

[Your project name] Analysis and Design Document

Version 1.0

27 February, 2017

Developed by:

Student Name Ileni Tudro-Alexandru

Group, year 931

Version History

Version	Description of Change	Author	Date
V01	Initial/Modification of ....	Ileni Tudro	27 February, 2017

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## Analysis and design Document

### 1 Functional Requirements

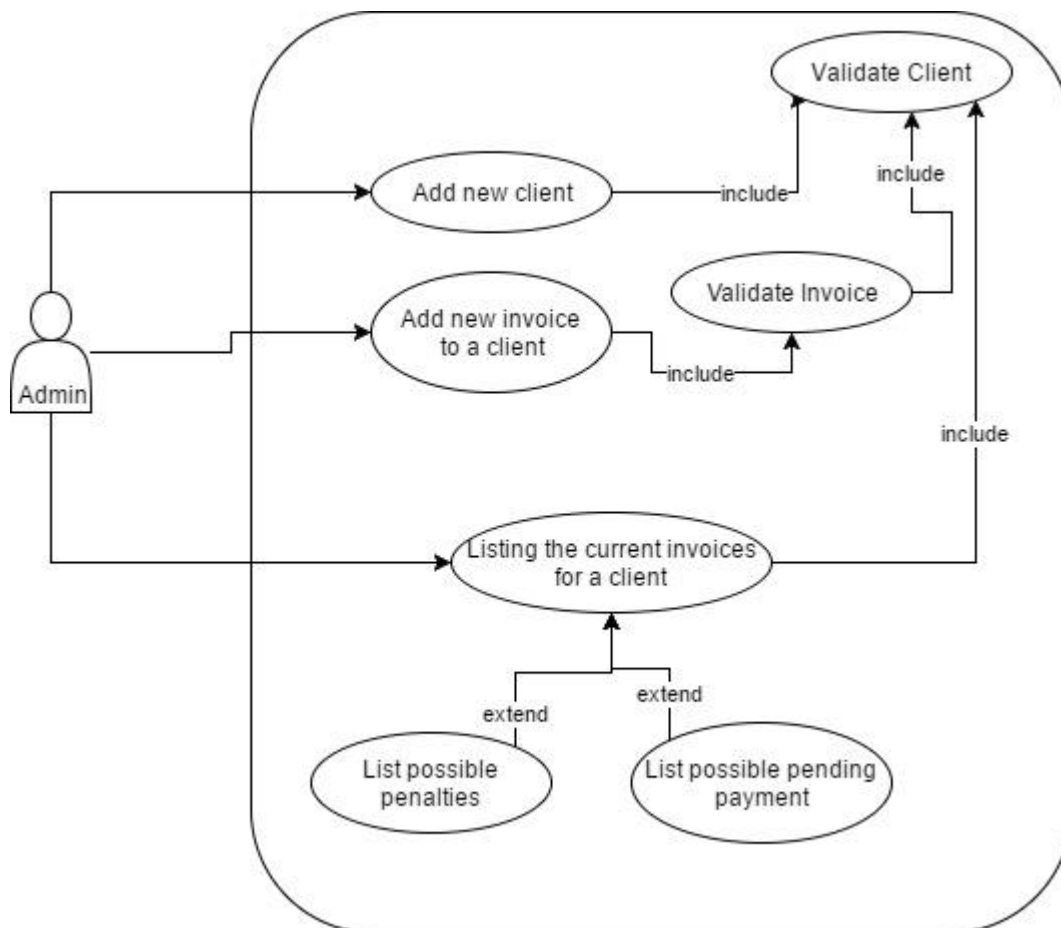
List the functional requirements (FR) of the system.

Section/ Requirement ID	Requirement Definition
FR1.0.	ADD NEW CLIENT
FR1.1	The system shall [child/parent requirement].
FR1.1.1	The system shall [child requirement].
FR1.1.2	The system shall [child requirement].

### 2 Actors

The ADMIN of the electricity company

### 3 Use cases – diagram



#### 3.1 Use case number 1 (Add new client)

Actors: Admin

Description: The administrator insert data about the new client and then persist it

Precondition: The client does not exist, name and address are valid

Postcondition: The client is saved in the list of clients

User action	System response
1 to add a new client	
	2 Enter name:
3 insert the client name	
	4 Enter address:
5 insert the client address	
	6 Enter id:
7 Insert the client id	
	8.1 "Name or address cannot be empty!" if the name or address is empty 8.2 "Client already exists!" If the client exists 8.3 "Success" otherwise

Exceptions: no exception thrown

### 3.2 Use case number 2 (Add new invoice)

Actors: Admin

Description: The administrator insert data about the new client, invoice and then persist it

Precondition: The client exists, name and address are valid, YEAR, MONTH TOPAY are numbers

Postcondition: The new invoice is saved in the list of invoices

User action	System response
1 to add a new client	
	2 Enter name:
3 insert the client name	
	4 Enter address:
5 insert the client address	
	6 Enter id:
7 Insert the client id	
	8 Enter the YEAR:
9 Insert the year	
	10 Enter the MONTH:
11 Insert the month	
	12 Enter toPay:
13 Insert the toPay	
	14.1 "Name or address cannot be empty!" if the name or address is empty 14.2 "Client does not exist!" If the client not exists 14.3 "Success" otherwise

Exceptions: NumberFormatException thrown when introduce a wrong number format for YEAR, MONTH OR toPay

### 3.3 Use case number 3 (List current invoices)

Actors: Admin

Description: The administrator insert data about the client and see its invoices

Precondition: The client exist, name and address are valid

Postcondition: The list of its invoices is printed or "No invoices"

User action	System response
1 to add a new client	
	2 Enter name:
3 insert the client name	
	4 Enter address:
5 insert the client address	
	6 Enter id:
7 Insert the client id	
	8.1 The invoices list, if any 8.2 "No invoices" otherwise

Exceptions: no exception thrown

## 4 Analysis

### 4.1 Entities

Client, Issue

### 4.2 Relations between entities

An Issue has one Client

### 4.3 Attributes

Client		Issue	
PK	<u>id</u>	PK	<u>id</u>
-	Name (String)	-	year (int)
-	Address (String)	-	month (int)
		-	ToPay (float)
		-	Paid

## 4.4 System behavior

### 4.4.1 Use case 1

Normal behavior: The client is added in the clients list

Exceptions:

- When the input is not valid the message is "Name or address cannot be empty!"
- When the client already exist the message is "Client already exists!"
- No exception throw

### 4.4.2 Use case 2

Normal behavior: The invoice is added in the invoices list

Exceptions:

- When the client not exist the message is "Client does not exist"
- NumberFormatException thrown when introduce a wrong number format

### 4.4.3 Use case 3

Normal behavior: The list of invoices is printed

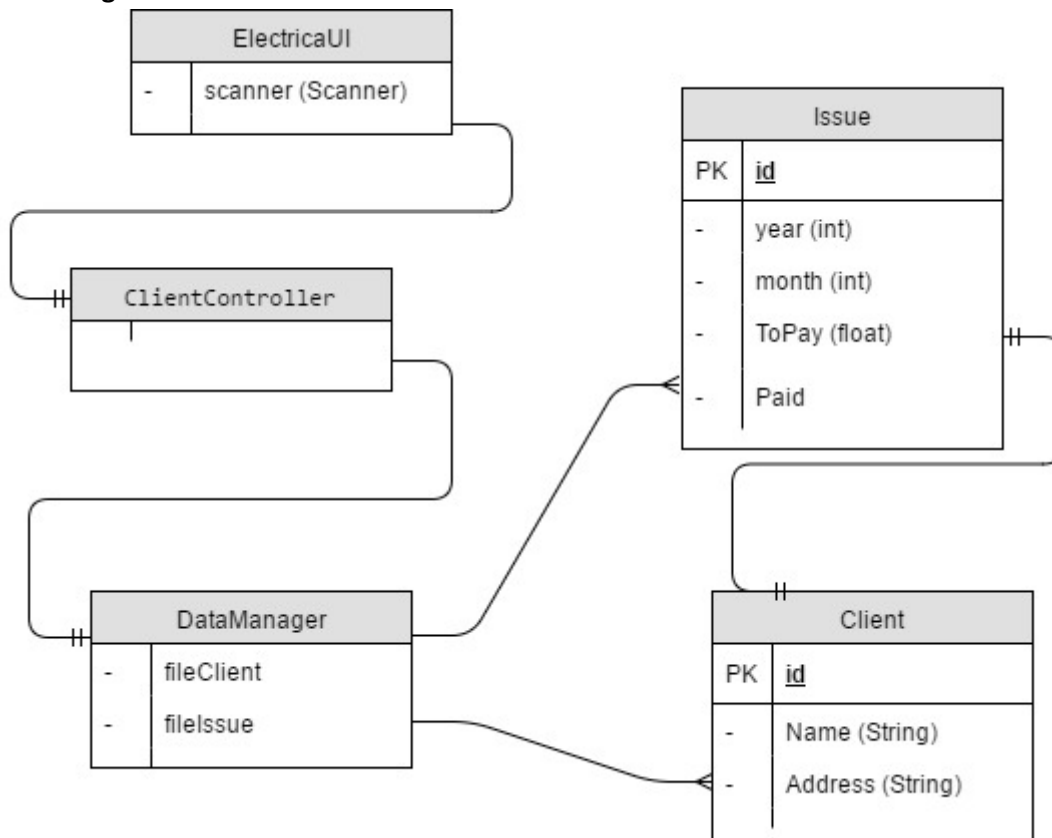
Exceptions:

- When there is no invoice for the client the message is "No invoices"

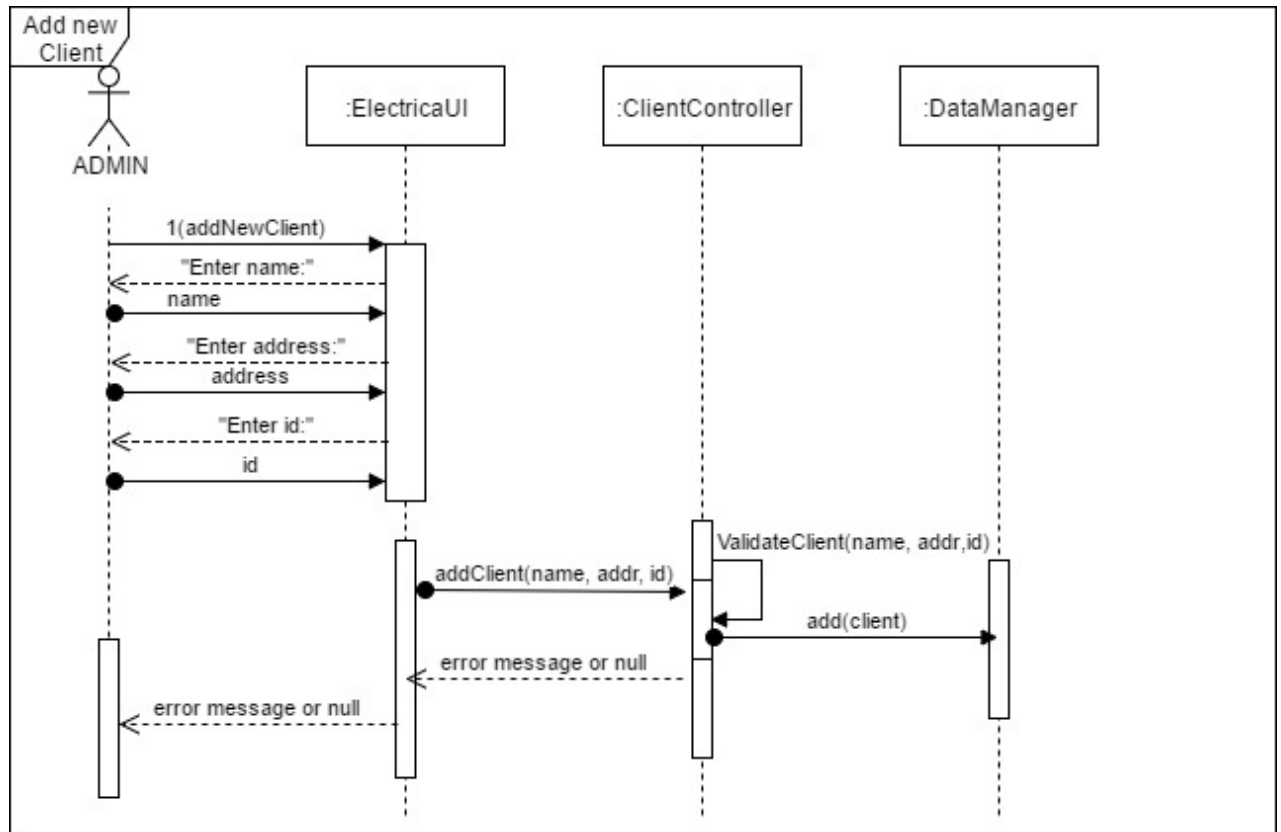
## 4.5 System events

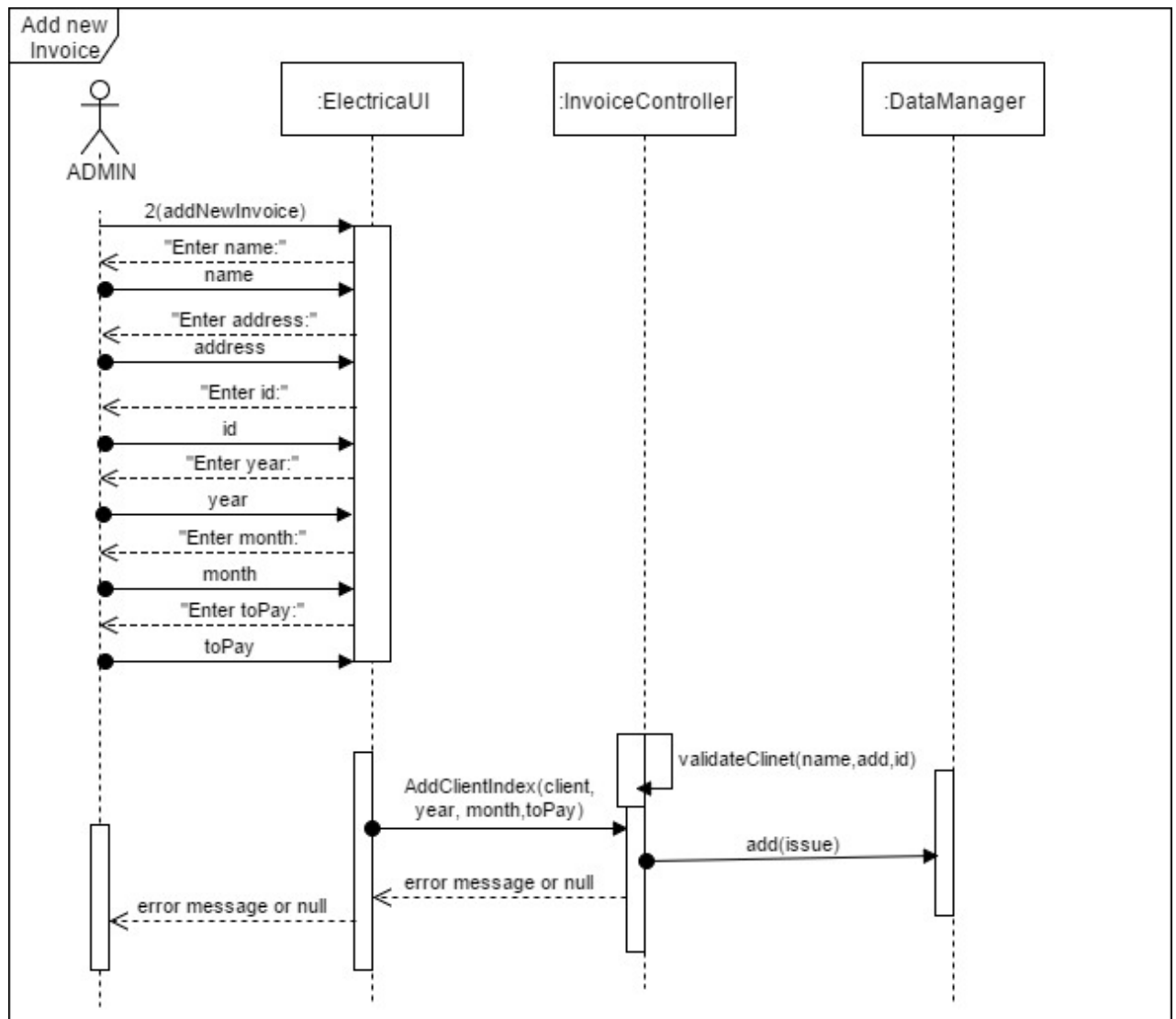
## 5 Design

### 5.1 Class diagram

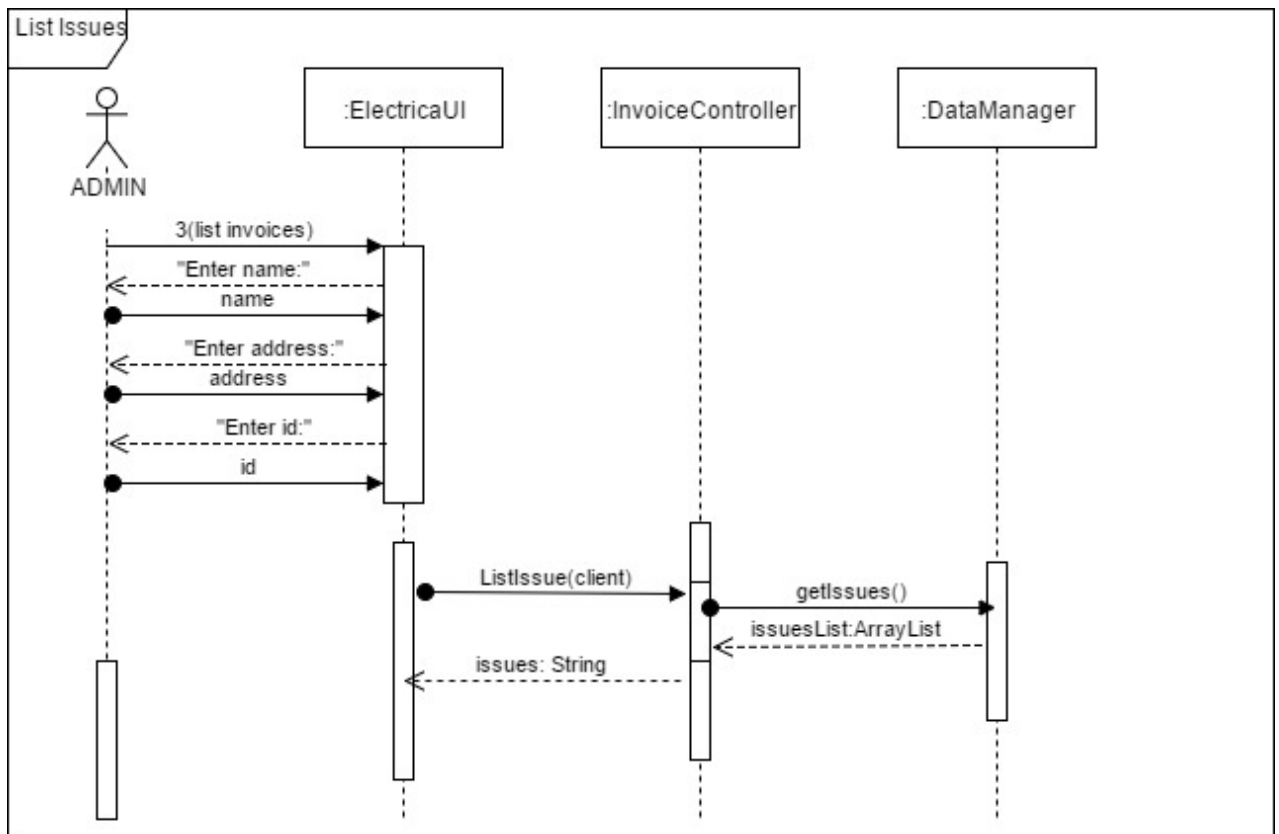


## 5.2 Sequence diagrams (for each use case)









### 5.3 GRASP