divorced 
		<b>Stage Management</b> Current Stage: Lead	<b>File Attachments</b> <a href="#">Upload</a> 
<a href="#">Edit Profile</a>			

After typing the employee may save the text by clicking add note



DEBTOR PROFILE (DC View)

Calendar	My Debtors	Debt Counsellor	
Debtor A		Assigned Counsellor: DC A	Outstanding Balance: \$500
<u>Personal Information</u> Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.		<u>Upcoming Meetings</u> 2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm ⋮	<u>Notes</u> Enter Notes Here
		<u>Stage Management</u> Current Stage: <input type="button" value="Lead"/>	<u>File Attachments</u> FinancialInfo.xlsx
<a href="#">Edit Profile</a>			

The new note shows up in the debtor profile

**Commented [JK53]:** The UI to enter a note and where they are displayed should be next to each other. It isn't very intuitive when they are on opposite sides of the screen

## 7.4.7 View Outstanding Fees to 2Towers

Debtors may pay for their consultation fees to 2Towers on a postponed date and as a result will have outstanding payments that are due to 2Towers. In order to easily keep track of the outstanding payments due by individual debtors to 2Towers, the total amount of outstanding payments is shown on the debtor profile.

### 7.4.7.1 Use Case Table

Actors	- Employee
Preconditions	1. Employee has logged in 2. Employee has navigated to the desired debtor profile
Steps	1. Employee selects the view outstanding payments option 2. DIM displays the amount owed to 2Towers by the debtor
Success Condition	1. The employee sees the total amount due
Alternate Path	

### 7.4.7.2 Sequence Diagram

[8]

### 7.4.7.3 User Interface Storyboard

DC PROFILE

Calendar My Debtors Debt Counsellor

**View All Debtors >**

Create new debtor >

March 2019  
S M T W T F S  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

View Calendar >

The branch manager or debt counsellor clicks on the "View All Debtors" tile on their home page.

DEBTOR SEARCH (BM & DC)

Calendar My Debtors Debt Counsellor

**Create New Debtor**

Debtor Database

Search Type a Debtor Name Filters

Name	Debtor ID	Assigned Counsellor	Last Meeting
Debtor A	123456	Debt Coun. A	2018-10-27
Debtor B	234567	Debt Coun. B	2019-2-27

A list of all debtors is shown. The branch manager or debt counsellor clicks on the desired debtor profile.

DEBTOR PROFILE (DC View)

Calendar My Debtors Debt Counsellor

Debtor A Assigned Counsellor: DC A Outstanding Balance: \$500

Personal Information Upcoming Meetings Notes

Name: Debtor A  
ID: 123456  
DOB: 1990-3-3  
Address: 101 Ring Rd

Upcoming Meetings: 2019-3-20 @ 2:00pm, 2019-4-20 @ 2:00pm

Notes: Enter Notes Here

Stage Management Current Stage: Stage A

File Attachments Upload

File attachments: FinancialIndex.pdf

The selected debtor profile is displayed and the branch manager or debt counsellor is able to see the required information.

**Commented [JK54]:** UI Storyboard does not match the use case

CREATE NEW DEBTOR PROFILE(BM & DC)

Calendar My Debtors Debt Counsellor

Debtor A Assigned Counsellor: DC A Session Outstanding Balance: \$500

Personal Information First Meeting Initial Notes

Name: Debtor A  
ID: 123456  
DOB: 1990-3-3  
Address: 101 Ring Rd

First Meeting: 2019-3-20 PM

Initial Notes: Enter Notes Here

Stage Management Current Stage: Stage A

The branch manager or debt counsellor does not see the debt counsellor that they are looking for. They then click the "Create New Debtor" and are redirected to the "Create New Debtor" page.

### 7.4.8 Add File Attachment

An employee may wish to attach files to a debtor profile. This functionality is provided to add documents related to a given debtor to their associated debtor profile.

#### **7.4.8.1 Use Case Table**

Actors	- Employee
Preconditions	1. Employee has a profile on the DIM 2. Employee is logged into system 3. Employee is on the desired debtor profile
Steps	1. Employee selects the add new file option 2. Employee is prompted to submit a file from their computer 3. Employee selects a file on their computer 4. Employee is prompted to confirm file 5. Employee submits the selected file
Success Condition	1. File has been saved to the DIM's file storage system and can be downloaded via the debtor's profile.
Alternate Path	4.a.i Employee selects an existing file 4.a.ii. DIM notifies the employee of a possible overwrite 4.a.iii. Employee proceeds with adding new file

#### **7.4.8.2 Sequence Diagram**

[OBJ]

### 7.4.8.3 User Interface Storyboard

The storyboard illustrates the workflow for uploading a file to a debtor's profile:

- Initial Profile View:** The Debtor Profile (DC View) screen shows basic debtor information (Debtor A, Assigned Counsellor: DC A, Outstanding Balance: \$500), upcoming meetings, notes, and stage management.
- Upload Selection:** The user selects the "File Attachments Upload" button. A callout box highlights the "File Attachments Upload" button with a red arrow.
- File Selection Dialog:** A local file selection dialog is displayed, showing files from the Home, Desktop, and Work folders. The file "accounttransactions.docx" is selected.
- Confirmation Dialog:** A confirmation dialog asks, "Is this your desired file?" with "No" and "Yes" buttons. The "Yes" button is highlighted with a red arrow.
- Existing File Alert:** An alternative path is shown where the user is informed that the selected file already exists ("Your selected file is already saved") and asked if they want to proceed ("proceed").
- Final Profile View:** The debtor profile is updated to show the new file "accounttransactions.docx" listed under "File Attachments". A red circle highlights the newly uploaded file in the list.
- Success Message:** A note at the bottom states, "The new file shows up on the debtor profile."

**Commented [SG55]:** For the alternative path can they cancel if they don't want to overwrite?

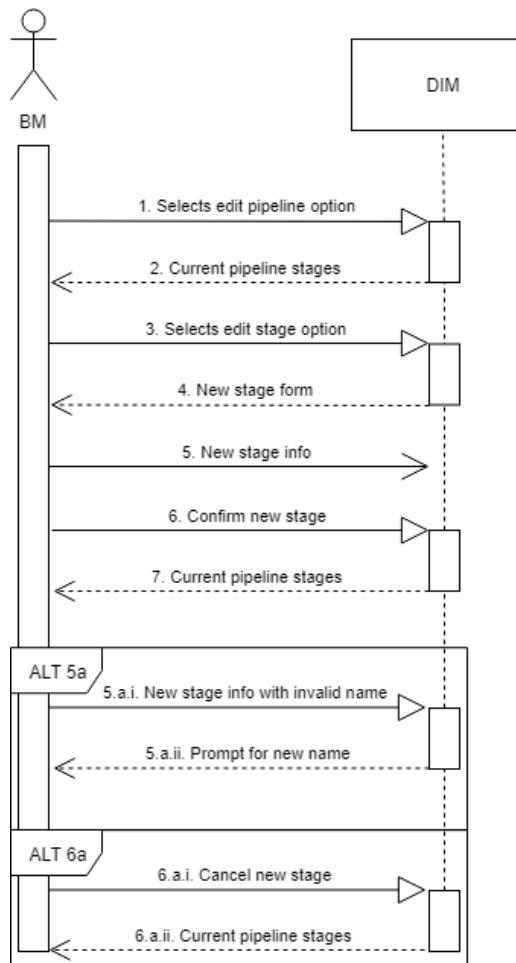
#### **7.4.9 Add New Stage**

The pipeline is designed to give full control over it to the BM. When a new scenario comes up, or possibly business or organizational changes take place, the BM may need to create new pipeline stages.

##### **7.4.9.1 Use Case Table**

Actors	- BM
Preconditions	1. The BM is logged into their profile.
Steps	1. The BM selects the “edit pipeline” option. 2. The DIM displays the current pipeline stages. 3. The BM selects the Add New Stage option. 4. The DIM prompts the BM for the new stage information. 5. The BM enters the name for the new stage, and specifies an amount of time that a debtor can be in this stage before being considered stuck. 6. The BM provides confirmation for creating the new stage. 7. The DIM displays all current pipeline stages.
Success Conditions	1. The new stage is created in the pipeline. 2. Each DC can assign the new stage to their debtor profiles.
Alternate Paths	5.a.i The entered name is invalid (blank, already exists, contains disallowed characters, or is too long). 5.a.ii The DIM prompts the BM to enter a new name. 6.a.i The BM decides not to add the new stage and cancels the operation. The pipeline is unaffected. 6.a.ii The DIM displays all current pipeline stages.

#### 7.4.9.2 Sequence Diagram



### 7.4.9.3 User Interface Storyboard

**BM PROFILE**

Debt Counsellors >	Calendar >	My Debtors >	<b>Edit Pipeline</b> (highlighted with a red arrow)	Branch Manager >

The branch manager selects the Edit Pipeline tab.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	Edit Delete
⋮	⋮	⋮

The DIM displays the current stages. To add a new stage, the branch manager selects the "Add New Stage" button.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	Edit Delete
New Stage	31 days	Confirm Cancel
⋮	⋮	⋮

The new stage pops up, and the branch manager can enter a name for it. They can also specify a time period, which after a debtor profile is in that stage for that amount of time, a warning appears to the assigned

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	Edit Delete
Stage 4	31 days	Confirm Cancel
⋮	⋮	⋮

If the branch manager decides not to add the new stage, they can cancel at any time.

ALT

STAGE MANAGEMENT (BM Only)

Debt Counsellors	Calendar	My Debtors	Edit Pipeline	Branch Manager	
Stage Name      Time before warning					
Lead	7 days		<a href="#">Edit</a>	<a href="#">Delete</a>	
New Client	14 days		<a href="#">Edit</a>	<a href="#">Delete</a>	
Recovered Debtor	-		<a href="#">Edit</a>	<a href="#">Delete</a>	
Stage 3	31 days		<a href="#">Edit</a>	<a href="#">Delete</a>	
Stage 4	31 days		<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Confirm</a>
⋮	⋮	⋮			

Once they are happy with the name, the branch manager presses the "Confirm" button. This adds the stage to the pipeline.

STAGE MANAGEMENT (BM Only)					
Debt Counsellors	Calendar	My Debtors	Edit Pipeline	Branch Manager	
<b>Stage Name</b>		<b>Time before warning</b>		<b>Add New Stage</b>	
Lead	7 days		Edit	Delete	
New Client	14 days		Edit	Delete	
Recovered Debtor	-		Edit	Delete	
Stage 3	31 days		Edit	Delete	
⋮	⋮	⋮	⋮	⋮	⋮
⋮					

If cancelled, the DIM displays all pipeline stages, which are unmodified by the cancelled edits.

STAGE MANAGEMENT (BM Only)			
<a href="#">Debt Counsellors</a> <a href="#">Calendar</a> <a href="#">My Debtors</a> <a href="#">Edit Pipeline</a> <a href="#">Branch Manager</a>			
Stage Name	Time before warning	<a href="#">Add New Stage</a>	
Lead	7 days	<a href="#">Edit</a>	<a href="#">Delete</a>
New Client	14 days	<a href="#">Edit</a>	<a href="#">Delete</a>
Recovered Debtor	-	<a href="#">Edit</a>	<a href="#">Delete</a>
Stage 3	31 days	<a href="#">Edit</a>	<a href="#">Delete</a>
Stage 4	31 days	<a href="#">Edit</a>	<a href="#">Delete</a>
⋮	⋮	⋮	⋮

The DIM displays all pipeline stages, including the new one. Debtor profiles can now be assigned to the new stage.

STAGE MANAGEMENT (BM Only)

Debt Counsellors	Calendar	My Debtors	Edit Pipeline	Branch Manager
Stage Name	Time before warning	Add New Stage		
Lead	7 days	Edit	Delete	
New Client	14 days	Edit	Delete	
Recovered Debtor	-	Edit	Delete	
Stage 3	31 days	Edit	Delete	
Stage 3	31 days	Confirm	Cancel	
⋮	⋮	⋮	⋮	⋮

In this case, as before, the branch manager tries to create a new stage. However, this time they enter a duplicate (or otherwise invalid) name.

#### **7.4.10 Edit a Stage**

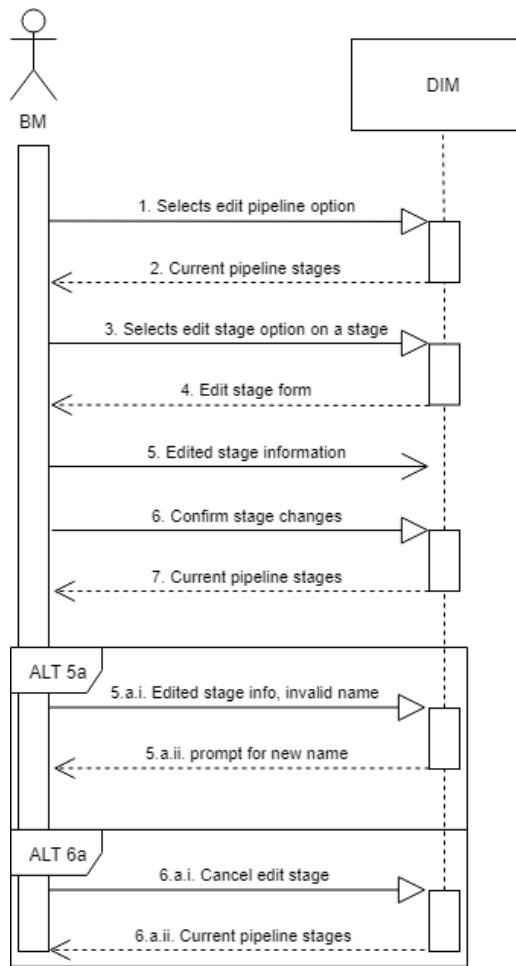
Pipeline stages are a feature that enable employees to view the progress their debtors have made towards their goal of being debt free. When 2Towers changes the way it runs its business, it will be able to modify

the pipeline, which includes adding, editing, and removing stages from the pipeline. This use case shows how a Branch Manager will be able to edit a stage.

#### **7.4.10.1 Use Case Table**

Actors	- BM
Preconditions	<ol style="list-style-type: none"> <li>1. The BM is logged into their profile.</li> <li>2. At least 1 stage is in the pipeline.</li> </ol>
Steps	<ol style="list-style-type: none"> <li>1. The BM selects the “edit pipeline” option.</li> <li>2. The DIM displays the current pipeline stages.</li> <li>3. The BM selects the edit option for a specific stage.</li> <li>4. The DIM prompts the BM to edit the stage information.</li> <li>5. The BM enters a new name and/or changes the time before a debtor is considered stuck in this stage.</li> <li>6. The BM provides confirmation for the change.</li> <li>7. The DIM redisplays the current stages.</li> </ol>
Success Conditions	<ol style="list-style-type: none"> <li>1. Each debtor profile in the modified stage are updated to use the new stage name and new time before warning. If this change causes some debtor profiles to be considered stuck, a warning is displayed to each of the debtors’ assigned DC as soon as possible.</li> </ol>
Alternate Paths	<ol style="list-style-type: none"> <li>5.a.i The entered name is invalid (blank, already exists, contains disallowed characters, or is too long).</li> <li>5.a.ii The DIM prompts the BM to enter a new name.</li> <li>6.a.i The BM decides not to change the stage. The BM cancels the changes, and the pipeline is not modified.</li> <li>6.a.ii The DIM displays all current pipeline stages.</li> </ol>

#### 7.4.10.2 Sequence Diagram



### 7.4.10.3 User Interface Storyboard

**BM PROFILE**

Debt Counsellors	Calendar	My Debtors	<b>Edit Pipeline</b>	Branch Manager
------------------	----------	------------	----------------------	----------------

The branch manager selects the Edit Pipeline tab.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	<b>Edit</b> Delete

The DIM displays the current stages. To edit an existing stage, the branch manager selects the "Edit" button on the stage they want to edit.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	<b>Edit</b> Save Cancel

The branch manager can then edit both the name and the time period before warnings are sent.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Recovering	31 days	<b>Save</b> Cancel

If the branch manager decides not to edit the stage, they can cancel at any time.

**Commented [JK56]:** What happens if a user clicks on edit or delete for a different stage while in the middle of editing one

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Recovering	31 days	Save Cancel
⋮	⋮	⋮

Once they are happy with their edits, the branch manager presses the "Confirm" button. This edits the stage in the pipeline.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	Edit Delete
⋮	⋮	⋮

If cancelled, the DIM displays all pipeline stages, which are unmodified by the cancelled edits.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Recovering	31 days	Edit Delete
⋮	⋮	⋮

The DIM displays all pipeline stages, including the edited one. Debtor profiles in the edited stage are modified to match the new stage name and time.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Stage 3	31 days	Save Cancel
⋮	⋮	⋮

In this case, as before, the branch manager tries to edit a new stage. However, this time they enter a duplicate (or otherwise invalid) name.

**STAGE MANAGEMENT (BM Only)**

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
Lead	31 days	Save Cancel
⋮	⋮	⋮

With the duplicate name, the DIM highlights the field to prompt for a new name. It also prevents the branch manager from saving it in this state. The branch manager can cancel, or they can change the name and proceed to edit the stage as explained above.

#### 7.4.11 Removing a Stage

Pipeline stages are a feature that enable employees to view the progress their debtors have made towards their goal of being debt free. When 2Towers changes the way it runs its business, it will be able to modify

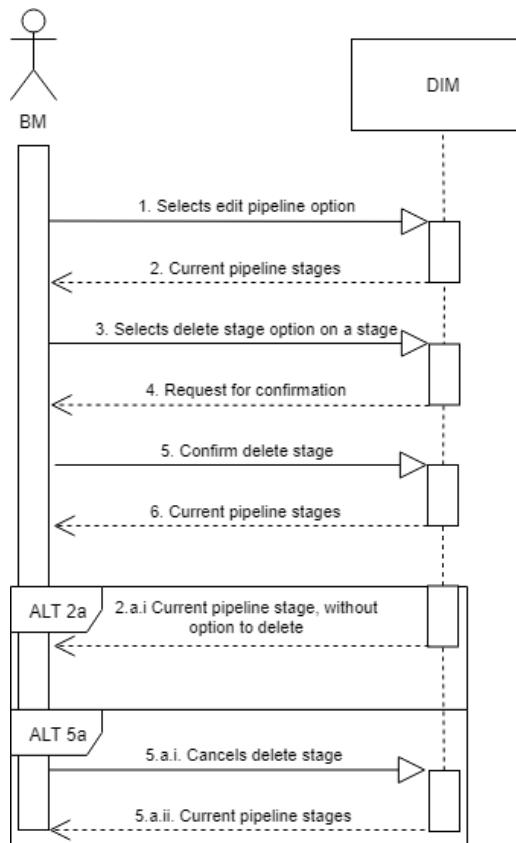
the pipeline, which includes adding, editing and removing stages from the pipeline. This use case shows how a Branch Manager will be able to remove a stage.

#### 7.4.11.1 Use Case Table

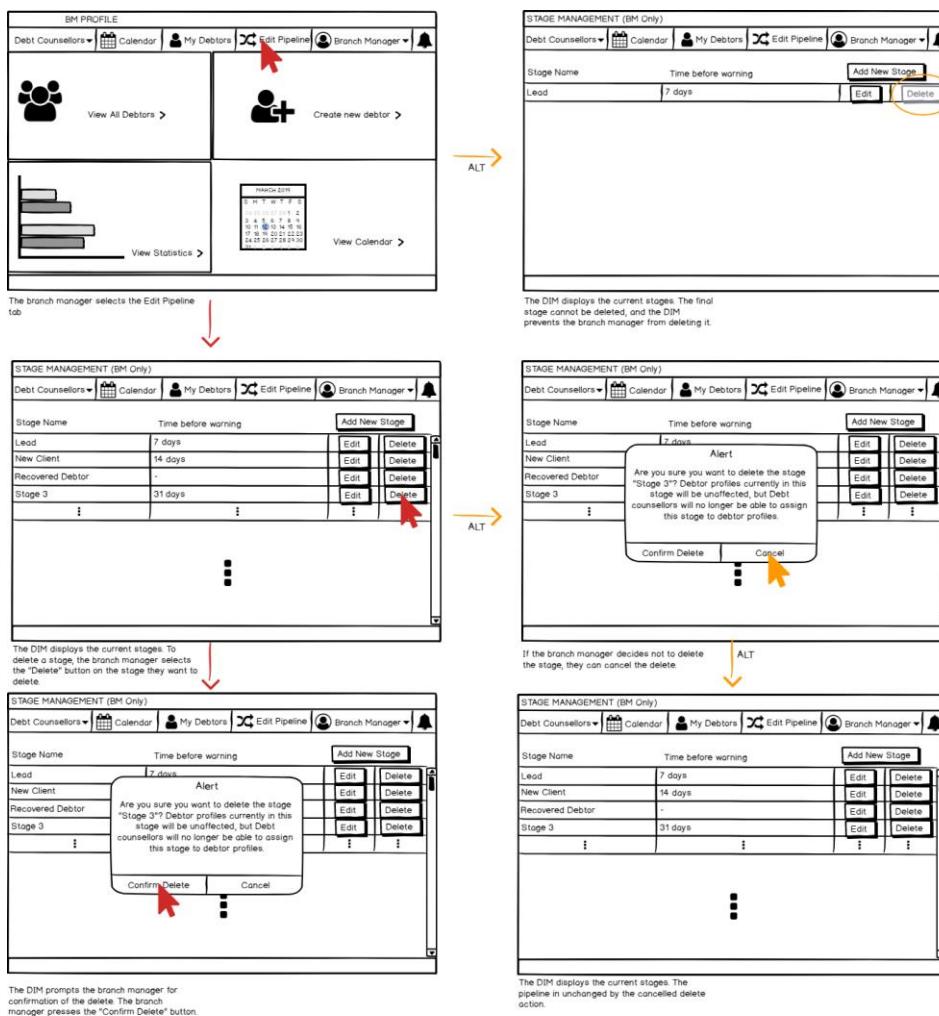
Actors	- BM
Preconditions	<ol style="list-style-type: none"> <li>1. BM is logged into their profile.</li> <li>2. At least 2 stages are in the pipeline</li> </ol>
Steps	<ol style="list-style-type: none"> <li>1. The BM selects the “edit pipeline” option.</li> <li>2. The DIM displays the current pipeline stages.</li> <li>3. The BM selects the delete option for the stage to be removed.</li> <li>4. The DIM prompts the BM for confirmation.</li> <li>5. The BM confirms the deletion.</li> <li>6. The DIM displays the remaining pipeline stages.</li> </ol>
Success Conditions	<ol style="list-style-type: none"> <li>1. The stage is removed from the pipeline, and each DC can no longer assign that stage to debtors.</li> <li>2. Debtor profiles that are currently in that stage are unaffected.</li> </ol>
Alternate Paths	<p>2.a.i There is only a single stage in the pipeline. The DIM displays it without the option to delete it.</p> <p>5.a.i The BM decides not to delete the stage. The BM cancels the deletion, and the pipeline is not modified.</p> <p>5.a.ii The DIM displays the current pipeline stages.</p>

**Commented [JK57]:** If debtors can be in an undefined state, why can't they delete the only defined state?

#### 7.4.11.2 Sequence Diagram



### 7.4.11.3 User Interface Storyboard



**STAGE MANAGEMENT (BM Only)**

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Delete

Stage Name	Time before warning	Add New Stage
Lead	7 days	Edit Delete
New Client	14 days	Edit Delete
Recovered Debtor	-	Edit Delete
⋮	⋮	⋮ ⋮

The DIM displays the remaining stages. All debtor profiles in the deleted stage are unaffected, but other debtor profiles can no longer be set to the deleted stage.

#### 7.4.12 View Stage Statistics

Pipeline stages are a feature that enable employees to view the progress their debtors have made towards their goal of being debt free. The ability to see the number of people in individual stages and the average time spent in a stage are important to 2Towers, as they will use this information to develop strategies that will improve the flow of debtors from one stage to another.

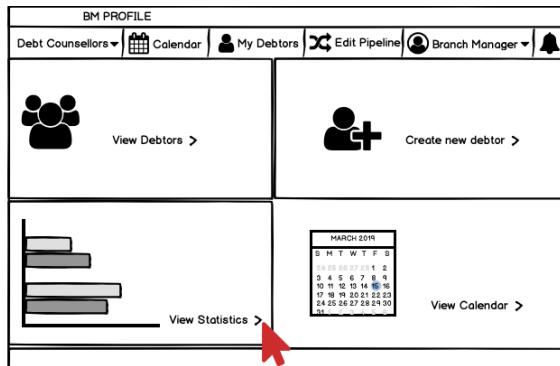
##### 7.4.12.1 Use Case Table

Actors	- BM
Preconditions	<ol style="list-style-type: none"> <li>1. BM has logged in</li> <li>2. BM is on home page</li> </ol>
Steps	<ol style="list-style-type: none"> <li>1. BM selects option to view list of stages</li> <li>2. A list of stages is displayed</li> <li>3. BM selects a stage</li> <li>4. Statistical information of the selected stage is shown along with a list of all the debtors currently in that stage.</li> </ol>
Success Conditions	<ol style="list-style-type: none"> <li>1. The BM views the statistical information displayed in the DIM</li> </ol>
Alternate Paths	

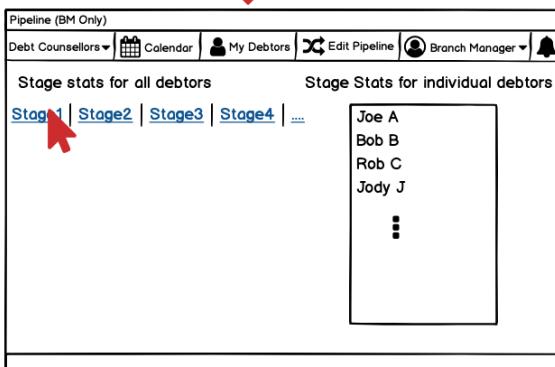
#### **7.4.12.2 Sequence Diagram**

[]

#### **7.4.12.3 User Interface Storyboard**



The Branch Manager has logged in and is on their home page. They wish to view stage statistic so they click the statistics option.



The branch manager selects the stage for which they wish to view stats



Pipeline (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Bell

[Stage1](#) | [Stage2](#) | [Stage3](#) | [Stage4](#) | .... Debtors currently in Stage 1

Stage 1:

Average time in Stage 1: 1 month  
Number of debtors currently in Stage 1: 23

Joe A
Bob B
Rob C
Jody J
⋮

The stats for the desired stage are displayed.

#### 7.4.13 View Debtor Statistics

Pipeline stages are a feature that enable employees to view the progress their debtors have made towards their goal of being debt free. [The ability to access debtor statistics is important to 2Towers as they will use this information to develop strategies that will enable the debtor to flow through the pipeline and become debt free.

Commented [JK58]: \*space\*

##### 7.4.13.1 Use Case Table

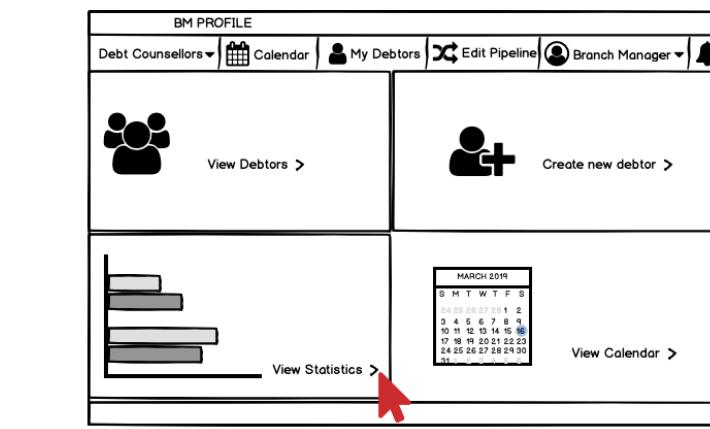
Actors	- BM
Preconditions	1. BM has logged in 2. BM is on home page
Steps	1. BM selects option to view statistics 2. A list of debtor profiles is displayed 3. BM selects a debtor profile to view the Debtor statistics for that profile 4. The debtor statistics for the selected debtor profile is shown
Success Conditions	1. The BM views the statistical information displayed in the DIM
Alternate Paths	

Commented [JK59]: \*backspace\*

##### 7.4.13.2 Sequence Diagram

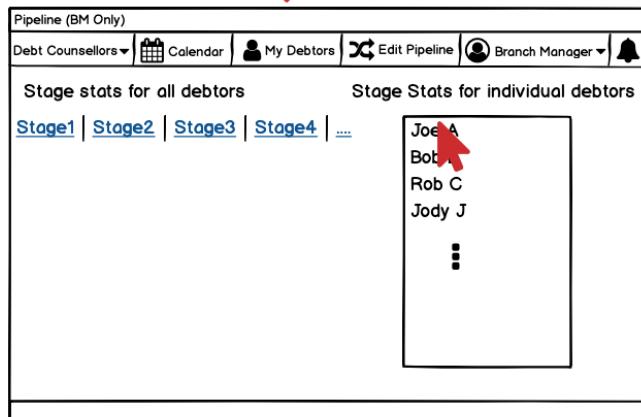
[OB]

#### 7.4.13.3 User Interface Storyboard



**Commented [JK60]:** See the 2 titles about Stages and Individuals. The use of capitalization is inconsistent.

The Branch Manager has logged in and is on their home page. They wish to view debtor statistic so they click the statistics option.



The branch manager selects the debtor profile for which they wish to view stats

The screenshot shows a web-based application titled "Pipeline (BM Only)". At the top, there is a navigation bar with links for "Debt Counsellors", "Calendar", "My Debtors", "Edit Pipeline", "Branch Manager", and a notification bell. Below the navigation bar, the main content area is titled "Debtors currently in Stage 1". It displays "Joe A Stats" and three columns representing different stages:

Stage 1	Stage 2	Stage 3
Time spent: 2 mo From Jan-Mar	Time spent: 1 mo From Mar-Apr	Time spent: 2 mo From July-Sep

To the right of these columns, a summary box contains the following information:

- Total time in stage 1: 2mo
- Total time in stage 2: 1mo
- Total time in stage 3: 2mo
- Total time in pipeline: 6mo

The stats for the desired debtor profile are displayed.

**Commented [JK61]:** Not clear what type of stats are being displayed. The title implies it's stats for stage 1 but the displayed content looks like it reflects an individual user. The use case is for debtor statistics not stage... If it is for stage 1 then why are there stats for stage 2 and 3?

#### 7.4.14 Move Debtor to New Stage

Pipeline stages are a feature that enable employees to view the progress their debtors have made towards their goal of being debt free. The ability to move a debtor to a new stage in the pipeline is important for the BM and each DC to keep the debtors progress up-to-date and provide a tailored experience to each individual debtor.

##### 7.4.14.1 Use Case Table

Actors	- Employee
Preconditions	<ol style="list-style-type: none"> <li>1. Employee has logged in</li> <li>2. Employee has navigated to the desired debtor profile (See use case 7.6 “Navigating to Debtor Profile”)</li> </ol>
Steps	<ol style="list-style-type: none"> <li>1. Employee enters edit mode in the selected debtor profile</li> <li>2. <del>Editable debtor main profile page is displayed</del></li> <li>3. Employee navigates to the stage management section of the debtor profile</li> <li>4. <del>The available stages are displayed</del></li> <li>5. Employee choose a stage</li> <li>6. Chosen stage is displayed</li> <li>7. Employee saves the changes on the profile</li> <li>8. <del>The chosen stage is reflected on the main debtor profile page</del></li> </ol>
Success Conditions	<ol style="list-style-type: none"> <li>1. The selected stage is shown with the listed debtor profile and the change is seen by all employees</li> </ol>
Alternate Paths	<ol style="list-style-type: none"> <li>5.a.i. <del>BM does not see desired pipeline stage</del></li> <li>5.a.ii. See use case “Adding Stage to the Pipeline”</li> </ol>

**Commented [JK62]:** This step is redundant. Step 1 handles this

**Commented [JK63]:** Where are steps 5 and 6?

**Commented [JK64]:** Is this not the success condition?

**Commented [JK65]:** Is there no way to cancel this process?

##### 7.4.14.2 Sequence Diagram

[OB]

### 7.4.14.3 User Interface Storyboard

**DEBTOR PROFILE (DC View)**

1. The employee selects the "Edit Profile" button in the bottom right corner of the Debtor profile page.

**DEBTOR PROFILE - EDIT MODE (BM & DC)**

2. The employee clicks on the drop down arrow next to the debtors current stage.

**DEBTOR PROFILE - EDIT MODE (DC)**

3. The drop down menu displayed to the debt counsellor shows a list of the available stages. The debt counsellor selects the stage that they wish to assign the debtor. Once the stage is selected the click the "Save Changes" button in the bottom right corner.

**DEBTOR PROFILE - EDIT MODE (BM)**

2.a.i. The drop down menu displayed to the branch manager shows a list of the available stages as well as an option to "Create New Stage". The branch manager selects this option if they do not see the stage that they wish to assign the debtor.

**STAGE MANAGEMENT (BM Only)**

2.a.ii. The branch manager can now add a new stage. See "Add a New Stage" use case.

#### 7.4.15 Navigate to Google Calendar

Allows the user to be redirected to Google Calendar that is linked to their profile.

##### 7.4.15.1 Use Case Table

Actors	- Employee
Preconditions	1. Employee is logged into their profile
Steps	1. Employee selects the Calendar 2. Access is granted
Success Conditions	1. The employee is redirected to Google Calendar
Alternate Paths	

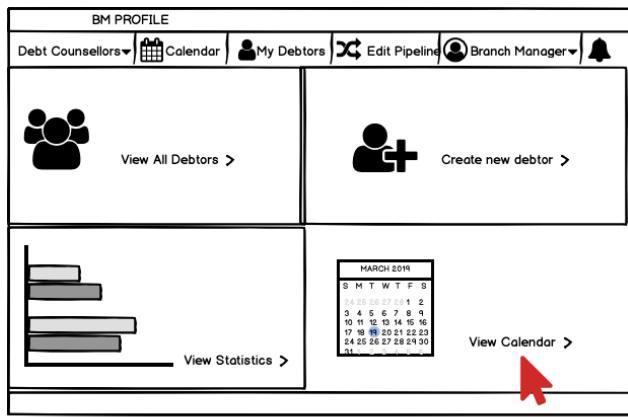
**Commented [JK66]:** This is basically the success condition

**Commented [DJ67R66]:** and based on this, if it turns into a 1 step use case, you'll want to think of something else to add since the TA told us to never have use cases this small

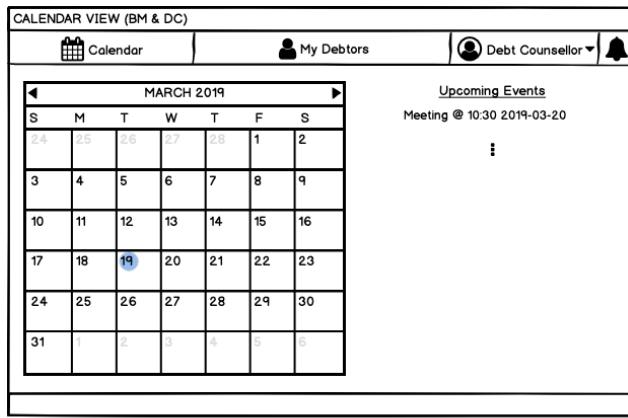
##### 7.4.15.2 Sequence Diagram

[@]

### 7.4.15.3 User Interface Storyboard



The employee is logged into their account and the home page is displayed. To get to the calendar, the user selects "View Calendar". The employee will then be redirected to Google Calendar.



The employee is redirected to Google Calendar, which is displayed.

#### 7.4.16 Dismiss Warning

Warnings occur when debtors are approaching their deadlines. This allows the employee to notify them and such if they need to be reminded again, the option is available to them. Warnings are sent in the app as they occur as well as via email.

##### 7.4.16.1 Use Case Table

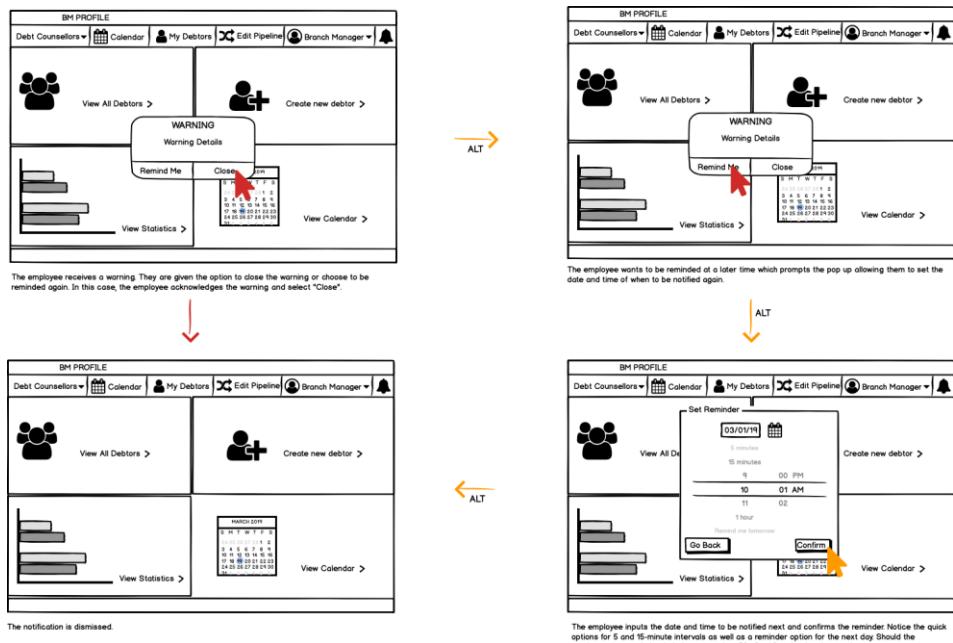
Actors	- Employee
Preconditions	1. Employee is logged into their profile
Steps	1. Employee receives a warning 2. Warning is displayed 3. Employee closes the warning
Success Conditions	1. The warning displayed disappears
Alternate Paths	2.a.i. Employee chooses to be reminded later 2.a.ii. Input for when to be notified again is displayed 2.a.iii. Employee specifies when to be reminded again 2.a.iv. Employee saves changes

Commented [DJ68]: Consider re-phrasing

##### 7.4.16.2 Sequence Diagram

[88]

### 7.4.16.3 User Interface Storyboard



#### **7.4.17 Add New DC Account**

This use case is strictly for the BM. A BM would create an account for a DC by entering the DC's Google email into DIM. DIM would generate an ID for the respective DC; the BM can then inform the new DC of their assigned login ID to be used to log into DIM.

##### **7.4.17.1 Use Case Table**

Actors	- BM
Preconditions	<ol style="list-style-type: none"><li>1. BM has logged in</li><li>2. BM is in the window that would show the list of DC accounts</li></ol>
Steps	<ol style="list-style-type: none"><li>1. BM selects option to create a new DC account</li><li>2. BM is prompted to fill the create account form</li><li>3. BM fills out form</li><li>4. BM submits form</li><li>5. BM is notified that DC account has been successfully created</li></ol>
Success Conditions	<ol style="list-style-type: none"><li>1. The new DC account is shown listed in the existing list of DC accounts.</li></ol>
Alternate Paths	<ol style="list-style-type: none"><li>2.a.i BM exits account creating mode</li><li>4.a.i BM didn't enter a valid email address</li><li>4.a.ii BM notified that email address is invalid</li><li>4.a.iii BM is prompted to reenter the create account form with a valid email address</li></ol>

##### **7.4.17.2 Sequence Diagram**

[Diagram]

### 7.4.17.3 User Interface Storyboard

**BM PROFILE**

Debt Counsellors View All Debtors Create new debtor

View Statistics View Calendar

BM has logged into the system and lands on the home page. BM then selects the 'Debt Counsellors' tab to view the page of listed DC accounts.

**LIST OF DEBT COUNSELLORS (BM Only)**

Debt Counsellors Search Type a Debt Counsellor Name Filters +

Name	Employee ID	...
Debt Counsellor A	123456	
Debt Counsellor B	234567	

BM selects on the plus node to enter mode to create new DC account.

**Debt Counsellor Database**

Adding new DC Account Filters +

Gmail example@gmail.com

Create

BM is prompted to enter the new DC's gmail.

**Debt Counsellor Database**

Adding new DC Account Filters +

Gmail example@gmail.com

Create

ALT

BM selects outside of the lightbox to exit the deletion process.

**Debt Counsellor Database**

Adding new DC Account Filters +

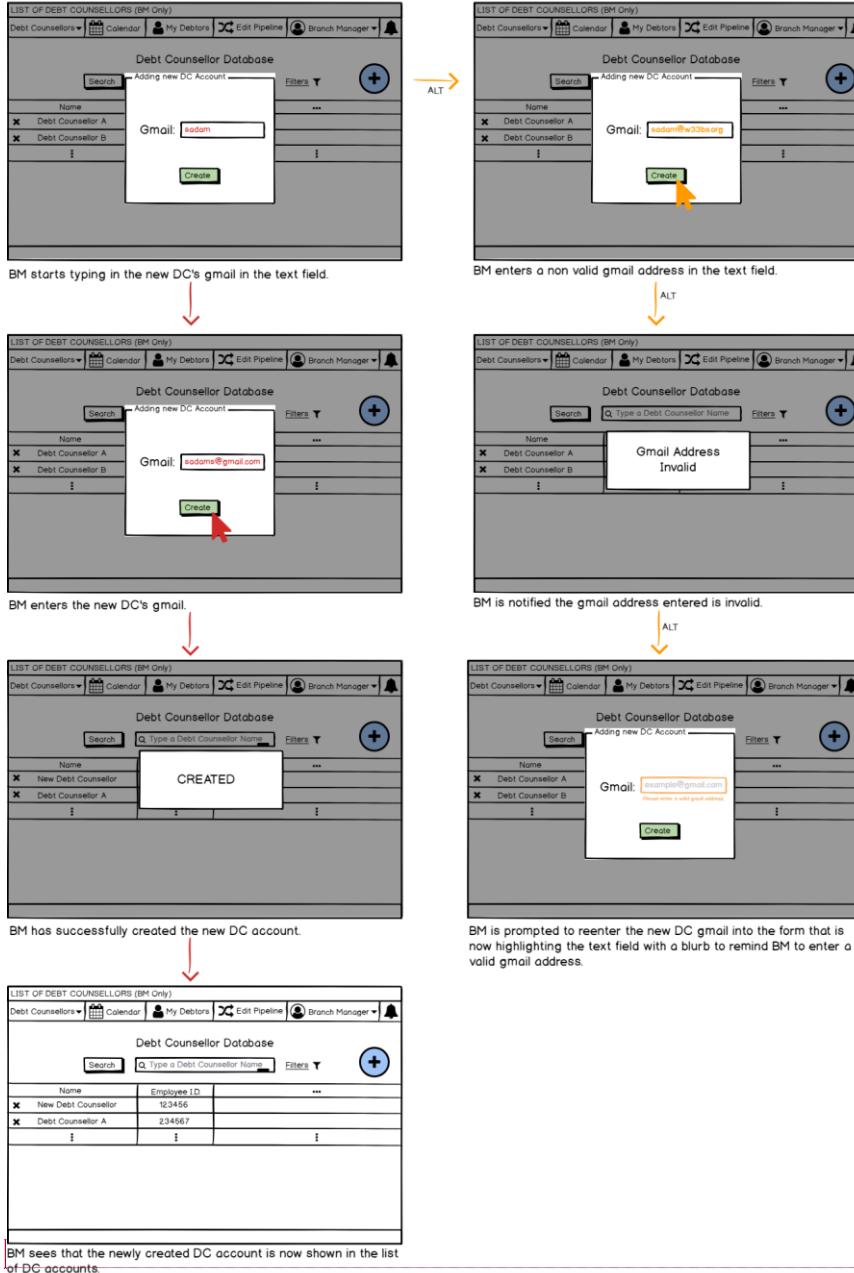
Name	Employee ID	...
Debt Counsellor A	123456	
Debt Counsellor B	234567	

BM has exited mode to create new DC account and resume the previous state of their page.

**Commented [JK69]:** Would be more clear if the plus button was replaced with Add Debt Counselor

**Commented [JK70]:** Alt path 2.a.i says exit deletion process. It should be creating process no?





**Commented [JK71]:** The ID's don't appear to be unique. The new DC has the ID DC "A" used to have. They should be unique to each user and not change when users are added or deleted.

#### 7.4.18 Promoting a DC to BM

In the case a Debt Counsellor is to be promoted to the new Branch Manager, the Branch Manager must give them access via a button. From there, once the changes are made, the former Branch Manager is demoted and inherits the DC privileges while the newly promoted Branch Manager gains access to their new privileges.

##### 7.4.18.1 Use Case Table

Actors	- BM
Preconditions	1. BM is logged into their profile
Steps	1. BM gathers the list of DC accounts 2. DC accounts are displayed 3. BM promotes a selected DC 4. Generates a confirmation 5. BM confirms changes 6. DC is promoted to BM
Success Conditions	1. The promoted DC credentials are converted to BM privileges 2. The BM credentials are converted to DC privileges
Alternate Paths	

**Commented [JK72]:** They should be able to cancel the promotion process

##### 7.4.18.2 Sequence Diagram

[OB]

### 7.4.18.3 User Interface Storyboard

BM PROFILE

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager |

View All Debtors >

Create new debtor >

MARCH 2015

S	M	T	W	T	F	S
					1	2
					3	4
					5	6
					7	8
					9	10
					11	12
					13	14
					15	16
					17	18
					19	20
					21	22
					23	24
					25	26
					27	28
					29	30

[View Statistics >](#) [View Calendar >](#)

The BM is logged into their account and the home page is displayed. The BM then selects "Debt Counsellors".



LIST OF DEBT COUNSELLORS (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager |

**Debt Counsellor Database**

Search | Type a Debt Counsellor Name | Filters ▾

Name	Employee ID	...
Debt Counsellor A	123456	<a href="#">Promote Profile</a>
Debt Counsellor B	234567	<a href="#">Promote Profile</a>
⋮	⋮	⋮

The list of DC's are displayed and the BM chooses the DC to be promoted by selecting "Promote Profile".



LIST OF DEBT COUNSELLORS (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager |

**Debt Counsellor Database**

Search | Attention | Filters ▾

Are you sure you want to promote this user?

Name	Employee ID	...
Debt Counsellor A	123456	<a href="#">Promote Profile</a>
Debt Counsellor B	234567	<a href="#">Promote Profile</a>
⋮	⋮	⋮

The BM confirms changes and the DC is now a BM.

**Commented [JK73]:** The button and notification just say promote. It would be clearer if the notification read "Are you sure you want to promote this user to a Branch Manger?"

**Commented [JK74R73]:** Also if there can only be one BM it should be clear that the current BM will lose the BM role and be demoted to a DC

#### 7.4.19 Remove DC account

This use case is strictly for the BM and assumes the BM has logged in to DIM and is viewing a list of DC accounts. Each listed DC account has the option for the BM to delete the account. Before a successful deletion, the BM would need to confirm the deletion process. After a successful deletion, the deleted DC credentials would be stripped from DIM's database and if the DC was logged into DIM then they would be immediately logged out; the DC would not be notified of their account deletion and should know to contact the BM for inquiries.

##### 7.4.19.1 Use Case Table

Actors	- BM
Preconditions	<ol style="list-style-type: none"><li>1. BM has logged in</li><li>2. BM is on home page</li><li>3. BM has <del>a</del> existing list of DC accounts</li></ol>
Steps	<ol style="list-style-type: none"><li>1. BM selects delete on a selected DC account</li><li>2. BM is prompted to confirm deletion process</li><li>3. BM confirms deletion on the selected account</li><li>4. BM is notified of successful deletion</li></ol>
Success Conditions	<ol style="list-style-type: none"><li>1. The account has been successfully deleted from the DIM's employee database</li><li>2. The deleted DC would be logged out of their account and the DC's login credentials would be removed from DIM's database</li></ol>
Alternate Paths	<ol style="list-style-type: none"><li>3.a.i BM does not confirm the deletion process</li><li>3.a.ii BM is exited out of deletion mode</li></ol>

Commented [JK75]: an\*

#### **7.4.19.2 Sequence Diagram**

[]

### 7.4.19.3 User Interface Storyboard

BM has logged into the system and lands on the home page. BM then selects the 'Debt Counsellors' tab.

BM is directed to the 'List of debt counsellors' page.

BM selects the 'x' button to delete the DC account.

BM is shown a deletion confirmation lightbox.

BM selects 'NO'.

LIST OF DEBT COUNSELLORS (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Bell

**Debt Counsellor Database**

Deletion Confirmation

You are about to delete Debt Counsellor A

BM selects 'YES'.

LIST OF DEBT COUNSELLORS (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Bell

**Debt Counsellor Database**

Search  Filters

Name	Employee ID	...
Debt Counsellor A	123456	⋮
Debt Counsellor B	234567	⋮
⋮	⋮	⋮

ALT

LIST OF DEBT COUNSELLORS (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Bell

**Debt Counsellor Database**

Search  Filters

Name	Employee ID	...
Debt Counsellor B	123456	⋮
Debt Counsellor C	234567	⋮
⋮	⋮	⋮

BM is notified the account has been successfully deleted.

LIST OF DEBT COUNSELLORS (BM Only)

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Bell

**Debt Counsellor Database**

Search  Filters

Name	Employee ID	...
Debt Counsellor B	123456	⋮
Debt Counsellor C	234567	⋮
⋮	⋮	⋮

BM sees that the selected DC account no longer appears in the list of DC accounts.

**Commented [JK76]:** Why does the DC "C" that appears after deleting DC "B" have the same ID as DC "B"

**Commented [SG77R76]:** Also, for the last mockup, delete option for DC "B" is missing and there is a delete option on the box to display more.

#### **7.4.20 Change DC assigned to debtor**

A BM may choose to assign a given debtor to a new DC. This functionality is facilitated through the BM account.

##### **7.4.20.1 Use Case Table**

Actors	- BM
Preconditions	<ol style="list-style-type: none"><li>1. BM has logged in</li><li>2. BM has navigated to the desired debtor profile</li></ol>
Steps	<ol style="list-style-type: none"><li>1. BM selects option to reassign DC</li><li>2. List of DCs is displayed</li><li>3. BM selects desired DC</li><li>4. BM confirms selection</li></ol>
Success Conditions	<ol style="list-style-type: none"><li>1. The debtor has been re-assigned to a new DC</li></ol>
Alternate Paths	<ol style="list-style-type: none"><li>4. BM does not confirm selection and the debtor profile is displayed</li></ol>

##### **7.4.20.2 Sequence Diagram**

[88]

### 7.4.20.3 User Interface Storyboard

**DEBTOR PROFILE (BM View)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | **Reassign**

Debtor A Assigned Counselor: DC A | Outstanding Balance: \$500

The BM attempts to reassign a new DC to a debtor. They click on the Reassign button

**LIST OF DEBT COUNSELLORS (BM Only)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | **Reassign**

Debt Counsellor Database

Name	Employee ID	...
Debt Counsellor A	123456	
Debt Counsellor B	234567	

The BM selects a new debt counsellor from a list of DC

**LIST OF DEBT COUNSELLORS (BM Only)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | **Reassign**

Debt Counsellor Database

Name	Employee ID	...
Debt Counsellor A	123456	
Debt Counsellor B	234567	

**Confirm reassignment**

No	Yes
----	-----

**DEBTOR PROFILE (BM View)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | **Reassign**

Debtor A Assigned Counselor: DC A | Outstanding Balance: \$500

The BM decides not to reassign the selected DC

**DEBTOR PROFILE (BM View)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | **Reassign**

Debtor B Assigned Counselor: DC A | Outstanding Balance: \$500

The BM confirms their selection of DC by selecting yes

**DEBTOR PROFILE (BM View)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | **Reassign**

Debtor A Assigned Counselor: DC A | Outstanding Balance: \$500

**Commented [JK78]:** Are they clicking on an 'x' to select a the DC? This seems counter intuitive

**Commented [SG79R78]:** BM should be able to cancel reassignment without having to select a debt counsellor first.

**Commented [SG80R78]:** Was debtor A in all mockups and is debtor B when BM is redirected after confirmation.

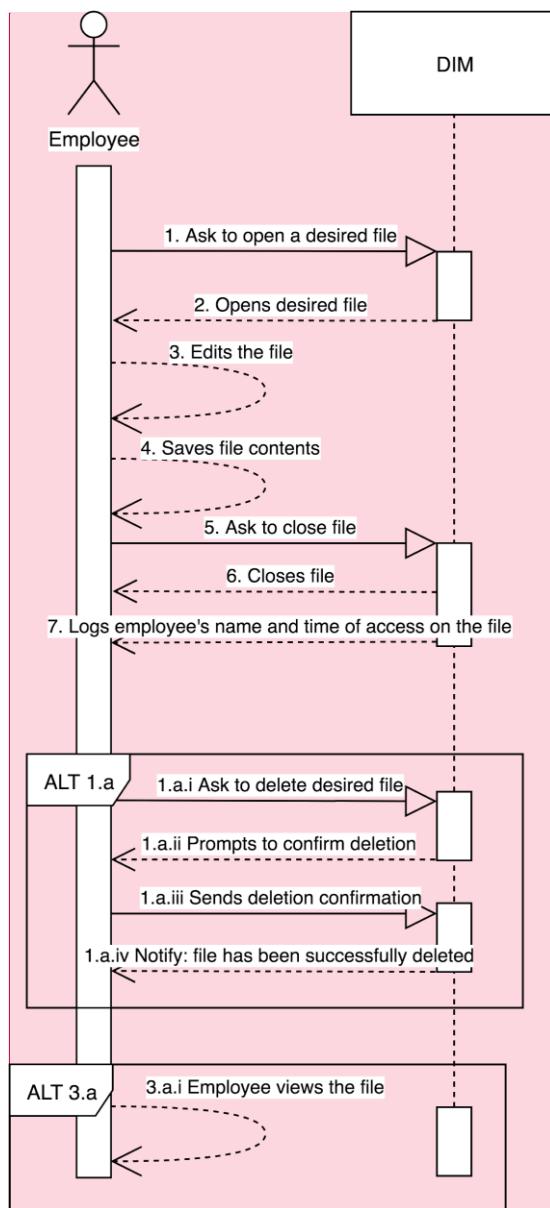
#### **7.4.21 Access debtor files**

The employee can view debtor files by selecting on the uploaded files that are accessible through in the desired debtor profile. The DIM would open the file and the employee can view or make any changes to the file; it is important to note that DIM doesn't access any information in the files and is only responsible for storing the files and logging down the latest employee who accessed the file with a time stamp. This use case assumes that only one employee enters the file at a time.

##### **7.4.21.1 Use Case Table**

Actors	- Employee
Preconditions	<ol style="list-style-type: none"><li>1. Employee has logged in</li><li>2. Employee has navigated to the desired debtor profile</li></ol>
Steps	<ol style="list-style-type: none"><li>1. Employee requests to open a desired file</li><li>2. DIM opens the file</li><li>3. Employee edits the file</li><li>4. Employee saves the file contents</li><li>5. Employee closes the file</li></ol>
Success Conditions	<ol style="list-style-type: none"><li>1. The file is successfully updated and the employee ID who made the changes is logged</li></ol>
Alternate Paths	<ol style="list-style-type: none"><li>3.a.i Employee views the file</li><li>1.a.i Employee requests to delete a desired file</li><li>1.a.ii Employee is prompted to confirm deletion on the desired file</li><li>1.a.iii Employee confirms deletion on the desired file</li><li>1.a.iv Employee sees that the file has been successfully deleted</li></ol>

#### 7.4.21.2 Sequence Diagram



### 7.4.21.3 User Interface Storyboard

Please note that this storyboard applies to both BM and DC and assumes the file shown hasn't been accessed by any employee.

**Commented [DJ82]:** In our version of the document, the diagram is cut off on the right side

DEBTOR PROFILE (BM View)

Debt Counsellors	Calendar	My Debtors	Edit Pipeline	Branch Manager
------------------	----------	------------	---------------	----------------

**Debtor A** Assigned Counsellor: DC A Recession Outstanding Balance: \$500

**Personal Information**  
Name: Debtor A  
ID: 123456  
D.O.B: 1990-3-3  
Address: 101 Ring Rd.

**Upcoming Meetings**  
2019-3-20 @ 2.00pm  
2019-4-20 @ 2.00pm

**Notes**  
Enter Notes Here

**Stage Management**  
Current Stage: Stage A  [View Stage Statistics](#) [Edit Pipeline](#)

**File Attachments**   
[FinancialInfo.xlsx](#)

[Delete Profile](#) [Edit Profile](#) [Previous Versions](#)

Employee is viewing the desired debtor profile



DEBTOR PROFILE (BM View)

Debt Counsellors	Calendar	My Debtors	Edit Pipeline	Branch Manager
------------------	----------	------------	---------------	----------------

**Debtor A** Assigned Counsellor: DC A Recession Outstanding Balance: \$500

**Personal Information**  
Name: Debtor A  
ID: 123456  
D.O.B: 1990-3-3  
Address: 101 Ring Rd.

**Upcoming Meetings**  
2019-3-20 @ 2.00pm  
2019-4-20 @ 2.00pm

**Notes**  
Enter Notes Here

**Stage Management**  
Current Stage: Stage A  [View Stage Statistics](#) [Edit Pipeline](#)

**File Attachments**   
[FinancialInfo.xlsx](#)

[Delete Profile](#) [Edit Profile](#) [Previous Versions](#)

Employee selects option to delete the desired file from the debtor's profile

DEBTOR PROFILE (BM View)

Debt Counsellors	Calendar	My Debtors	Edit Pipeline	Branch Manager
------------------	----------	------------	---------------	----------------

**Debtor A** Assigned Counsellor: DC A Recession Outstanding Balance: \$500

**Personal Information**  
Name: Debtor A  
ID: 123456  
D.O.B: 1990-3-3  
Address: 101 Ring Rd.

**Deletion Confirmation**

You are about to delete FinancialInfo.xlsx

[View Stage Statistics](#) [Edit Pipeline](#)

[Delete Profile](#) [Edit Profile](#) [Previous Versions](#)

Employee confirms the deletion process on the desired file



**Commented [JK83]:** Why is Current Stage a Dropdown when the profile isn't in edit mode? This is not consistent with User Case: Move Debtor to New Stage.

ALT

**DEBTOR PROFILE (BM View)**

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Delete

**Debtor A** Assigned Counsellor: DC A [Reassign](#) Outstanding Balance: \$500

<b>Personal Information</b>	<b>Upcoming Meetings</b>	<b>Notes</b>
Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.	2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm	Enter Notes Here  <b>DELETED</b>
<b>Stage Management</b> Current Stage: Stage A <a href="#">View Stage Statistics</a> <a href="#">Edit Pipeline</a>		
<b>File Attachments</b> <a href="#">Upload</a>  ClientMeeting2.docx		

[Delete Profile](#) [Edit Profile](#) [Previous Versions](#)

Employee is notified of successful deletion on the desired file

ALT

**DEBTOR PROFILE (BM View)**

Debt Counsellors | Calendar | My Debtors | Edit Pipeline | Branch Manager | Delete

**Debtor A** Assigned Counsellor: DC A [Reassign](#) Outstanding Balance: \$500

<b>Personal Information</b>	<b>Upcoming Meetings</b>	<b>Notes</b>
Name: Debtor A ID: 123456 DOB: 1990-3-3 Address: 101 Ring Rd.	2019-3-20 @ 2:00pm 2019-4-20 @ 2:00pm	Enter Notes Here
<b>Stage Management</b> Current Stage: Stage A <a href="#">View Stage Statistics</a> <a href="#">Edit Pipeline</a>		
<b>File Attachments</b> <a href="#">Upload</a>  ClientMeeting2.docx		

[Delete Profile](#) [Edit Profile](#) [Previous Versions](#)

Employee is exited out of deletion mode and sees that the deleted file is no longer in the list of files

**DEBTOR PROFILE (BM View)**

Debt Counselors | Calendar | My Debtors | Edit Pipeline | Branch Manager | ALT

**Debtor A** Assigned Counsellor: DC A Resign Outstanding Balance: \$500

**Personal Information**

Name: Debtor A  
ID: 123456  
DOB: 1990-3-3  
Address: 101 Ring Rd.

**Upcoming Meetings**

2019-3-20 @ 2:00pm  
2019-4-20 @ 2:00pm

**Notes**

Enter Notes Here

**File Attachments**

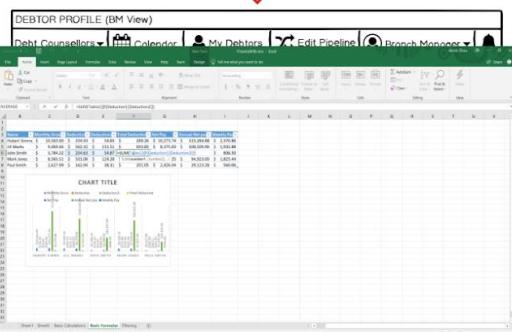
Upload ALT Financials.xlsx

**Stage Management**

Current Stage: Stage A ALT  
View Stage Statistics  
Edit Pipeline

**Debt Profile** Edit Profile Previous Versions

Employee selects to open the desired file



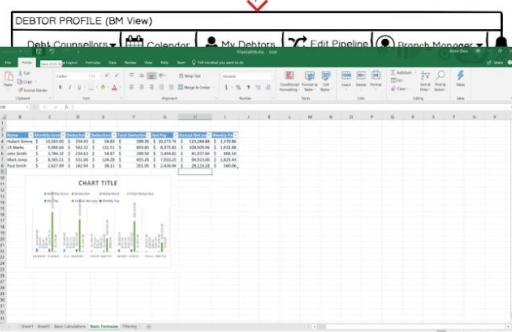
The desired file is opened in a external file processor and the employee proceeds to edit the file content  
Note: the red cursor isn't shown because the files are managed by external file processors



Employee views the file content

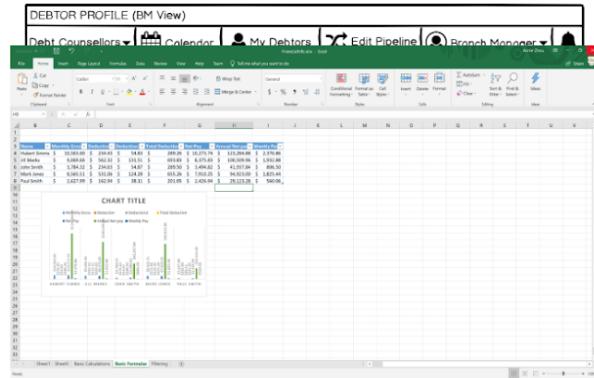


The desired file is opened in a external file processor and the employee proceeds to edit the file content  
Note: the red cursor isn't shown because the files are managed by external file processors

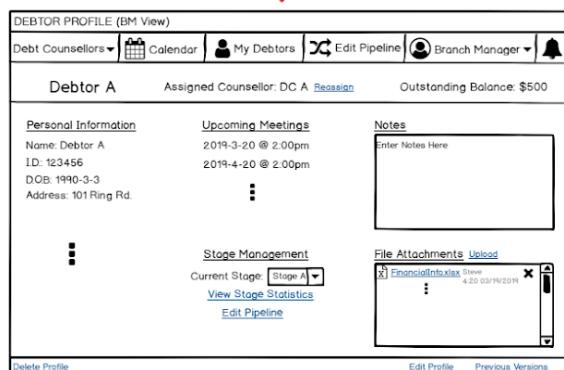


ALT

Employee views the file content



Employee proceeds to close the file



Employee sees their name and time of access is logged beside the file name

**Commented [JK84]:** I don't see any name being saved with the file