

## Leads Master System Project Report

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## **Abstract**

A portfolio in the Insurance business field is built mainly by leads given to insurance agents from customers, friends, promotions and other ways. It is very important to track all the activity and be able to analyse data in order to come up with the right conclusions, so that the effectiveness is improved. Leads Master System is a system that keeps track of the user's leads, analyses data and produces different reports so that time and resource waste are minimised and sales, profits and efficiency are increased. Such system combining contracts, tracking, calendar functionalities, leads suggestions and various reports is considered exceptional these days in the market. The system is designed to be flexible considering user's possible cooperation with more than one company.

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# **Chapter 1**

## **Introduction**

The most important factor in becoming a successful insurance agent, is having a close relationship with your clients and respect them, while being able to know the life status of each one of them separately. This is almost impossible when your leads are becoming more and more everyday. However, this is the detail that makes an insurance agent distinguish from others!

Leads Master System, is a web application that "masters" in leads management and can be used by any insurance agent. A lead is a contact given by another person to the agent. The feature that makes it different from what's already out there, is that it combines different functionalities in just one application. It's flexibility allows it to be operable by any user, from all over the world. A portfolio in Insurance businesses is built mainly by leads given to insurance agents by customers, friends, promotions and other ways.

Having your contacts, your contracts sales and your everyday meetings stored electronically, while being able to automatically check out the profits gained and analyse all those numbers in order to get different analysis reports and different CRM system functionalities are only some of the functionalities that can be found in this system which helps an agent become better at what he is doing.

### **1.1 Aims and Objectives**

Insurance agents have to take into consideration many different aspects at the same time in order to be productive and successful. For example, part of their job is being responsible for their contracts' payments and renewals, while being able to solve any customer dissatisfaction that comes up. Furthermore, the most important aspect is to be able to track all the activity history of the clients and being able to remember and analyse data in order to come up with the right conclusions for each case.

By using this system, users can analyse data and conclude to the most effective or ideal introducer and customer profile which is best approaching next for either more leads or for making them clients. What is more, comparing sales done by the user each month or year is a motivation taken to reach higher sales, or even better, higher profit number in the future. Different analysis of data could be offered to the user to proceed with business analytics tasks and proactive decisions. For example, "Ideal" or "Iconic" profitable profiles will be produced in a report-driven mode automatically.

The aim of this system is to be used by any insurance agent in order to minimise time and resource waste as well as to increase sales and profitability while efficiency is improved. Most importantly, it has to allow fast, reliable, strategic and tactical decisions for the user. Finally, we aim at the ease of use of one application that will service all those functionalities.

To Sum up, the main goal or characteristic of the system is to provide every agent's need in an All-in-one application:

- Clients and Leads storage/management.
- Customer relations management services
- Contracts storage/management.
- Calendar functionalities.
- Profiles, Statistical and other reports for business analysis and decision making.

### **1.1.1 Project Intention**

A system is developed, based on real life needs, which will be decided after interviewing a manager in an International Insurance Company. The main intention of the project is the system to meet the agreed requirements at its highest, which were finalised after conducting a series of analysis in the specific business field. By the end of this project the system should answer critical questions for the user some of them being the following:

1. Which is the best Introducer/Customer profile, so that the user (agent) is focused on this kind of introducer/client in the future?
2. What will be my profit in a particular period?
3. Which are the most profitable sales?
4. How can this system help agents save time?

## **1.2 Outline**

The rest of this report is structured as follows:

Note that any image included in the report can be found larger in the Appendices section E.

- Chapter 2 presents an analysis of different existing artefacts and preliminary knowledge needed from the insurance business field in order to implement this system.
- Chapter 3 lists the process of gathering functional and non-functional requirements of the system after conducting an interview with relevant people.
- Chapter 4 goes through the process of designing the system and the user interface based on the considered requirements.
- Chapter 5 lists any technologies used throughout the project and it describes the implementation process for each part of the system, including the database creation and every other part of the application.
- Chapter 6 shows how the system was tested against the set requirements in addition with the process of evaluating the system's usability and functionality by using real users' feedback through questionnaires.
- Chapter 7 summarises the report including any reflections and future improvements that would be sensible to do.

# **Chapter 2**

## **Case Study Background**

During my project, I was in close communication with the Business Development Manager of an international insurance company based in Cyprus, [Trust International Insurance Company \(Cyprus\) Ltd](#). Besides, he was the one that introduced me to the idea of such a system that would help the development of every insurance agent. After having his official consent in using the company's name and policies, valuable data and details about this business field were gathered which would significantly help in the process of this project completeness. The official consent form can be found in the appendices section B.

### **2.1 Existing Systems and Motivation**

By the time I had analysed my idea of the system, I could see that there were not similar systems in the market. Some of them had information only about the available plans of different companies that the agent has cooperation with, as well as price comparison between those companies' contracts, whereas some others had mainly calendar functionalities. I also came across with some Customer Relation Systems available for anyone to buy, which could be used by any business that has to do with customers. Such CRM software allow the user to keep track of his contacts and maybe provide reminders of people's birthdays etc. Different reports on the agent's productivity or sales could be requested by each company the agent works with.

After my initial discussion with Mr. Haralambous, I could understand the difficulties an insurance agent faces, especially when working with more than one company. They need to remember each person and their contracts. They also need to keep track of what sales they made during a period, they have to remind people of their payments and renewals due and they also have to keep a calendar as well as many more tasks that a person cannot handle without the help of any software. Furthermore, in order to calculate their profits they have to request a report from each company. Requesting reports from companies is something that is part of an agent's daily work.

It was then when I realised that an application which would provide all of those functionalities together, would significantly help many people to become better at what they're doing. Having everything they need in one place, and at the same time allow them to be provided with different statistical reports which would make them more organised and more productive without trying to remember details regarding their customers.

## 2.2 Types of Data

In order to proceed with the analysis of the system, I had to understand the different types of information an agent has to deal with in his everyday life. Different sources as well as my discussion with Mr. Haralambous were proven helpful to perceive the meaning and the depth of every significant information for the business field.

### 2.2.1 Companies

Each independent agent can provide insurance plans from more than more companies since they may represent multiple companies. This happens because each company offers different commission percentages to each agent for different insurance plans that they provide [4]. What is more, a company might not insure a person while the other might do, which prevents the agent from losing a client from his portfolio. In other words, the agent is positioned to look after the best interests of his customers.

### 2.2.2 Business fields

To start with, insurance companies differentiate their business into two fields. Not all of the companies provide insurance plans for both business fields, i.e. Trust Insurance deals with General insurances only. During my research, one of the most difficult things I had to realise, is the profit calculation for each plan, and the differentiation between life business profits and general business profits.

Profits for each contract are received from companies once a year, on the month of the contract issue. For example, if a contract was issued this August, the agent will receive a profit from current contract this August and then next year's August and so on and so forth. So the agent's profit is built up yearly, by continuously adding new contracts each month, while having profits from previous years' months.

#### General Plans

General business field insures an object and money claiming is subject to an event, which may or may not happen, in order to basically cover the expenses of it. Fire and motor contracts for example cover up to a maximum amount or the actual amount of loss which can be claimed, i.e. they are contracts of indemnity. In contrast with life insurances, general insurances have a standard expiration period of one year, or less, depending on the client's need.

#### General Profits

The commission received for General contracts is subject to the value of the item insured or to the insured people under each contract. For example, a car has an A value, which changes with the passage of the years (i.e. it decreases), and many people can be insured under the same car. If a person is a new driver then the contract's annual premium or value rises. Insurance companies calculate a total annual premium of a contract, which is the whole amount to be paid by the customer. It is calculated from a Basic value plus some extra company fees and/or government allowances. This can be seen in Figure 2.1 , which is a motor (car) quotation taken from Trust Insurance. It is in Greek, however, the circled part clearly shows that there is a basic value of 360 Euro plus some extra fees which raise the annual premium to the amount of 422 Euro.

A	B	C	D	E	F	G	H	I	J	K
43	ΜΕΧΡΙ 3 ΧΡΟΝΙΑ						40%	N		0.00
44	ΜΕΧΡΙ 4 ΧΡΟΝΙΑ						50%	N		0.00
45	ΕΩΣ 5 ΧΡΟΝΙΑ						60%	N		0.00
46	ΟΔΗΓΗΣΗ ΟΧΗΜΑΤΟΣ ΜΟΝΟ ΑΠΟ ΤΟΝ ΑΣΦΑΛΙΖΟΜΕΝΟ						20%	N		0.00
47	ΟΔΗΓΗΣΗ ΟΧΗΜΑΤΟΣ ΜΟΝΟ ΑΠΟ 2 ΚΑΤΑΝΟΜΑΖΟΜΕΝΟΥΣ ΟΔΗΓΟΥΣ						15%	N		0.00
48	ΠΕΡΑ ΤΟΥ ΕΝΟΣ ΛΙΣΤΑΝΟΥΜΕΝΟΥ ΟΧΗΜΑΤΟΣ ΜΕ ΕΝΑΝΤΙ ΤΡΙΤΟΥ ΚΑΥΨΗ ΣΤΗΝ ΕΤΑΙΡΕΙΑ						5%	N		0.00
49	ΠΕΡΑ ΤΟΥ ΕΝΟΣ ΛΙΣΤΑΝΟΥΜΕΝΟΥ ΟΧΗΜΑΤΟΣ ΜΕ ΠΕΡΙΕΚΤΙΚΗ ΚΑΥΨΗ ΣΤΗΝ ΕΤΑΙΡΕΙΑ						10%	N		0.00
50	ΑΣΦΑΛΕΙΑ ΠΥΡΟΣ (ΟΙΚΙΑΣ Η ΕΠΙΧΕΙΡΗΣΗΣ) ΜΕ ΤΗΝ ΕΤΑΙΡΕΙΑ						15%	N		0.00
51							€ 100	10%	N	0.00
52	ΕΠΙΛΟΓΗ ΑΥΞΗΣΗΣ ΤΟΥ ΥΠΟΧΕΡΩΤΙΚΟΥ ΑΦΑΙΡΕΤΟΥ ΠΟΣΟΥ						€ 150	15%	N	0.00
53							€ 300	20%	N	0.00
54	ΝΕΟ ΟΧΗΜΑ - ΠΕΡΙΕΚΤΙΚΗ ΚΑΥΨΗ						ΚΑΙΝΟΥΡΓΙΟ	25.0%	N	0.00
55	ΠΡΟΔΙΑΡΙΤΙΚΕΣ ΚΑΥΨΕΣ									
56	ΑΝΕΛΗΣΗ ΤΟΥ ΠΟΣΟΥ ΚΑΥΨΗΣ ΑΝΕΜΟΦΩΡΑΚΑ ΑΠΟ €500 ΣΕ €850						15	N		0.00
57	ΠΡΟΣΤΑΣΙΑ ΜΗ ΥΠΟΒΟΛΗΣ ΑΠΑΙΤΗΣΗΣ						ΜΕΧΡΙ 1500	12	N	0.00
58	ΠΡΟΣΤΑΣΙΑ ΜΗ ΥΠΟΒΟΛΗΣ ΑΠΑΙΤΗΣΗΣ						ΧΩΡΙΣ ΠΕΡΙΟΡΙΣΜΟ	22	N	0.00
59	ΙΑΤΡΙΚΑ ΕΣΟΔΑ							20	N	0.00
60	ΠΑΚΕΤΑ ΓΙΑ ΠΕΡΙΕΚΤΙΚΗ ΚΑΥΨΗ (ΕΠΕΚΤΑΜΕΝΗ)									
61	Mέχρι 1600c.c.						35	N		0.00
62	1601 - 2200c.c.						40	N		0.00
63	2201- 3500c.c.						50	N		0.00
64	3501 - 4400c.c.						60	N		0.00
65	4401 c.c. και άνω						90	N		0.00
66	ΕΙΔΙΚΗ ΕΠΙΛΟΓΗ (Επιλογή)									
67							DIRECT EKPIPOSEN	5%	N	0.00
68							ΕΙΔΙΚΗ ΕΠΙΛΟΓΗ	10%	N	0.00
69							Basic Value			
70							ΠΕΡΙΕΚΤΙΚΗ			
71	ΕΛΑΧΙΣΤΟ ΑΣΦΑΛΙΣΤΡΟ ΠΕΡΙΕΚΤΙΚΗΣ ΓΙΑ 12 ΜΗΝΕΣ:						ΕΝΑΝΤΙ ΤΡΙΤΟΥ	360.00		
72	ΕΛΑΧΙΣΤΟ ΑΣΦΑΛΙΣΤΡΟ ΠΕΡΙΕΚΤΙΚΗΣ ΓΙΑ 6 ΜΗΝΕΣ:						ΟΛΙΚΗ ΒΟΗΘΕΙΑ	20.00		
73	ΕΛΑΧΙΣΤΟ ΑΣΦΑΛΙΣΤΡΟ ΠΕΡΙΕΚΤΙΚΗΣ ΓΙΑ 4 ΜΗΝΕΣ:						MIB	19.00		
74							ΧΑΡΤΟΧΗΜΑ	2.00		
75							ΔΙΚΑΙΩΜΑΤΑ	21.00		
76							ΔΙΚΑΙΩΜΑΤΑ ΔΙΑΛΥΜΕΝΑΣ ΠΕΡΙΟΔΟΥ	0.00		
77							Total Annual Premium		ΟΛΙΚΟ ΑΣΦΑΛΙΣΤΡΟ	€ 422.00
78										€ 2.00
79									ΑΣΦΑΛΙΣΤΡΟ ΑΝΑΝΕΩΣΗΣ	€ 0.00
80										€ 0.00
81										
82	ΕΚΔΙΩΣΗ				ΠΕΛΑΤΗΣ					
83										11/02/2017
84										ΗΜΕΡΟΜΗΝΙΑ
85										

Figure 2.1: Sales Profit Calculation - Appendices E.1

A	B	C	D	E	F	G	H	I
1	Agent Name							
2	CRM Abbreviation ENG Name							
3	Branch	S - Paralimni		CRM Abbreviation GR Name	TRUST INSURANCE			
4	Broker Supervisor	Paralimni Branch		Address				
5	Agreement Start Date			Mobile Telephone				
6	I.D. or Co Reg. Number			Work/Home Telephone				
7	Credit Period - Non Health			Fax				
8	Credit Period - Health			e-mail				
9	Payment Terms			Branch e-mail				
10	Access Level			Number of Users				
11				Finance Access Level				
12	Code	Class Name	Abbrv.	Code	Sub Class Name	Abbrv.		
13	A	Miscellaneous Accident	GAC	A01	Personal Accident	PA	20.0%	
14				A02	Fidelity Guarantee	FG	15.0%	
15				A03	Money (Cash)	MO	15.0%	
16				A04	Banker Blanket	BB	15.0%	
17				A05	Theft	BU	25.0%	
18				A06	Personal Effect	PE	0.0%	
19				A07	Plate Glass	PG	15.0%	
20				A09	Travel Accidents	TA	20.0%	
21	B	General Accidents	GAC	B01	Employer's Liability	EL	17.0%	
22				B02	Public Liability	PL	17.0%	
23				B03	Professional Indemnity	PI	17.0%	
24				B04	Product Liability	PL	17.0%	
25	C	Engineering	ENG	C01	Contractor All Risks	CAR	16.0%	
26				C02	Erection All Risks	EAR	16.0%	
27				C03	Marine Breakdown	MBR	0.0%	
28				C04	Boiler Explosion	BE	16.0%	
29				C05	Electrical Breakdown	EB	16.0%	
30				C06	Electronic Equipment	EE	16.0%	
31				C07	Contractor Plant And Equipment	CPE	16.0%	
32				C08	Deterioration Of Stock	DOS	16.0%	
33	F	Fire	FIR	F01	Fire Non Business	FI	25.0%	
34				F02	Fire Non Business Earthquake	FNBE	0.0%	
35				F03	Householder's Comprehensive	HC	25.0%	
36				F04	Globe Earthquake	GL	25.0%	
37				F05	Terrorism Sabotage Earthquake	TS	0.0%	
38				F06	Terrorism Sabotage	TS	0.0%	
39					All Risks of Physical Loss	AR	20.0%	
40					All Risks of Physical Loss Earthquake	ARBE	20.0%	
41					Business Fire	BF	25.0%	
42					Business Fire Earthquake	BF	9.0%	

Figure 2.2: Sales Plans Profits Percentages - Appendices E.2

The agent receives a commission or profit from each insurance plan which is subject to a commission percentage agreed with the corresponding company. The profit of the agent, for each General contract, is **the total commission percentage ( sum of every plan included in the contract) of the Basic value**. Commission percentage for each plan in each company is different. This can be seen on Figure 2.2 , which shows some of the sales commission percentages of Trust Insurance for a sample agent. An essential point to note here is that for General contracts the commission percentage of the agent is the same every year, except in cases where agreement with the company changes. This means that the profit from each contract is the same every year, always depending on the basic value.

## **Life Plans**

Life insurance is always a type of investment in our lives, it is not done to cover different expenses that might come up, i.e. it is not a contract of indemnity. For example, it may be a contract from which money is going to be saved upto the day of someone's death, based on a previously agreed insurable interest and will be given to the person's family. A person can have more than one life insurance in different companies and he can claim full value of policies from all insurance companies. Finally, as it might be obvious, life insurances are not renewed, i.e. yearly. They either have a standard period of issue or they are issued until the happening of an event, i.e. death.

## **Life Profits**

The commission percentage received from Life Contracts is subject to the age of the insured person. For example, if the client is a young person then the commission is higher than if it was an old person. Insurance companies calculate a total annual premium of a contract in life business as in sales business as well. It is calculated from a Basic value plus some extra company fees.

However, when talking about the agent's profit, it is a more complicated case. There are at least three different kinds of life plans provided by insurance companies. In each plan, the commission percentage is calculated differently. First year's commission percentage is different and a lot higher than the following years'.

### **Life Plan A Profit:**

- First year:
  - $(\text{PERCENTAGE A} * (\text{AGE LIMIT} - \text{CLIENT'S AGE})) * \text{Annual Premium}$
  - With minimum percentage given MIN PERC and maximum percentage allowed MAX PERC.
- Following years:
  - PERCENTAGE B

### **Life Plan B Profit:**

- First year:
  - $(\text{PERCENTAGE A} * \text{TOTAL CONTRACT DURATION}) * \text{Annual Premium}$
  - With minimum percentage given MIN PERC and maximum percentage allowed MAX PERC
- Following years:
  - PERCENTAGE B

### **Life Plan C Profit:**

First year	PERCENTAGE A * Basic Value
Second Year	PERCENTAGE B * Basic Value
Third Year	PERCENTAGE C * Basic Value
Fourth and Following Years	PERCENTAGE D * Basic Value

### **2.2.3 People**

Insurance companies insure almost any aged person. A person can have more than one insurances with more than one company or none. Different information about clients are saved into the records of a company; from medical conditions and family details to contact details. Every person can be a good client for an insurance agent, independent from their wage and value of insurance and that's why they should be specially treated from the agent.

### **2.2.4 Activities**

A very large part of an agent's everyday life, is the meetings and the different obligations that have to be carried out on a daily basis. For example, collecting payments from clients, informing clients that their contracts are about to expire etc. A calendar is usually proven helpful for this purpose as it provides them with the functionality of saving every meeting they are about to make so that they do not forget about it or come across with any conflict.

# **Chapter 3**

## **Requirements**

This chapter reports on the process of finalising a list of requirements that the system will have to meet, as well as the users(actors) that will interact with it. During this process, interviews took place, the outcomes of the interviews were analysed and use cases based on the actors defined were written down to finalise the requirements of the system.

### **3.1 Interviews**

After the business field came to be quite familiar, I had to understand what the needs of an insurance agent are and what would be useful to be included in this kind of application. In order to do this, I chose the interview technique since it is an easy and reliable technique to obtain the users' needs while talking [3] . I took a small interview from Mr. Haralambous as well as from two other insurance agents that he introduced to me. I had prepared a set of questions prepared to ask the potential users to ensure the main topics wanted to be discussed would have been covered.

#### **3.1.1 Interview Questions**

1. Would you be interested/positive in a new, insurances related, web application that would help you become more efficient in your job?
2. What services would you like to be included in a new application ?
3. Would you be interested in:
  - Calendar functionalities
  - CRM system functionalities (clients and/or not)
  - Reminders
  - Portfolio records (insurances from different companies to be kept in one place)
  - Reports
4. Do you currently use/have any similar tools?
5. What makes an agent more efficient in:
  - Client choice

- Sales
- Time management

6. What reports would an agent need/be interested either occasionally or on his daily basis?

### **3.1.2 Analysis of interviews**

Having interviewed three people, conclusions were made on what would be needed in this system. All interviewed people were interested and positive in this idea. Initially they couldn't understand how this would make them more efficient, but when I continued asking the next questions I could tell they seemed more enthusiastic about the idea while suggesting different functionalities. All of them were interested in the calendar functionalities because this would help them be more organised and they wouldn't have to remember what they've discussed with each person each time they met.

It was clear that various reminders would make their life easier. As I have been told, even the simplest things like remembering people's birthdays is a huge factor that counts in their job. Customers feel special and appreciate this kind of things. Other reminders like renewals or payments reminders would help them, especially if they are working with more than one company, because they will not have to communicate with the company every day. Having such reminders, agents will be able to have a look at things they would need to remember with a click.

Regarding the portfolio records, stakeholders liked the idea, however they were a bit concerned about how would they enter all those details in the system. Nevertheless when we discussed a bit more they basically told me that it would be worth it. Going now on the reports question, they were so positive about it. They suggested different reports. Finding an ideal model of an introducer in order to concentrate on these people when asking for leads. Finding an ideal model of a client, who will bring more profit in, in order to concentrate on these "big" customers and not waste their time finding "small" ones. Many more reports were suggested, sales reports, profits reports etc. All these statistic reviews make insurance agents more efficient for future client choices.

It was obvious that they are currently using similar different tools provided by the companies they work with, but either not electronically or not having everything in one system. These interviews cleared the scope of the area and the actual needs of the users. Reviewing the interviews' analysis helped me to finalise a list of requirements that I will outline in the next sections.

## **3.2 Use Case Analysis**

After conducting the interviews discussed above, I extracted the basic functionalities of the system as well as the main users or actors that will be using it. As an analyst, I wanted to bring the product in life in order to come up with the required functionalities of a user, as a user. For this, I have created some personas [13] and user stories to make sure my product will be used to cover real life needs. Personas create empathy for users of the application and in this way users become real people with real needs and behaviour, hence personas would help base any decisions on the needs of these memorable personas.

The application's main users will be:

- The insurance agent.
- And/Or any employees of the insurance agent.

The agent deals with:

- Clients : People who currently have an insurance contract with the agent.
- Introducers: People who have introduced any person to the agent.
- Leads: Introduced people to the agent that are prospective clients.

### 3.2.1 Personas

- Persona 1: Harry - Agent

Harry is an insurance agent. He is a 50-year old insurance agent and he is cooperating with three different insurance agents. He makes both life and general business insurances with those 3 companies. Harry would like to have a very professional and at the same time friendly relationship with his customers. Harry's customers are really satisfied with his services. He wants a system that will automatically inform clients of any renewals or payments as well as wishing them for their birthdays.

- Persona 2: Mary - Employee

Mary is a 35-year old employer in Harry's insurance agent office. Mary's making calls to customers all the time about different issues or to provide them with information about their contracts. She would love a system that will be easy to find a contract without having to search in each company's system for details. She would also like a report of the contracts that expire this month in order to make sure clients are informed and contracts are renewed.

- Persona 3: Claudia - Agent

Claudia is a 28 year old insurance agent. She does not want to have to a personal contact with her customers because she is bored talking, but she still wants to be a very good insurance agent, which involves being in touch with the customers very often. She would like a system that will contact customers via emails. She would also like to have different reports on her profits to become better and gain more money without wasting time on the wrong people. She wants the system to tell her which people not to approach because she would waste her time, based on statistics.

### 3.2.2 User Stories

The system's functionalities were broken down into the basic functionalities of it and the reports it will produce. Functionalities will be explained in detail in the next session (see section 3.3.1). An agile method, User Stories, have been used to represent the requirements of the system. User Stories defined in following section reflect the requirements after the interviews that took place. After each user story I have noted down preconditions and postconditions of each requirement, if any, as well as any further explanation needed.

A UML diagram (Figure 3.1) was created to visualise these User Stories. This kind of diagram is used to describe the functionality of a system. It shows graphically any interaction of each user using its functionalities. Actors in the diagram denote any kind of user that will have direct or indirect interaction with the system. I have additionally used the "*extends*" and "*uses*" notations to visualise any relationship between each functionality. The first notation (*extends*) indicates that process X is a special behaviour of the same type as the more general process Y, whereas the second (*uses*) indicates that the process of doing X always involves doing Y at least once [7]. The diagram was created using Draw.io (<https://www.draw.io/>), an online diagram drawing tool.

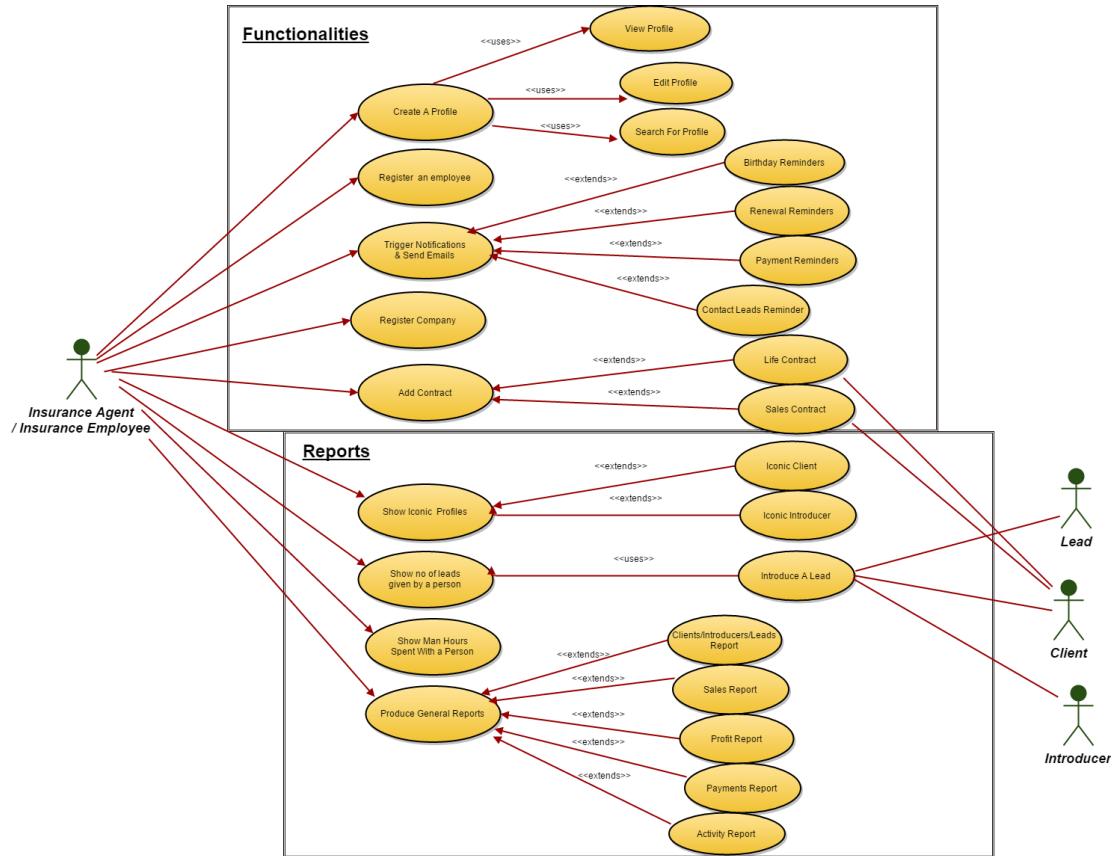


Figure 3.1: Use Case Diagram

- **Note:** Something to note here is that in the beginning of my analysis, I only included one user, the administrator user. As I was going through though, I've realised that a really successful insurance agent, would have at least one or two employees working for him. So, the job that is being done by these employees have to be calculated as well in the hours spent for each person. Moreover, having this in mind, the system could also calculate and provide details for the most productive employee and other different reports on it. However, here are some important privacy and security issues to consider.
- **Note:** Please note also that this diagram was created at the very beginning of the process and it might miss some functionalities that are meant to be there in order to implement some of denoted ones on the diagram (i.e. insert calendar entry in order to show man hours activities report).

### User Stories - Functionalities:

1. As an Introducer,  
I want to introduce a lead ,  
So that I can help the agent to get a potential client
2. As an admin/employee,  
I want to create a profile,  
so that I can keep track of my leads/clients/introducers.
3. As an admin/employee,  
I want to search for a profile (by name for example)  
So that I can find one of contact's detail fast

4. As an admin/employee,  
I want to edit a profile  
So that the details of my contact are up to date.  
Precondition: (2) A profile has to be created.
5. As an admin/employee,  
I want to enter a company ,  
so that I can keep track of any contracts I have with this company.
6. As an admin/employee,  
I want to enter a contract,  
so that I can keep track of contracts and use details for further analysis.  
Precondition: (2) A profile has to be created.  
Precondition: (5) A company has to be entered in the system.
7. As an admin/employee,  
I want to enter my daily activities/meetings in the system,  
so that I can be more organised and keep track of my meeting minutes.
8. As an admin,  
I want the system to Trigger Notifications and sent emails automatically,  
So that I/the employee can be up to date with my/his obligations,  
Where notifications types are:
  - Birthday notifications  
Precondition: (2) A profile has to be created.
  - Periodically contacting leads notification
  - Renewal of insurance notifications  
Precondition: (6) A contract has to be entered.
  - Payments notifications  
Precondition: (6) A contract has to be entered.
  - Calendar notifications  
Precondition: (7) An activity has to be entered.

### **User Stories - Reports:**

1. As an admin,  
I want to see man hours spent for activities with each person,  
So that I can keep track of a history with the person.  
The idea here is to keep a calendar that you can put in activities or appointments with categories as well so that they are more easily differentiated for later analysis.
2. As an admin,  
I want to see the number of leads/number of successful leads given by an introducer,  
So that I can decide if he would be good for a future introducer. (A successful lead is a person who is a current client and was a lead. So a lead which successfully became a client.)
3. As an admin,  
I want to see an iconic client/introducer profile,  
So that I know which group of people I can approach for future introducers/clients with more profit and less hours spent on them.

4. As an admin,

I want to have a report on:

- All my clients/introducers/leads as a list
- Sales (for a requested period for example)
- Profits (for a requested period for example)
- Activities ( all activities for a person, or my activities for a period for a particular task etc)
- Employee activities (calculate hours of a particular activity done by each employee, calculate how many appointments were booked by each employee etc)
- Payments ( show all contracts that payments are NOT up to date.)

So that I can analyse data and be more productive.

### 3.3 Software System Requirements

The following section describes any services that the system should provide and/or any constraints on its operation. Software System requirements are a more detailed description of the system's functionalities, services and operation constraints [17, Chapter 4, Section 4.1]. The system's requirements denote the needs or conditions that the product should meet to be considered successful. Accordingly, my goal was to prepare a list of functional and non-functional requirements aiming not going to drop any of these halfway through.

Consequently, my project's requirements were well thought out, after going through the user stories analysis and the interviews' outcomes. Worth mentioning here is that in order to have a complete and consistent list, some requirements were added to the list while going through the process of design and implementation of the system due to the extra needs of it. This is natural in the requirements engineering process [17, Chapter 4, Section 4.1] as you may easily make mistakes and omissions at the very first stage of the process, which mistakes can only be spotted during the implementation of the requirements.

#### 3.3.1 Functional Requirements

Functional Requirements describe what the system should do, or even better what services are going to be provided by this system [17, Chapter 4, Section 4.1.1]. Any functional requirement of a system depends on the needs of the application's expected users. Since my system has to deal with a variety of functionalities, I had to prioritise its requirements. To achieve this, I have used an agile method, MoSCoW method.

**MoSCoW Method:** This prioritisation method breaks down the requirements into 4 categories [9]:

- **Must Have:** Requirements in this category are the minimum set of requirements that the project guarantees to deliver. In this project's case, without these requirements, the system will not operate at all.
- **Should Have:** Should Have requirements are extremely important for the expected operation of the system.
- **Could Have:** These requirements are quite desirable, but less important.
- **Would Like To Have:** Requirements in this category, are those that would be likely to be included in the system, if it's affordable time wise.

Using this method, help me deliver as much requirements as possible, in a structured way, and at the same time I was able to recognise if, when not implementing something, would cause a failure in the system. In other words, if all Must Have, Should Have and Could Have requirements were implemented by the end of the project, the system would meet at a maximum its set requirements.

Must Have
Add/View/Edit a person's profile(Client/Lead/Employee)
Create user authentication system (to tell which employee or admin logged in)
Register one admin and employees
Search for a profile (using name, surname or ID)
Add/Edit an insurance Company into the system
Add/Edit a company's plan into the system
Add/Edit a contract which will be related to a client
View contracts of a particular person
Mark a contract as cancelled and set the client to Was-Client if no other contracts are assigned to the person
Insert calendar activity entry
View calendar activities
View Birthdays notifications
View Payments notifications
View Renewals notifications
Suggest 10 random leads to be contacted every Monday

Should Have
View man hours spent for activities with each person
View history of activities done with each person, i.e. all meetings done with a person
View the number of leads/number of successful leads given from each person. Where a successful lead is a person who is a current client and was a lead. So it is a lead which successfully became a client
Produce an Iconic (Ideal) Introducer profile in 3 steps:  List introducers with success percentage over 70%.  List introducers in descending order, based on profit gained from them.  Calculate average results to introduce a profile.
Produce an Iconic (Ideal) Client most profitable profile.  List 20 (if so) clients in descending order, based on profit gained from them the past years.  Calculate average results to introduce a profile.
Produce a report on sales done for a requested period
Produce a report on profits gained for a requested period
Produce a report on activities ( all activities for a person, or my activities for a period for a particular task etc)

Could Have
Send emails for the notifications produced (payments, renewals, birthdays)
Have the option to automatically renew a contract, if expired, with the possibility to change payment method/doses and dates
View payments due, i.e. show all contracts that their payments are NOT up to date
Extend Iconic Client profile with possibility to select a particular insurance plan
Extend Sales report done to produce results for a particular insurance plan
Extend Profits gained report to produce results for a particular insurance plan

Would Like To Have
Employee activities (calculate hours of a particular activity done by each employee, calculate how many appointments were booked by each employee etc, labor cost)
Download the reports produced as a pdf file
Pop up notifications of calendar events

### 3.3.2 Non-Functional Requirements

Non Functional Requirements are any constraints on the operation of the system. More specifically, they list any important criteria that judge the operation of a system, instead of describing the system's functionalities. Any of these requirements could refer on the system's reliability, response time or memory use [17, Chapter 4, Section

4.1.2]. This project includes some non functional requirements, which have to do with different factors affecting the system. Some of them are:

- **Performance of the system:** The application can be used, only if the user is willing to enter information, i.e. contracts, calendar entries, in the system. It is less dynamic [18]. A data migration or data integration will not be implemented at this stage of implementation since different factors have to be thought in order to do this, one of them being whether the companies provide any export method of their data or not.
- **Reliability of the system:** The reliability of the system depends on the correct and complete data entry from the user. The user must be careful not to forget to enter any data in the system.
- **Accuracy and Precision:** Additionally, the system might fail calculating the correct results (i.e. profits) in case a company provides an insurance plan with a completely different way of profit calculation from those that there have been researched.
- **Usability of the system:** Users of the application must have a basic technology knowledge in order to use the system and understand the whole idea of having everything they need into one system.

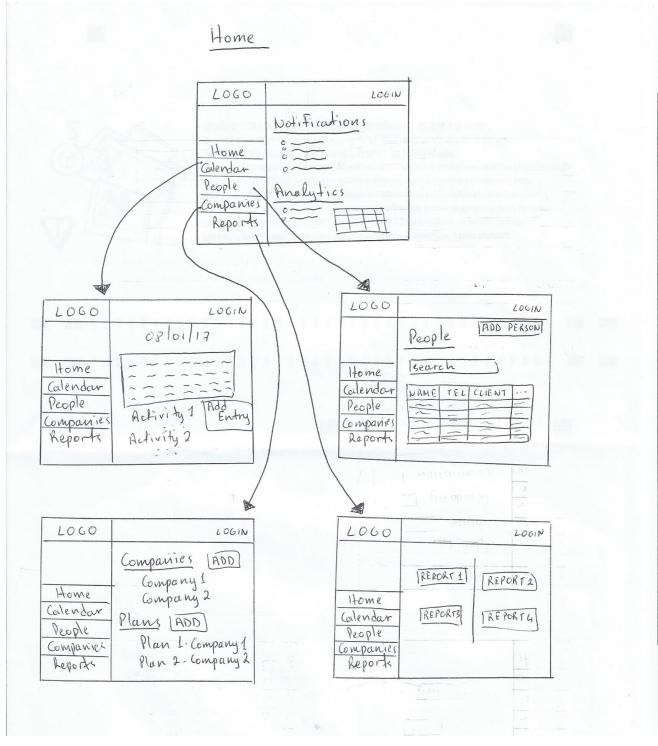
# Chapter 4

## Design

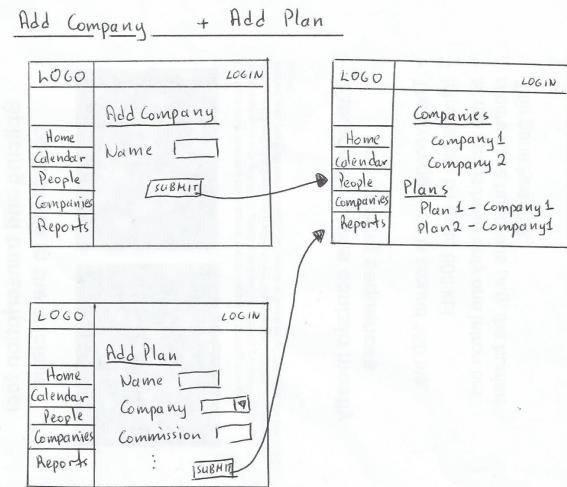
### 4.1 Initial Designs

The design of the system had to be done very careful taking into consideration every user's need. Behind the system there is a workflow that has to be followed in order for all of its functionalities to be meaningful. Below, there is an outline of the different workflows that could possibly take place in the system. For each workflow, I have drawn some sketches as first low-fidelity prototypes of the application. Figure 4.1a shows the basic workflow from the Home page of the application. The menu/navigation bar will directly provide access to the four main areas of the system from any page (Calendar, Our People, Companies and Reports).

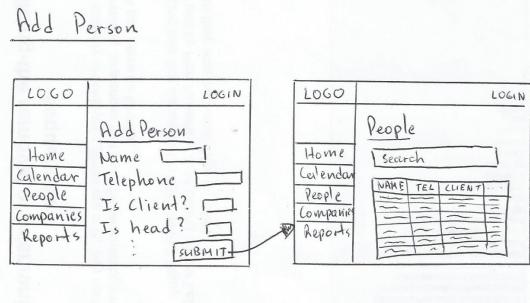
- Initially, before the system has ever been used, the agent has to enter any company he works with. Afterwards, the agent also has to enter every different insurance plan each company provides, among with their commission percentages and any other essential information required for each of them. This means that, there should be a designated area in the system to enter that essential information in a meaningful and easy way for an insurance agent. This combined process would usually be done once at the very beginning, unless co-operations with companies change. (Figure 4.1b)
- In the same way, the next step when using the system is to enter all of your known people/contacts. This is a repeatable process and a very important part of the system , however it is not something that is done more than once per day usually. In other words, there should be an area for this functionality but not necessarily being accessed from anywhere or being in the home page. (Figure 4.1c )
- Accordingly, after companies and people are entered into the system, contracts have to be entered for every client, among with every essential information needed. This is a significant process as well but it is rarely done daily in real life. It is only done when an actual contract has been created. Each contract is related to an insurance plan, which is in turn related to a company. (Figure 4.1d)
- The agent will be able to enter into the system his calendar activities, I.e. any meetings with customers or phone calls. The best idea is that a calendar GUI should be available for this, which is considered a user friendly tool. This process will be done very often during the day. (Figure 4.1e)
- Last but not least, the agent will be able to see reports from the available range of reports. An area with all kind of reports should be available and distinguishable.



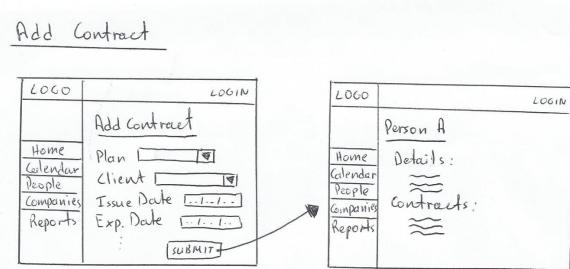
(a) Home Page Prototype workflow - App.E.4



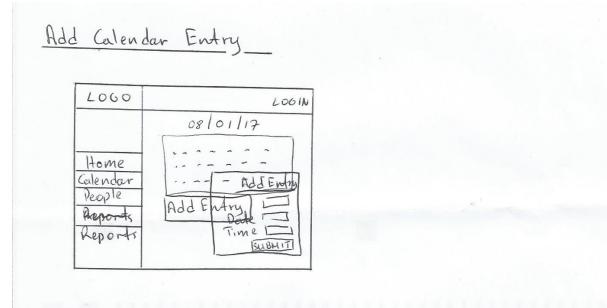
(b) Add Company and Plan Prototype - App.E.5



(c) Add Person Prototype - App.E.6



(d) Add Contract Prototype - App.E.7



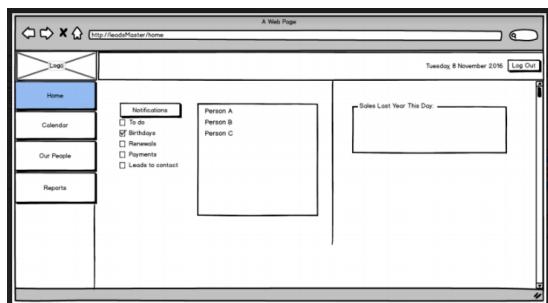
(e) Add Calendar Entry Prototype - App.E.8

Figure 4.1: First Low-Fidelity Prototypes

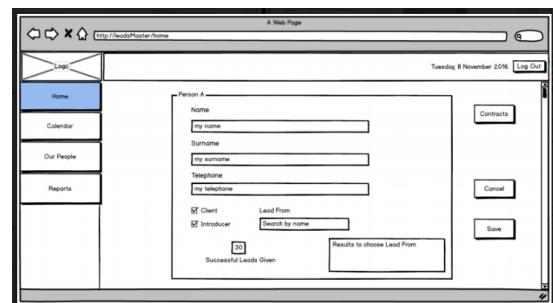
### 4.1.1 Wireframe Design

The above process of the sketches, was of no doubt very helpful for me, as a developer, to think of the general structure of the application. However, a more high fidelity version of prototyping was done afterwards. These wireframes (see Figure 4.2) were created using mybalsamiq online tool (<https://www.mybalsamiq.com/>). They outline the general design of the application as well as a draft design of some of the pages, particularly, that it will include. Prototyping before implementation is a method that had a series of benefits for the project development [11].

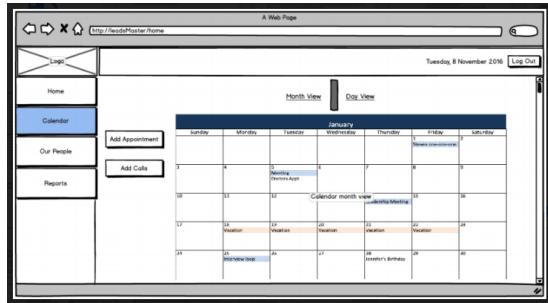
- First of all, prototypes help to ensure that the solution does what it is supposed to do, not what the developer thinks it should do.
- Moreover, prototyping helps to identify and address problems early on, for example any missing features of the system.
- In addition to this, prototypes help to eliminate any ambiguities and improve the accuracy in the requirements or functionalities interpretation.
- Prototypes were also used as a reference point when developing the product.



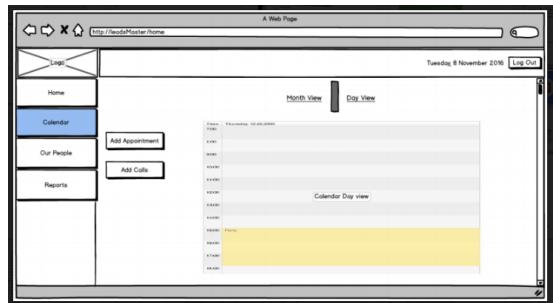
(a) Home Page Prototype - App.E.9



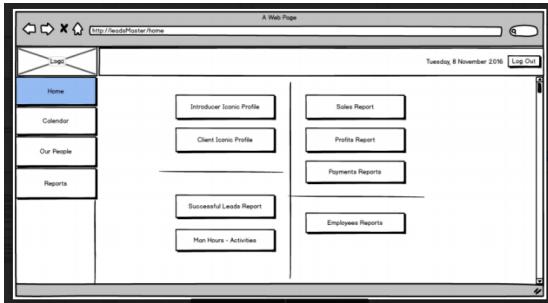
(b) Person Profile - App.E.10



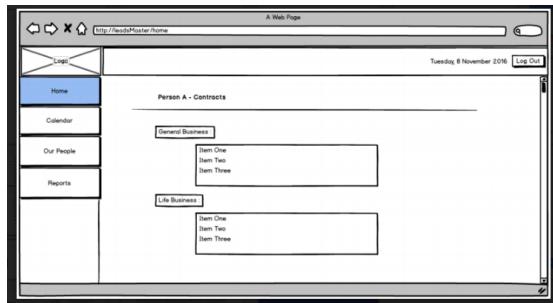
(c) Calendar Prototype - App.E.11



(d) Show Calendar Entries - App.E.12



(e) Reports Page Prototype - App.E.13



(f) Contracts Of a Person Prototype - App.E.14

Figure 4.2: Wireframes

## 4.2 Graphical User Interface

Having some final prototypes, the next step was to design the actual Graphical User Interface, based on those. When designing such applications that are going to be used by non-experts in technology users, the designer has to think about the ease of use as a real user. In addition to this, the next factor to be taken into consideration is what the user is used to up to now, i.e. what kind of software they are used to work with.

In this project, the ease of use of the application was not the most important goal or part to be achieved, and for this reason I have not taken any user feedback on the GUI before the implementation. However, a research have been made on what is currently out there in the market, when talking about similar CRM and insurance systems ([Insightly](#), [SAP Digital CRM](#), [Websure](#), [Quotall](#) and others). This helped taking decisions on the data representation that the users would be most familiar with. After this brief research, the design had some minor changes from what the wireframes showed. This was done because of the fact that it had a kind of "modernised" design (i.e. lines in the middle of the page), which might not be something familiar for the users to look at and it would make it more complicated for them to get used to.

### 4.2.1 Data Representation

The system's database is quite complicated, nevertheless it is the most important part of this project. It has different data that can be distinguished into different categories (Contracts, People, Companies etc). Moreover, the majority of the data include numbers, i.e. Sales, Profits, Insurance Costs etc. A decision was to be made, on how all these data would be best represented in the application to make it as much user-friendly as possible.

Tables are an effective way of representing numerical data. They are useful when you require precision in numbers, when you have to deal with relatively few numbers as well as when you want to categorise data and compare them [5]. Various CRM systems as well as Insurance companies systems use tables to represent their data ([6],[2]). Sales reports, profits reports, different statistics as well as information about a person are represented in a table. This seems to be clearer for users to perceive, and it is the way they are used to read data from. For this reason, as figure 4.3 shows, the decision was made to use tables to represent any report data as well as the people, companies, plans etc.

ID	Name	Surname	Telephone	Client	Introducer
✓ 937495	Alexiaa	Haralambous	010-12345678	Yes	Yes
✓ 758473	Manager	User	011-12345678	No	Yes
✓ 988942	John	Smith	012-12345678	No	No
✓ 374387	Helen	Johns	013-12345678	No	Yes
✓ 123456	Chris	McDonald	014-12345678	Yes	Yes
✓ 832827	Maria	Amvrosiou	015-12345678	Yes	No
✓ 293847	Lorenzo	Betto	077-12345678	Yes	No
✓ 632541	Andrew	Jobs	098-12345678	Yes	No

Figure 4.3: Table Data Representation

Conversely, when talking about data that come from different database tables, i.e. they are not directly related to each other, like people profiles and their contracts, a different data representation had to be chosen. For this kind of data, a simple representation of a title and any relevant details below was decided, like in figure 4.4, showing an example for a person's profile and a person's contracts.

Details	
ID	937495
Date Of Birth	8/2/1995
Telephone	0035799990035
Email	alexiaharalambous@gmail.com
Client	Yes
Introducer	Yes
Lead From:	None
Has Cancelled Contracts:	Yes

General Contracts			
No	Plan	Expiration Date	Next Payment
2	C3 Car Plan	24/3/2017	21/1/2017
30	C3 Medical	21/12/2017	21/5/2017

Figure 4.4: Unrelated data representation. e.g. Profile

#### 4.2.2 GUI Final Design

Taking all the above factors into consideration a final GUI was designed. Figure 4.5 below shows the homepage design of the web application. It basically contains a menu/navigation bar on the left hand side of the page, with the possibility to include a user's profile picture on top. This menu will be accessible from every single page of the application making navigation easier for users. Colours of the design were randomly chosen and at the same time there was an effort to be as neutral colours as possible in the sense of not being girlish or boyish. A white main background was chosen so that the data will be as clear as possible. The same design baseline was used for every page of the application.

Leads Master

alexiah's Dashboard

Welcome back!

Show Previous Sales  Hide Previous Sales

Notifications

To Do  Birthdays  Renewals  Payments  Leads  All

To Do

- => First meeting with Alex Shevland

General Renewals

Number	Name	Surname	Plan
30	Alexiaa	Haralambous	C3 Medical

Leads To Contact

- 988942 , John Smith
- 648845 , Haralambos Haralambous
- 1234567 , Andreas Gregorou
- O , Testing User
- 832726 , Margaret McKitth
- 758473 , Manager User
- 823972 , Harry Theodorou
- 782323 , Ero Theodoulou
- 2345 , Antony Georgakis
- 374387 , Helen Johns

Figure 4.5: Home Page GUI Design

## 4.3 System Component Diagram

A component UML Diagrams can be interpreted as a static implementation view of a system, which represents the organization of the components a system consists of. Such diagrams usually consist of Components, Interfaces and Dependencies (i.e. direct relations between two of the other elements) [15]. Dependencies usually point from a component to an interface.

The following component diagram (figure 4.6) visualises how the system is going to be set up by distributing it in the different components that it consists of. A Model-Controller-View architecture was chosen to represent this diagram since the actual implementation is going to be based on this architecture. The actor of the application, which is either the administrator or an employee can access different views including Home, Companies, Our People, Calendar and Reports.

Home page sends email notifications for different reminders or birthday wishes. The controller will request server authentication from the external dependency Gmail SMTP server using the pre-defined authentication details, while the Notification Component from the models will figure out whether an email has already been send once so that no duplicate emails are send out.

Furthermore, any page accessed by the user requests model updates while accessing the database models through the Controller's Web Server . An essential point to note here is that most of the reports require contracts profit calculations. For this, Profit Calculation Component is also being queried through the Web Server managed from the Controller. Finally, after data are collected and models were updated, the corresponding view is updated using gathered data.

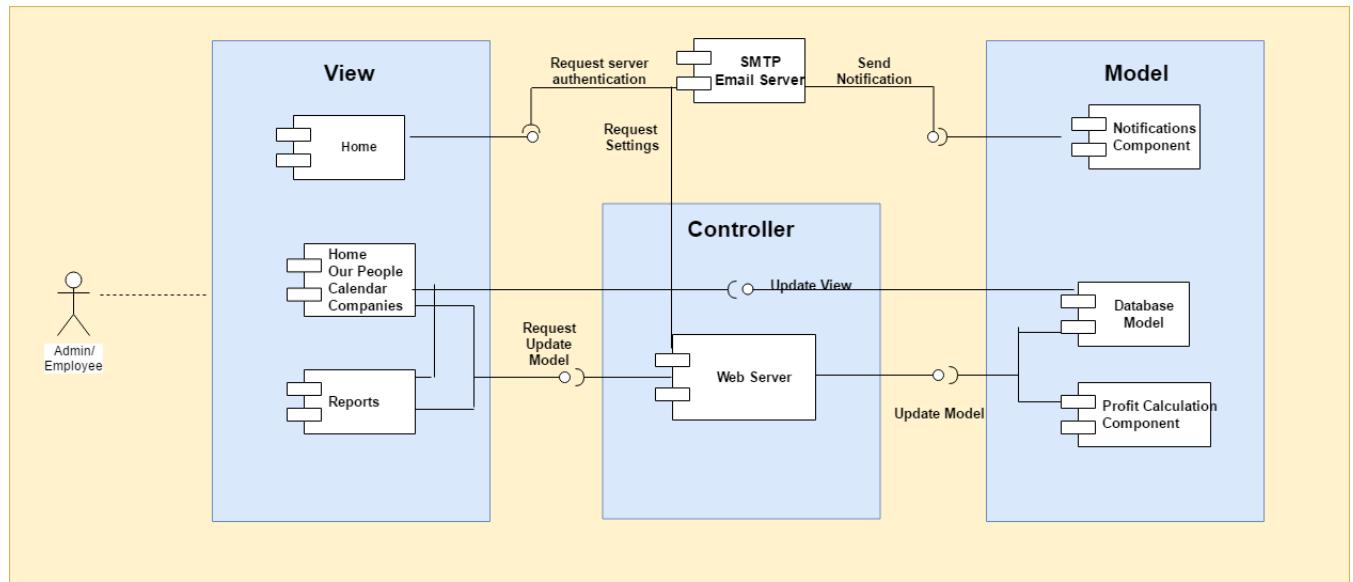


Figure 4.6: Component Diagram - App.E.15

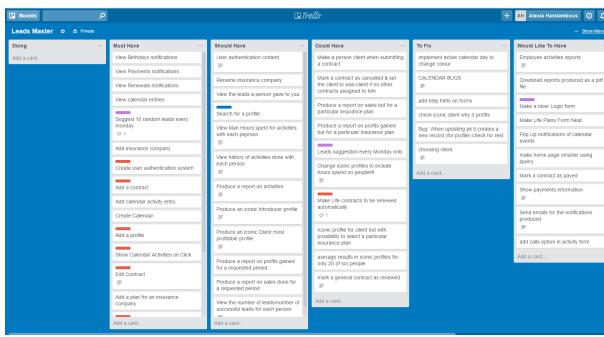
# Chapter 5

## Implementation

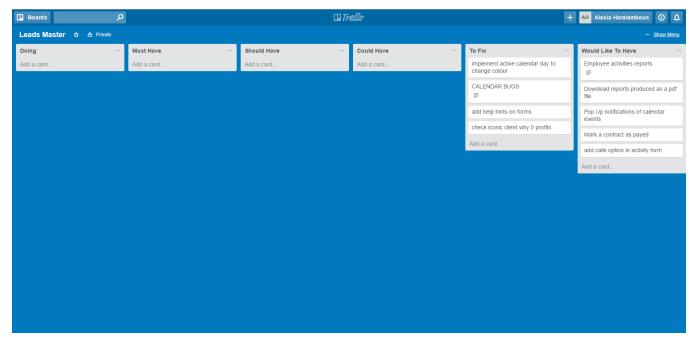
### 5.1 Technologies Used

#### 5.1.1 Trello

Trello is a modern project management system which provides a spontaneous way of organising and editing tasks. It has a visual nature similar to a physical board with post it notes for example. Moreover, it also has an android application, which helped me adding any ideas that came to my mind on the go. I have created four columns in which I added cards for each requirement of each section ( Must Have, Should Have, Could Have and Would Like To Have). Figures 5.1a and 5.1b show how my boards were formed at the beginning of the project and how they ended up at the very ending.



(a) Trello at the beginning of project - App.E.16



(b) Trello at the end of project - App.E.17

#### 5.1.2 Google Drive

Among any other tools been used, [Google Drive](#) - Google Docs, Google Spreadsheets have also been used . This was proven a very helpful tool as any of my project's artefacts ( Images, Business Documents etc) or reports and research documents were stored in there without worrying having data backed up on an usb drive or carrying it everywhere with me.

### 5.1.3 Django

Django is a Web Framework based on Python language which implements the MVC architecture mentioned in the content diagram section 4.6. I ended up using Django framework because of its variety of ready-to-use components and hence I only had to focus on writing the application's logic without much difficulty. Some of the main functionalities provided by Django that I have used are the database migration services, content administration as well as user authentication service. The main reason I have used Django during my project though it was because I have already used before and I was familiar with it, which meant I wouldn't have to spend much time familiarising with it.

To design a decent front end , HTML and CSS along with Bootstrap components have been used. JavaScript programming language has also been used to handle any front end functions of the application or for scripting interactive effects inside the browser in other words, i.e. hiding components on click (Details on usages can be found in a later section 5.4).

### 5.1.4 SMTP Server

During my project's implementation I had to use an email client service to send notification emails to customers. For this, Gmail's SMTP Server settings [1] needed to be used. I have created a Gmail account for the web application which it would be used to send out those emails. Consequently, the settings of the project located in settings.py file have to be changed (Figure 5.2 ) in order to use Gmail services in Django.

```
EMAIL_HOST = 'smtp.gmail.com'  
EMAIL_HOST_USER = 'leadmaster17@gmail.com'  
EMAIL_HOST_PASSWORD = '*****'  
EMAIL_PORT = 587  
EMAIL_USE_TLS = True
```

Figure 5.2: Gmail SMTP settings

### 5.1.5 GitHub

Finally, a version control software was decided to be used mainly for backup reasons in case something goes wrong with the implementation and I would have to revert to a previous version. GitHub is a version control software which manages changes to a project. It was proven extremely helpful, as while I was trying to implement a particular part of the system (see Calendar section 5.3.3), I changed something in the process of experimenting, which I could not seem to know how to fix. Having my GitHub repository enabled me to go and reach my previous coding version.

## 5.2 Database

### 5.2.1 Database Schema

The most important part of my project was to form a database that would meet all of the application's demands. The database discussed in this section represents the "Database Model" component of the Component Diagram

(figure 4.6). During the implementation of my project, I had to think of several scenarios or aspects that would manipulate data. As I have mentioned in section 2.2, the application would mainly have to deal with people of different categories, companies, their insurance plans, calendar activities and contracts. Subsequently, the application will have to produce various reports, which would require some additional data than the essential data for the sections stated earlier. These factors contribute to the resulted Database Schema (figure 5.3) with the following relations:

- **Person** ([id](#), [idperson](#), name, surname, gender, telephone, email, dateofbirth, occupation, isintroducer, isclient, leadfrom, wasclient)
- **Company** ([idcompany](#), name)
- **GeneralBusinessPlans** ([planid](#), name, company, commission)
- **LifeBusinessPlans** ([planlifeid](#), name, company, firstyearcommission, minpercen, maxpercen, futureprofit, futureprofit2, futureprofit3, futureprofit4, agelimit)
- **GeneralContract** ([id](#), contractNum, client, issuedate, expirationdate, plan, basicvalue, doses, nextpayment, price, duration, notes, cancelled)
- **LifeContract** ([id](#), contractNum, client, issuedate, expirationdate, plan, basicvalue, doses, nextpayment, price, duration, notes, cancelled)
- **Activity** ([activityid](#) activityname, customerid, date, time, duration, email)
- **Calendar** ([entryid](#), activity, employee)
- **UserProfile** ([employeeid](#), user, position, salary, hourspermonth)
- **birthdayNot**, **genRenewalsNot**, **genPaymentsNot**, **lifeRenewalsNot** and **lifePaymentsNot**

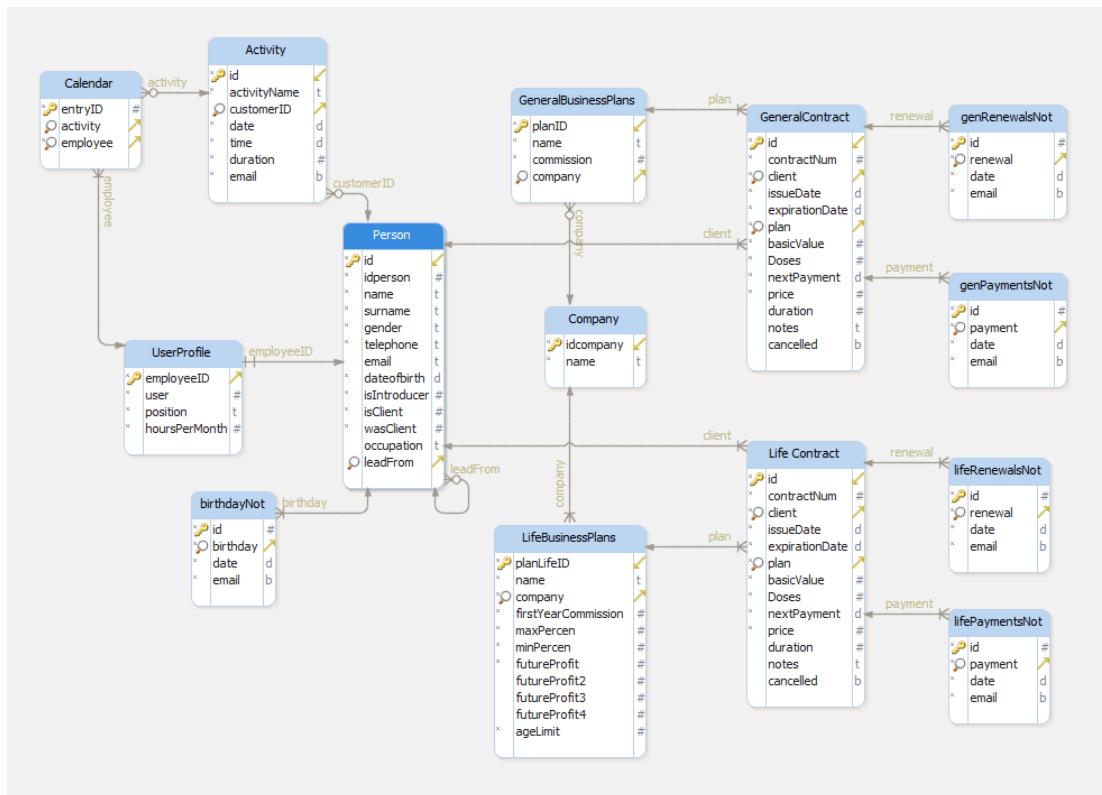


Figure 5.3: Final Database Schema - App.E.18

### 5.2.2 Database Explanation

The Database Schema above, shows all the tables of the resulted database and the relations between them. This section expands on explaining the relations of the tables.

- **Person** table contains any information about people. Here, isIntroducer, isClient and wasClient fields denote whether the person is an introducer (if the person has introduced a person), whether the person is a current client and if the person was a client once, but is currently not. Moreover, leadFrom field is one-to-one related with Person table and denotes from which Person this person was introduced.
- **Company** table stores every company that the agent works with. Accordingly, **GeneralBusinessPlans** and **LifeBusinessPlans** contains every plan that each related company offers to the agent to sell.
  - Each plan has a commission field. This denotes the commission percentage that the company gives to the agent. As you can see, Life Plans have some additional fields because of the way their profit is calculated (see section 2.2.2 ).
- **GeneralContract** and **LifeContract** tables contain every contract of every person.
- **Activity** table stores details about every **Calendar** (table) entry. Each calendar activity is related to an employee (or **UserProfile** entry).
- **UserProfile** table represents any user of the system or any employee in other words that is going to operate the system.
- The remaining tables (**birthdayNot**, **genRenewalsNot**, **genPaymentsNot**, **lifeRenewalsNot** and **lifePaymentsNot**) were created as part of the Notification Component found in the Component Diagram (figure 4.6) to help keeping track whether an email was sent for each notification during the day.

### 5.2.3 Database Relationships

The following are the main relationships, between the relations defined above, that need to be understood by someone to understand the system's logic and workflow.

- One **Person** can be a lead from One Person, but a person can introduce many people.
- One **Company** can provide many General or Life plans (**GeneralBusinessPlans**, **LifeBusinessPlans**), but one plan can only be provided by one Company.
- One **Contract** can include many **plans** and one plan form many contracts (please note that this relationship is wrong on figure – above because of limitation of the software I have used).
- One **Contract** can be assigned to one **Person**, but one person can have many contracts.
- One **Activity** can be related with one **Person**, but one Person can be related to many Activities.

### 5.2.4 MySQL usage and Queries Formulation

It is worth mentioning here that before doing any actual implementation of the application, I started off creating a database (Figure 5.4) in [MySQL Workbench](#). This decision was taken to ensure that the database logic meets the requirements of the application. Moreover, among the created database, I have also created some of the main

queries that would be needed for some of the reports. A complete list of the queries is available in the appendices section C, however below are some of the most important ones.

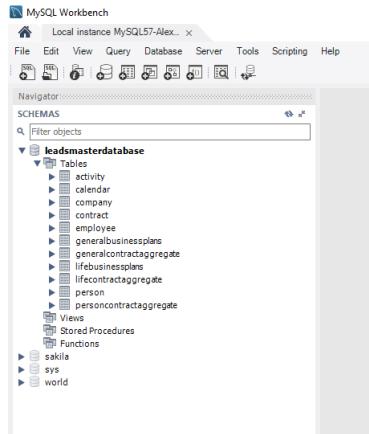


Figure 5.4: MySQL Database Creation in MySQL Workbench

## Queries

1. Show number of successful leads given by person with id=988998:

- ```
SELECT count(idPerson)
  FROM person
 WHERE LeadFrom = "988998"
 AND IsClient = 1
```

2. Show an Iconic Introducer Profitable Profile:

- Calculate Number of leads given from each person  

```
SELECT count(idPerson)
  FROM person
 WHERE LeadFrom = "988998"
```
- Calculate successful number of leads from each person  

```
SELECT count(idPerson)
  FROM person
 WHERE LeadFrom = "988998"
 AND IsClient = 1
```
- Create a percentage of successful leads given from each person  
 $((leads-successful leads)/leads )*100$
- Calculate profit gained from each lead given  

```
IF (type=general) THEN
  MUL(basicvalue, plan.commission)
IF (type=life) THEN
  (Calculate life profits)
```
- List people who have over 70 successful leads percentage (sort value 1)
- List people based on profit gained from them (sort value 2)

## 5.3 Django Application

Django's implementation logic consists of two main parts. The html templates, which represent the design of the pages and the views, which pass data to the templates. Template files cope with the front-end design. Any Javascript or JQuery functions are connected with these templates through an external javascript file (custom.js). During the front end implementation of the application, I have noticed that many components of the design were repeated (e.g. Navigation bar, Top bar etc). In consequence, I have implemented a base template, which includes the navigation bar as well as the top bar, and each of the other html pages extend this base template's design. The navigation bar content and the top bar content are only visible when a user is logged in. This approach was proven helpful as it saved a lot of time writing repeated code. Figure 5.5a shows the login page of the application. Here, the REGISTER button is available to register an administrator user, but only if one is not already registered (figure 5.5b. When the administrator user is logged in, he has the option to register other users (i.e. employees).



Figure 5.5: User Authentication Of The System

The following subsections outline the important parts of each application's page implementation as well as any difficulties encountered during this process. The web application contains five main pages: Home Screen, Our People, Calendar, Companies and Reports.

### 5.3.1 Home Screen

The Home page of the application represents the dashboard of each user (figure 5.6 ). Here the user can see any notifications of the day, which include every user's calendar activities, people birthdays as well as contract renewals and payments due the current day. Additionally, every Monday ten leads (people who are not clients) are listed randomly as a reminder for the agent to approach them as prospective clients and arrange a meeting with them. The notification component shown in the Component Diagram (figure 4.6) is used in Home Page in order to send necessary emails.

Figure 5.6: Home Page - App.E.19

The To Do section of the notifications box shows any calendar activities of the day assigned to every registered user of the system. Here only the name of the activity and the person related to the activity is being shown; more details of each activity can be found in the Calendar section.

The Birthdays section lists people who have their birthday on the current day as well as their birth year. An email is sent, to every person who has a registered email, wishing them a happy birthday. An email is also sent for each renewal or payment due on the day, kindly reminding them to get in touch and pay or renew their contract. Here, as part of the Notification Component, an implementation had to be thought of, so that emails are only sent once, and not every time the home page is loaded, and hence every time the view function of this page requests data from the Controller. For this reason, the database consists of those extra tables forming the Notification Component (see database section 5.2.2) for each kind of notification, to keep track and check every time whether an email was sent for a particular notification. Figure 5.7 shows how this check is done in the backend's views.py file.

A small section showing the sales (contracts) that the agent did previous years on current day is visible at the top of the dashboard as a motivation for users, to always have contracts in this "throwback" section, which would mean more sales and consequently more profits. This section can be hidden if wanted by the user using the provided radio buttons.

```
#Gather payments for current day
generalpayments = []
for contract in GeneralContract.objects.filter(nextpayment=today.date(),cancelled=False):
    generalpayments.append(contract)
genPaymTable = genPaymentsNot.objects.all()
if genPaymTable.filter(payment=contract, date=today.date()).exists():
    flag = True
else:
    if contract.client.email:
        plans=""
        for p in contract.plan.all():
            plans+= str(p)
        text='This is a reminder that your '+plans+' contract, with contract number: '+ str(contract.idcontract) \
        + ' needs to be paid! Please get in touch to arrange a meeting. Thank you, Leads Master'
        print contract.client.email
        send_mail(
            'Contract Payment Reminder',
            text,
            settings.EMAIL_HOST_USER,
            [contract.client.email]
        )
        obj = genPaymentsNot(payment=contract, date=today.date(),email=True)
        obj.save()
```

Figure 5.7: Email notification check for payments - App. D.1

### 5.3.2 Our People

This page contains any information about people (figure 5.8a). A search functionality has been implemented, which accepts either ID or complete/partial name input to search for a person. Using a table representation, clients and non-clients(leads) have been categorised, using blue and red colour respectively. In this table only the most important information about a person are visible. For further information, a profile page (figure 5.8b) can be viewed when pressing the pencil button located next to each person's ID. Three input choices are provided through this page: adding a new person and adding a new life or general contract in the system. These buttons open simple user-friendly forms to provide any details needed for each input.

In each person's profile page, personal details are shown and can be edited using a form. Furthermore, this page contains any contracts of the person, along with their expiration and next payment dates, categorised in the two business fields. The orange coloured part in this page shows the successful leads percentage of the person, i.e. how successful has this person been in giving leads that became clients, together with a list of the actual leads given from the person. Moreover, each contract has an assigned contract page (figure 5.8c). From this page, the user can view and edit details of the contract. Worth noting here is that next payment amount is calculated and shown here based on the total payment amount and the doses chosen from the client.

**(a) Our People Page - App.E.20**

| ID         | Name          | Surname     | Telephone     | Client | Introducer |
|------------|---------------|-------------|---------------|--------|------------|
| 937495     | Alexia        | HARALAMBOUS | 001579990035  | Yes    | Yes        |
| 758473     | Manager       | User        | 004483274829  | No     | Yes        |
| 888912     | John          | Smith       | 00448372847   | No     | No         |
| 714053     | John          | Smith       | 001579990036  | No     | No         |
| ✓ 123456   | Chris         | Mcmillan    | 0756424242    | Yes    | Yes        |
| ✓ 812827   | Maria         | Amvrousi    | 0744912893    | Yes    | No         |
| ✓ 293847   | Lorenzo       | Betto       | 0783928474    | Yes    | No         |
| ✓ 632541   | Andrew        | Jobs        | 0015799874512 | Yes    | No         |
| ✓ 833226   | Margaret      | HICKH       | 07547053254   | No     | No         |
| ✓ 789456   | Alex          | Shawland    | 07654123987   | Yes    | No         |
| ✓ 825362   | Kateline      | Heinz       | 007519654231  | Yes    | No         |
| ✓ 8        | Tekking       | User        | 00332114655   | No     | No         |
| ✓ 848905   | Haralambos    | Haralambous | 001579990037  | Yes    | No         |
| ✓ 666023   | Andreas       | paragiotou  | 96446165      | Yes    | No         |
| ✓ 96664518 | Christodoulos | Georgiou    | 96446518      | Yes    | No         |
| ✓ 1234567  | Andreas       | Gregoriou   | 99129923      | No     | Yes        |
| ✓ 956558   | RAMELLA       | HARALAMBOUS | 99258465      | Yes    | No         |
| ✓ 00449764 | αντίκτι       | αντίκτι     | 99461968      | Yes    | No         |

**(b) Profile Page - App.E.21**

| Details                  |                              |  |  |
|--------------------------|------------------------------|--|--|
| ID                       | 632541                       |  |  |
| Date Of Birth            | 29/12/1971                   |  |  |
| Occupation               | Lawyer                       |  |  |
| Telephone                | 0015799874512                |  |  |
| Email                    |                              |  |  |
| Client                   | Yes                          |  |  |
| Introducer               | No                           |  |  |
| Lead From:               | Alexia Haralambous -- 937495 |  |  |
| Has Cancelled Contracts: | No                           |  |  |

**(c) Contract Page - App.E.22**

| General Contracts |             |                 |              |
|-------------------|-------------|-----------------|--------------|
| No                | Plan        | Expiration Date | Next Payment |
| 45                | C2 Car Plan | 21/5/2017       | 24/1/2017    |

### 5.3.3 Calendar

When the implementation of the calendar page (figure 5.9a) has started, I had to choose whether to use a ready-to-use calendar library or to implement my own. Initially, I tried using provided libraries, however, that turned to be very complicated to combine with the rest of the application. After a lot of effort and time spent researching, I have decided to create my own calendar implementation using html builder through Javascript. This decision was also hard and time consuming to implement, however I have managed to get a decent result. A pop up form window shows up when the user wants to insert a new calendar entry. Below the calendar, activities assigned to the logged in user are shown among with any details associated.

**(a) Calendar Page - App.E.23**

| MARCH 2017 |    |              |    |    |    |    |
|------------|----|--------------|----|----|----|----|
|            |    | Add Activity |    |    |    |    |
| Mo         | Tu | We           | Th | Fr | Sa | Su |
| 27         | 28 | 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 | 1  | 2  |

14 / 3 / 2017  
12:30 p.m.  
30 min  
Sample Meeting  
With: Andrew Jobs  
Meeting Minutes:

**(b) Add Calendar Entry - App.E.24**

| Add Activity   |            |
|----------------|------------|
| Name           |            |
| Related Person |            |
| Date           | 2017-03-06 |
| Time           | 14:10:16   |
| Duration       |            |
| Employee       |            |
| Save           | Cancel     |

Figure 5.8: Our People - Profile - Contract Pages

Appendices section D.2 includes the calendar's implementation code included in the javascript file. When the page is loaded, current date is taken using Date() javascript library. From this date, significant details are extracted (i.e. previous month, previous month's days, future month etc). After gathering all details needed, three different loops build, append and pass html code manually to the template for previous month's visible days, current month's days and next month's visible days respectively. The hard part of this process, was to understand how each library interpret each date and week days, as well as to calculate how many days are going to be visible from previous and forth month.

### 5.3.4 Companies

This simple, yet important page (Figure 5.10), shows every company that the agent works with, and the plans each company provides to the agent to sell. Each plan is shown using table representation which also shows the commission percentages that the agent gets from each plan. Similarly, each item can be edited using provided forms. Moreover, three available options of input are available here; Add a new company in the system and add a general or life plan in the system.

| Name                           | Company                      | Commission |
|--------------------------------|------------------------------|------------|
| ✓ Company 3                    | TRUST INSURANCE (CYPRUS) LTD | 0.0        |
| ✓ Company 2                    | TRUST INSURANCE (CYPRUS) LTD | 0.0        |
| ✓ Company 1                    | Company 3                    | 20.0       |
| ✓ trust                        | Company 1                    | 23.0       |
| ✓ TRUST INSURANCE (CYPRUS) LTD | TRUST INSURANCE (CYPRUS) LTD | 0.0        |
|                                | Company 2                    | 5.0        |

Figure 5.10: Companies Page - App.E.25

### 5.3.5 Reports

This part of the application contains reports available for the user (figure 5.11) This section can be easily extended as it can be seen from the design and include any kind of reports of any existing or new category. At this stage the most important were implemented. Specifically, the following points list each report implemented in this project.

| Iconic Profiles           | Leads Reports                 |
|---------------------------|-------------------------------|
| Introducer Iconic Profile | Successful Introducers Report |
| Client Iconic Profile     | Man Hours - Activities        |

| Portfolio Reports |
|-------------------|
| Sales Report      |
| Payments Report   |

Figure 5.11: Reports Page - App.E.26

- **Introducer Iconic Profile.**

As mentioned before, people who introduce people to insurance agents are of a great importance to them. The goal of insurance agents is to constantly increase their clients, not to approach only their existing ones for new contracts. Hence, leads have to be introduced by someone almost on a daily basis. Then again, the agent has to approach only introducers whose leads are successfully becoming clients, without spending a vast amount of time making them clients and if possible only those whose leads have brought more profit for the agent. Therefore, this report (figure 5.12) calculates an average iconic profile from current introducers with successful leads percentage over sixty-five and from current introducers from which the profit gained was high.

The first table lists the twenty introducers (if there are twenty) whose successful leads percentage is over sixty-five percent in descending order. Successful leads percentage is the percentage of leads given by a person which became clients. Figure 5.13 shows how this percentage is calculated for an introducer. The second table lists the twenty introducers (if there are twenty) in descending order based on the profit the agent gained from the introduced clients. The profit mentioned here takes into consideration both all general and all life business contracts of each person. In both tables, hours spent on given leads up to that time are taken into consideration as a second sorting value, in ascending order. Thus, the age range, average age, average gender and four occupation categories are taken from these two tables' results and are presented as the iconic introducer profile.

**Iconic Introducer Profile**

|              |                                      |
|--------------|--------------------------------------|
| Age Range:   | 22 - 28                              |
| Average Age: | 24.4                                 |
| Gender:      | Female                               |
| Occupations: | Customer Service Employee<br>Student |

**Introducers with successful leads over 65% :**

| Name  | Surname  | Hours spend | Percentage Of Success | Num Of Clients |
|-------|----------|-------------|-----------------------|----------------|
| Helen | Johns    | 0.0         | 100.0%                | 1              |
| Chris | McDonald | 1.0         | 100.0%                | 3              |

**Introducers sorted based on profit gained from them:**

| Name    | Surname     | Profits  | Hours spend |
|---------|-------------|----------|-------------|
| Alexiaa | Haralambous | 375220.0 | 0.08        |
| Helen   | Johns       | 3000.0   | 0.0         |
| Chris   | McDonald    | 2250.0   | 1.0         |

Figure 5.12: Iconic Introducer Profile Report - App.E.27

```

def successfulLeadsPercentage(introducer):
    numOfLeads = 0
    numOfSuccLeads = 0
    leadsFromIntroducer = Person.objects.filter(leadfrom=introducer.id)
    # Calculate
    for person in leadsFromIntroducer:
        numOfLeads += 1
        if person.isclient == 1:
            numOfSuccLeads += 1
    #Calculate successful PERCENTAGE
    # Where successful PERCENTAGE is ((leads-successfulLeads)/leads)*100
    if numOfSuccLeads>0:
        percentage= numOfSuccLeads/numOfLeads*100.0
    else:
        percentage=0
    percentage=float("{0:.2f}".format(percentage))

    return percentage

```

Figure 5.13: Successful Leads Percentage Function Calculation - App.D.3

- **Client Iconic Profile.**

An insurance agent can have a wide range of customers, from a single client insuring his car because he is obligated to, to a big company insuring its employees and its premises. The aim is to approach firstly customers that will bring the more profit, and yet any other "small" customers. This report (figure 5.14) initially shows the twenty most profitable clients, i.e. descending order of profit gained from all of their contracts and secondly in ascending order of hours spent on them up to that point. In other words, the person who brought the highest profit in the less hours spent with him is considered the best client. The averages are calculated from this list, in the same way as in the previous report, and shown at the top of the page as an iconic client profitable profile.

Likewise, the agent has the option to get a client profitable profile for each of the plans that he sells. For example, if the agent aims for more customers that own a business and wants to insure their employees he can select the Employer's Liability Plan from the General Plans drop down list. Consequently, this report will help the agent approach the best group of people for each plan he aims to sell based on his needs.

| Name     | Surname     | Profits | Hours |
|----------|-------------|---------|-------|
| PARIS    | ARGYRIDES   | 31250.0 | 0.0   |
| Chris    | McDonald    | 1800.0  | 0.5   |
| Alexia   | Haralambous | 713.33  | 0.5   |
| Christos | At Glasgow  | 250.0   | 0.0   |
| Andrew   | Jobs        | 220.0   | 0.08  |
| Kateline | Heinz       | 104.17  | 0.0   |

Figure 5.14: Iconic Client Profile Report - App.E.28

- **Sales Report.**

This report lists either sales done in a selected period or the profits the agent is going to gain or already gained in a selected period. Both reports are separated into General business and Life business.

- Sales shown are any contracts that the agent did during a period. For example during the 2nd of November 2016 and the 12th of December 2016, the report will list every contract that has issue date between these two dates. In each contract entry listed, important details are included such as issue and expiration dates as well as profit and annual premium (the amount the customer pays). In the end of each category table a sum of the sales and profits is calculated and shown.

| Num    | Client                   | Issue Date     | Expiration Date | Plan                  | Company             | Annual Premium | Profit |
|--------|--------------------------|----------------|-----------------|-----------------------|---------------------|----------------|--------|
| 928392 | Andrew Jobs -- 632541    | March 11, 2017 | March 10, 2018  | C3 Car Plan           | Company 3           | £800.0         | £160.0 |
| 654987 | Chris McDonald -- 123456 | March 11, 2017 | March 9, 2018   | C1 Car Plan HOME BEST | Company 1 Company 1 | £800.0         | £304.0 |

Sales For This Period: £1600.0  
Profits For This Period: £464.0

| Num | Client                       | Issue Date     | Plan         | Annual Premium | Profit |
|-----|------------------------------|----------------|--------------|----------------|--------|
| 789 | Alexia Haralambous -- 937495 | March 10, 2017 | C1 Life Plan | £800.0         | £480.0 |

Sales For This Period: £800.0  
Profits For This Period: £480.0

Figure 5.15: Sales Report - App.E.29

- Profit of a period is quite different and difficult to understand. The agent's profit is the profit gained from each contract during the periods' days and months every previous years. Figure 5.16 shows an example of what the corresponding queryset will get. Similarly, the profits are summed up and shown below each category table.

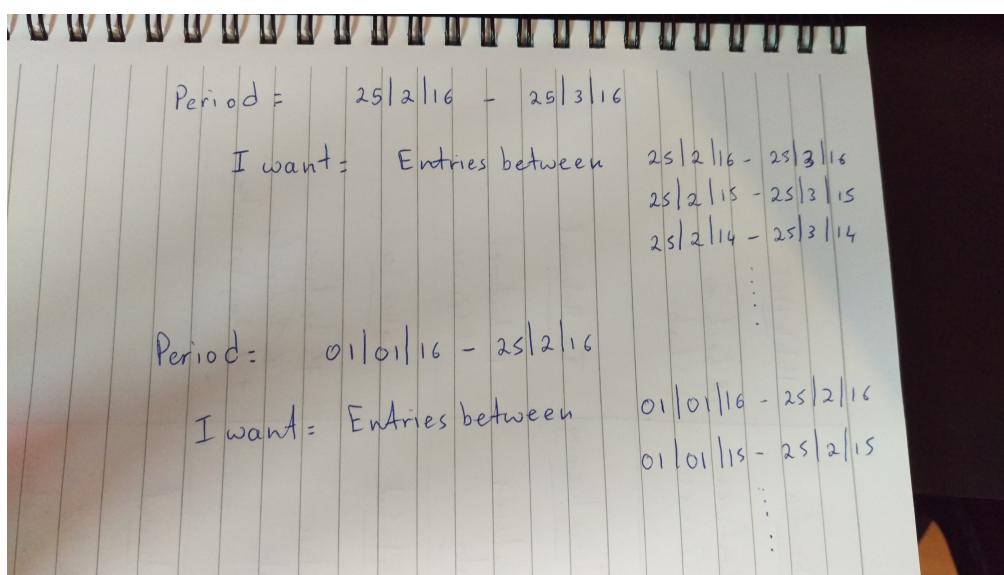


Figure 5.16: Profits logic example

Leads Master

Select Dates to show Sales:

Date 1: March 1, 2017 • Date 2: March 31, 2017  
Select Life Plan:  
Select General Plan:  
Search Clear  
© Sales • Profits

| Num    | Client                   | Issue Date     | Expiration Date | Plan                       | Company                                | Annual Premium | Profit  |
|--------|--------------------------|----------------|-----------------|----------------------------|----------------------------------------|----------------|---------|
| 928392 | Andrew Jobs -- 632541    | March 11, 2017 | March 10, 2018  | C3 Car Plan                | Company 3                              | £800.0         | £160.0  |
| 654987 | Chris McDonald -- 123456 | March 11, 2017 | March 9, 2018   | C1 Car Plan HOME BEST      | Company 1 Company 1                    | £800.0         | £304.0  |
| 5      | Kateline Heinz -- 625362 | March 24, 2016 | March 24, 2017  | C2 Fire Plan C2 House Plan | Company 2 TRUST INSURANCE (CYPRUS) LTD | £25000.0       | £3750.0 |

Profits For This Period: £4214.0

| Num | Client                        | Issue Date     | Plan         | Annual Premium | Profit |
|-----|-------------------------------|----------------|--------------|----------------|--------|
| 789 | Alexiaa Haralambous -- 937495 | March 10, 2017 | C1 Life Plan | £800.0         | £480.0 |

Profits For This Period: £480.0

Figure 5.17: Profits Report - App.E.30

- **Payments Report.**

This report will help the agent to be always up to date with any payments. It will list any upcoming payments due in the following five days (figure 5.18) as well as the payments were due previous days and were not completed (figure 5.19). It separates these payments into two categories as before, general and life contracts. The most helpful thing of this report is that it shows the exact amount that needs to be paid, i.e. the annual premium divided by the doses that the client chose to pay.

Leads Master

Register a user: [Register](#) Goodbye testUser, Thanks! [Logout](#)

Upcoming Payments  
General Upcoming Payments

| Num    | Client                | Issue Date | Plan        | Company   | Doses | Payment Due | Amount  |
|--------|-----------------------|------------|-------------|-----------|-------|-------------|---------|
| 928392 | Andrew Jobs -- 632541 | 11/3/2017  | C3 Car Plan | Company 3 | 1     | 17/3/2017   | £1000.0 |

Figure 5.18: Upcoming payments in the next 5 days report - App.E.31

**General Past Payments**

| Num                                  | Client                                | Issue Date                                 | Plan                                                            | Company                                | Doses     | Payment Due | Amount  |
|--------------------------------------|---------------------------------------|--------------------------------------------|-----------------------------------------------------------------|----------------------------------------|-----------|-------------|---------|
| 2                                    | Alexia Haralambous -- 937495          | 21/1/2016                                  | C3 Car Plan                                                     | Company 3                              | 3         | 21/1/2017   | £266.67 |
| 5                                    | Kateline Heinz -- 625362              | 24/3/2016                                  | C2 Fire Plan C2 House Plan                                      | Company 2 TRUST INSURANCE (CYPRUS) LTD | 2         | 14/3/2017   | £350.0  |
| 45                                   | Maria Amvrosiou -- 832827             | 17/2/2015                                  | C3 Car Plan                                                     | Company 3                              | 1         | 21/3/2016   | £600.0  |
| 9876                                 | Lorenzo Betto -- 293847               | 21/1/2017                                  | C2 Car Plan                                                     | TRUST INSURANCE (CYPRUS) LTD           | 1         | 21/1/2017   | £1000.0 |
| 45                                   | Andrew Jobs -- 632541                 | 21/5/2016                                  | HOME BEST                                                       | Company 1                              | 3         | 24/1/2017   | £266.67 |
| 44778877 PARIS ARGYRIDES -- 99887766 | 5/4/2016                              | HomeShield Home Shield EMPLOYERS LIABILITY | trust TRUST INSURANCE (CYPRUS) LTD TRUST INSURANCE (CYPRUS) LTD | 6                                      | 23/1/2017 | £33.33      |         |
| 9873                                 | Andrew Jobs -- 632541                 | 26/1/2017                                  | Home Shield                                                     | TRUST INSURANCE (CYPRUS) LTD           | 1         | 26/1/2017   | £200.0  |
| 123456                               | Stelios Gkiousas Gkiousas -- 99193397 | 14/11/2016                                 | MOTOR INSURANCE                                                 | TRUST INSURANCE (CYPRUS) LTD           | 1         | 29/1/2017   | £252.0  |
| 889965665                            | Christos At Glasgow -- 1234567889     | 30/1/2017                                  | C2 Fire Plan HomeShield                                         | Company 2 trust                        | 12        | 18/2/2017   | £69.5   |
| 654987                               | Chris McDonald -- 123456              | 11/3/2017                                  | C1 Car Plan HOME BEST                                           | Company 1 Company 1                    | 1         | 11/3/2017   | £1000.0 |

**Life Past Payments**

| Num | Client                       | Issue Date | Plan           | Company   | Doses | Payment Due | Amount  |
|-----|------------------------------|------------|----------------|-----------|-------|-------------|---------|
| 789 | Alexia Haralambous -- 937495 | 10/3/2017  | C1 Life Plan   | Company 1 | 1     | 11/3/2017   | £1000.0 |
| 3   | Chris McDonald -- 123456     | 18/12/2016 | C1 Life Plan   | Company 1 | 1     | 10/3/2017   | £650.0  |
| 98  | Andrew Jobs -- 632541        | 21/2/2016  | C3 Plus scheme | Company 3 | 1     | 21/1/2017   | £800.0  |
| 1   | Marianna Neokleous -- 661032 | 1/2/2017   | C3 Life Invest | Company 3 | 12    | 28/2/2017   | £83.33  |

Figure 5.19: Payments that need to be paid report - App.E.32

- **Successful Introducers Report.**

The first part of this report (Figure 5.20), is a listing with the ten top introducers. The success percentage in this report is solely calculated from how many leads given from this person became clients. It does not consider what contracts and what profits came out of those clients. Such report would tell the agent how likely an introducer's given leads are to become clients or not. An introducer can be found using the same search functionality used in Our People page. The *Details* button redirects in a page where more analytic results are shown for each introducer, i.e. it lists all given leads and all successful leads.

The user can choose which category to show and hide the other using the radio buttons.

**Successful Leads Reports**

| ID         | Name             | Surname     | Client | Percentage | Details                 |
|------------|------------------|-------------|--------|------------|-------------------------|
| 374387     | Helen            | Johns       | No     | 100.0      | <a href="#">Details</a> |
| 123456     | Chris            | McDonald    | Yes    | 100.0      | <a href="#">Details</a> |
| 648845     | Haralambos       | Haralambous | Yes    | 60.0       | <a href="#">Details</a> |
| 937495     | Alexia           | Haralambous | Yes    | 50.0       | <a href="#">Details</a> |
| 1234567889 | Christos         | At Glasgow  | Yes    | 0.0        | <a href="#">Details</a> |
| 758473     | Manager          | User        | No     | 0.0        | <a href="#">Details</a> |
| 1          | Mehran           | Eftekhari   | No     | 0.0        | <a href="#">Details</a> |
| 1234567    | Andreas          | Gregoriou   | No     | 0.0        | <a href="#">Details</a> |
| 99193397   | Stelios Gkiousas | Gkiousas    | Yes    | 0.0        | <a href="#">Details</a> |
| 2345       | Antony           | Georgakis   | No     | 0.0        | <a href="#">Details</a> |

Figure 5.20: Successful Introducers Report - App.E.33

- **Man Hours - Activities Report.**

This report, lists every activity(meeting) with a chosen person. A person can be found using the same search (figure 5.21a) functionality used in Our People page. The *Show* button redirects to the report generated (Figure 5.21b) for the selected person. This report listing contains date and duration of each activity as well as any additional notes or meeting minutes for each meeting. At the right bottom of the report, a sum of the hours spent with this person is calculated and shown. From this report, the agent can come into conclusions about a person, and can also remember anything discussed during their meetings. To get this report, calendar entries are retrieved from Calendar table, in addition to the associated details from the Activity table.

| ID       | Name       | Surname     | Telephone     | Client | Introducer | Show |
|----------|------------|-------------|---------------|--------|------------|------|
| ✓ 937465 | Alexina    | Haralambous | 003579990035  | Yes    | Yes        | Show |
| ✓ 750473 | Mariager   | User        | 004483274829  | No     | Yes        | Show |
| ✓ 368942 | John       | Smith       | 00448372847   | No     | No         | Show |
| ✓ 378487 | Helen      | Johns       | 003579854698  | No     | Yes        | Show |
| ✓ 323456 | Chris      | McDonald    | 075684241     | Yes    | Yes        | Show |
| ✓ 832827 | Maria      | Amvrosiou   | 0749328939    | Yes    | No         | Show |
| ✓ 293847 | Lorenzo    | Betto       | 0783924747    | Yes    | No         | Show |
| ✓ 632541 | Andrew     | Jobs        | 0035799874512 | Yes    | No         | Show |
| ✓ 832726 | Hargaret   | Hickth      | 0754852354    | No     | No         | Show |
| ✓ 289456 | Alex       | Shevland    | 0764123987    | Yes    | No         | Show |
| ✓ 625362 | Kathrine   | Heinz       | 00751864231   | Yes    | No         | Show |
| ✓ 0      | Testing    | User        | 00352214455   | No     | No         | Show |
| ✓ 648845 | Haralambos | Haralambous | 99467189      | No     | Yes        | Show |
| ✓ 668233 | Andreas    | panaiotou   | 98444165      | Yes    | No         | Show |

(a) Choose Person

(b) Man Hours Spent Report

### 5.3.6 Profit Calculation Process

From the reports mentioned above, it can be seen that the profit of the agent on a contract is needed to be calculated quite a lot during different stages of implementation. Therefore, it would be sensible to demonstrate how these profits are calculated each time for both business categories. Two functions were created, which calculate the profit gained from each contract. This process forms the Profit Calculation Component shown earlier in the Component Diagram (figure 4.6). The earlier section (see section 2.2.2), describes how the profit for each business field is calculated. This part of the project was one of the hardest in perceiving and implementation hence the following paragraphs explain in detail the algorithms implemented to achieve these calculations.

#### General Profits Calculation

General contracts have a basic value and an annual premium (basic value + extra company fees and government allowance) which is the amount the client has to pay per year. The profit gained from each contract is the same every year of issue, always depending on the basic value of the contract; i.e. in the rare case where basic value changes then the profit changes. In the database relationships section (5.2.3) it was noted that one contract can include more than one plans. Hence, the profit of a general contract is calculated as follows:

#### (Commission Percentage of Plan 1 + CP of Plan 1 + CP of Plan N)% \* Contract Basic Value

Therefore the code loops over each plan and gets its commission percentage, before calculating the total profit by multiplying the total commission percentage found by the basic value. The profit for the current year is returned. In the appendices section D.1 , the full function of "General Contract Profit Calculation" code can be found.

#### Life Profits Calculation

Life contracts contain a basic value and an annual premium, as in general contracts. However in this case, the profit gained from each contract is different the first year issued than the rest of the years. This function, in the code, returns a dictionary of the form { 'total': amount A , 'thisYearProfit': amount B }, which contains a total profit for all years of issue and the profit of the current year. At the top of the function the number of issue years of the contract is calculated. Furthermore:

- it calculates the percentage of the first year's profit which is differently calculated from the next years. For each case of the three different types of Life Plans it calculates the percentage accordingly. Afterwards, it ensures that the percentage found is in the range defined for the particular plan.
- it calculates the total percentage of the REST of the years' profit, keeping track of the current year's profit. Again it goes through the three different types of life plans and calculates the profit accordingly.
- **Total Profit: (current year percentage \* basic value) + (remaining years \* future profits percentage)**
- **Current Year's Profit: percentage of current year found \* basic value**

In the appendices section D.2 , the full function of "Life Contract Profit Calculation" code can be found.

### 5.3.7 Contracts Renewals

As mentioned before, Life Insurances do not expire whereas General Insurances expire in a set period chosen by the customer. However, Life contracts table includes an expiration date for payments purpose (i.e. keep track of whether the contract has been paid). Every time the home page loads, a check is being done and automatically every "expired" life contract is being renewed. When considering General Insurances, a renewal tool has been implemented, which automatically shows up in the contract page when the contract is expired (figure 5.22a). This functionality provides the option to renew a contract for certain periods (figure 5.22b). This changes accordingly the expiration date in the contract page.

(a) Renewal functionality - App.E.34

(b) Renewal form - App.E.35

Figure 5.22: Renewal Tool

## 5.4 JavaScript Usage To Eliminate Template Files

During the process of implementation, templates had to be created as mentioned before. While this is the case, when I started implementing the home page, i.e. the dashboard with the notifications, I had created one separate HTML file for each notification case (Payments, Renewals, Birthdays, Leads To Contact and Calendar activities). This seemed to be time consuming but more importantly many unneeded files were created which was space consuming. Additionally, every time each notification category was clicked the page had to reload, in order to load the particular HTML file. Using Javascript function: `document.getElementById('birthdays').style.display = "none"` and `document.getElementById('birthdays').style.display = "block"` as a technique in the front end design enabled the reveal and the hide of content without reloading the page and by using only one template, the home page template [16]. This technique was also used in other pages in order to achieve something similar.

## 5.5 Deployment

At this time of the project, when the implementation was relatively over, the decision was taken to deploy the web application in a host service, in order to make it easier for the user evaluation testing phase. PythonAnywhere (<https://www.pythonanywhere.com/>) is a hosting tool, which provides users with the functionality of developing and hosting a website without any cost or server set-up. Choosing to host the web application on PythonAnywhere made the process easier as it supports Django Projects along with relative documentation. An equally important point here is that PythonAnywhere provides users with the ability of using a version control

software, such as GitHub which I was using for this project, to upload their code with ease as well as making it easy to update the version with any changes occurring after the deployment. The online web application can be accessed through <https://alexiaharal.pythonanywhere.com/>.

# **Chapter 6**

## **Testing**

When developing a product, various tests have to take place in order to ensure that the product meets its requirements, while producing the correct results without any bugs and ensuring that it is easy to be used from the users, i.e. usability is easy. The following sections outline the different techniques that were used in order to establish that this product was developed with success in all sectors mentioned.

### **6.1 Integration Testing Using Black Box Technique**

Integration testing involves testing individual units that are combined and tested as a group. It is performed to expose any faults in the interaction between the integrated units [14]. Integration testing can be done using any of Black Box Testing, White Box Testing and Gray Box Testing methods.

In White Box Testing, the internal design and implementation of the product being tested is known to the tester. It is done by coding some testing cases and choosing the inputs and the appropriate output of the task to determine whether the correct results are produced. In Black Box Testing, the internal design and implementation of the product being tested is not known to the tester. It is done using the software interface without any reference to the internal structure and it tries to ensure that the task is done as expected. The tester is aware of what the program should do but does not have the knowledge of how it is done [8]. Gray Box Testing is a combination of Black Box Testing and White Box Testing, which involves partially knowing the internal structure and at the same time testing using user interface to test particular tasks.

Leads Master Application consists of different units and functions. Companies and plans storage, contracts storage and management, leads and clients storage and management, calendar functionalities and last but not least the reports functionalities. Taking into consideration all these different components implemented together, Gray Box Testing was chosen as testing method for this product. All of these functionalities are integrated somehow in the reports where retrieval of all those data together with some calculations are performed. The most critical scenarios were collected and the application was tested on these scenarios. The tester was me, as a developer, who know the internal structure of the product and it was tested using the user interface. The following scenarios were performed by me as a user, and the outcome was compared with the expected one.

### 6.1.1 Testing Scenarios

| No | Testing Summary                                   | Prerequisites                                                                                                                                                                                                                        | Testing Procedure                                                                                                                                                                                                                                                                                                                       | Expected Result                                                                 | Actual Result                                                      | Status |
|----|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------|--------|
| 1  | Add a person                                      | <ul style="list-style-type: none"> <li>User has to be logged in</li> </ul>                                                                                                                                                           | <ul style="list-style-type: none"> <li>Click Our People.</li> <li>Click Add a Person.</li> <li>Enter Details</li> <li>Click Add</li> </ul>                                                                                                                                                                                              | See a person in Our People list                                                 | Person was included in the list                                    | Pass   |
| 2  | Edit a person                                     | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>Person has to be already in the list</li> </ul>                                                                                                             | <ul style="list-style-type: none"> <li>Click Our People.</li> <li>Search for a person.</li> <li>Click the pencil</li> <li>Edit something (i.e. dob)</li> <li>Click Save</li> </ul>                                                                                                                                                      | Profile item to be updated                                                      | Profile item was updated                                           | Pass   |
| 3  | Add a company                                     | <ul style="list-style-type: none"> <li>User has to be logged in</li> </ul>                                                                                                                                                           | <ul style="list-style-type: none"> <li>Click Companies</li> <li>Click Add Company</li> <li>Enter name</li> <li>Click Save</li> </ul>                                                                                                                                                                                                    | Company has to be visible in companies table                                    | Company added was visible in companies table                       | Pass   |
| 4  | Add/Edit a plan                                   | <ul style="list-style-type: none"> <li>User has to be logged in</li> </ul>                                                                                                                                                           | <ul style="list-style-type: none"> <li>Click Companies</li> <li>Click Add General Plan/Add Life Plan</li> <li>Enter details</li> <li>Click Save</li> </ul>                                                                                                                                                                              | Plan has to be visible in Plans table                                           | Plan was visible in Plans table                                    | Pass   |
| 5  | Insert/Edit a contract                            | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A plan should be added in the system.</li> <li>A person should be added in the system</li> </ul>          | <ul style="list-style-type: none"> <li>Click Our People</li> <li>Click Add Life Contract /Add General Contract</li> <li>Enter details</li> <li>Click Save</li> </ul>                                                                                                                                                                    | Contract has to be visible in person's profile with correct details             | Contract was visible in person's profile with the correct details. | Pass   |
| 6  | Check General contract profit (1 Plan included)   | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A plan should be added in the system.</li> <li>A person should be added in the system</li> </ul>          | <ul style="list-style-type: none"> <li>Click Our People</li> <li>Click Add General Contract</li> <li>Enter details with:             <ul style="list-style-type: none"> <li>Basic Value = 800</li> <li>Plan = Company 3 – C3 Car Plan</li> <li>Click Save</li> </ul> </li> </ul>                                                        | Profit in Sales report for this contract should be 160                          | Profit was 160 in Sales Report                                     | Pass   |
| 7  | Check General contract profit (2 Plans included)  | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>2 general plans should be added in the system.</li> <li>A person should be added in the system</li> </ul> | <ul style="list-style-type: none"> <li>Click Our People</li> <li>Click Add General Contract</li> <li>Enter details with:             <ul style="list-style-type: none"> <li>Basic Value = 800</li> <li>Plan1 = Company 1 – C1 Car Plan</li> <li>Plan2 = Company 1 - HOME BEST</li> <li>Click Save</li> </ul> </li> </ul>                | Profit in Sales report for this contract should be 304                          | Profit was 304 in Sales Report                                     | Pass   |
| 8  | Check Life contract profit, first year of issued  | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A life plan should be added in the system.</li> <li>A person should be added in the system</li> </ul>     | <ul style="list-style-type: none"> <li>Click Our People</li> <li>Click Add Life Contract</li> <li>Enter details with:             <ul style="list-style-type: none"> <li>Basic Value = 800</li> <li>Plan = C1 Life Plan</li> <li>Issuedate = 11/03/2017</li> <li>Click Save</li> </ul> </li> </ul>                                      | Profit in Sales report for this year for this contract should be 60% *800 = 480 | Profit was 480 in Sales Report                                     | Pass   |
| 9  | Check Life contract profit, second year of issued | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A life plan should be added in the system.</li> <li>A person should be added in the system</li> </ul>     | <ul style="list-style-type: none"> <li>Click Our People</li> <li>Click Add Life Contract</li> <li>Enter details with:             <ul style="list-style-type: none"> <li>Basic Value = 800</li> <li>Plan = C1 Life Plan</li> <li>Issuedate = 11/03/2015</li> <li>Client = Alexia Haralambous</li> <li>Click Save</li> </ul> </li> </ul> | Profit in Sales report for this year for this contract should be 2% * 800 = 16  | Profit was 16 in Sales Report                                      | Pass   |
| 10 | Renew a contract                                  | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A plan should be added in the system.</li> <li>A person should be added in the system</li> </ul>          | <ul style="list-style-type: none"> <li>Click Our People</li> <li>Make the previously created contract to expire on the 10/3/2017</li> <li>Go into the contract's page</li> <li>Click renew</li> <li>For 1 year, Click renew</li> </ul>                                                                                                  | Expiration date of this contract should be 11/3/2018                            | Expiration date was 11/3/2018                                      | Pass   |

|    |                                                                                                                 |                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                            |                                                     |      |
|----|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------|
| 11 | Mark a lead as a client                                                                                         | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A person – lead - should be added in the system</li> </ul>                                                                                                                                        | <ul style="list-style-type: none"> <li>Click Our People.</li> <li>Click Add a Person.</li> <li>Enter Details</li> <li>Click Add</li> <li>Click Our People</li> <li>Click Add General Contract</li> <li>Enter details with:             <ul style="list-style-type: none"> <li>Client = person entered just now</li> </ul> </li> <li>Click Save</li> </ul> | Person added should be marked as a client now (or blue coloured)                                                           | Person was marked as client                         | Pass |
| 12 | Check Iconic Profile averages                                                                                   | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A plan should be added in the system.</li> <li>People should be added in the system</li> <li>Contracts should be added in the system</li> </ul> | <ul style="list-style-type: none"> <li>Click Reports</li> <li>Click Introducer Iconic Profile</li> <li>Check the averages</li> </ul>                                                                                                                                                                                                                      | Average age, age range and gender should be the averages of the results below.                                             | Averages are correctly calculated                   | Pass |
| 13 | Add/Edit Calendar Entry                                                                                         | <ul style="list-style-type: none"> <li>User has to be logged in</li> </ul>                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Click Calendar</li> <li>Click Add Activity</li> <li>Enter Details with:             <ul style="list-style-type: none"> <li>Date = current</li> <li>Employee = signed in user</li> </ul> </li> <li>Click Save</li> </ul>                                                                                            | Activity added should be visible in calendar's current day page                                                            | Activity was visible in calendar's current day page | Pass |
| 14 | Check Payments Report. Check if future payments are for the next 5 days and if past payments are indeed passed. | <ul style="list-style-type: none"> <li>User has to be logged in</li> <li>A company should be added in the system.</li> <li>A plan should be added in the system.</li> <li>People should be added in the system</li> <li>Contracts should be added in the system</li> </ul> | <ul style="list-style-type: none"> <li>Click Reports</li> <li>Click Payments</li> </ul>                                                                                                                                                                                                                                                                   | <p>Future payments' dates should be in the range of the next 5 days.</p> <p>Past payments' dates should be past dates.</p> | Payments were correctly retrieved                   | Pass |

## 6.2 Usability Evaluation

The usability evaluation testing, ensures that deliberate users of a system can carry out the intended tasks efficiently, effectively and with satisfaction [12]. This type of software testing is done using one of the three usability evaluation methods:

1. User Based Evaluation, in which users try to use the product.
2. Expert Based Evaluation, in which usability experts try to use the product.
3. Model Based Evaluation, in which an expert employs formal methods to predict criteria of user performance.

The main purpose of this testing was to test whether the application meets its requirements, i.e. the requirements that end users have. Furthermore, the ease of use or user friendliness wanted to be tested, to ensure that this product will make users' life easier. Additionally, the next factor that was to be tested is the desire or such an idea of product in the market, i.e. whether this kind of application would be something helpful for this group users. The conclusion was made to use User Based Evaluation which is considered to be the most reliable and valid in estimations of application's usability since it interacts with real potential users who will be using the actual product [12]. This method involves giving a set of tasks to the potential users and when the testing session is over, questions are being carried out about any thoughts of the product they have used [10]. In order for my results to be accurate and trustful enough, a target user group had to be chosen that would better represent the end users. For this reason, various employees of Trust Insurance were asked to complete the set of tasks and to answer a small questionnaire afterwards.

### 6.2.1 Tasks And Questionnaire Given To End Users

The following tasks were derived from the personas and use cases developed in earlier stage during the requirements capture process (see section 3.2). These are some of the basics yet important tasks that the user had to experience in order to have a complete idea of what the application do. Please note that the application had some test data entered before given to be tested. Along with these tasks, a questionnaire was handed out to the users. The multiple choice questions below will help to come into conclusions on whether the application is efficient and effective to be used as well as if it is desirable.

| No | Task                                                                                                                                                       |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Login using username: testUser, password: testUser                                                                                                         |
| 2  | Find your contact list                                                                                                                                     |
| 3  | Add a person in your contact list                                                                                                                          |
| 4  | Check out what plans each company you work with provides                                                                                                   |
| 5  | Add a General Business Contract                                                                                                                            |
| 6  | Find out who is the most successful introducer (successful introducer is someone who introduced to you people and over 65 percent of them are now clients) |
| 7  | Check out the iconic client profile for 'C3 Car Plan' insurance plan                                                                                       |
| 8  | Check out when was the last time you met with John Smith                                                                                                   |
| 9  | Do you have outstanding payments? Check from the payments report.                                                                                          |

How long did it take you to complete the tasks? \*

Less than 5 minutes  
 Less than 10 minutes  
 More than 10 minutes  
 Other: \_\_\_\_\_

I would find the system flexible to interact with based on my needs \*

1    2    3    4    5

very unflexible                     very flexible

What did you NOT like? (you can choose more than one answers) \*

The design  
 The ease of use  
 The limitation of reports available  
 Nothing, everything was fine  
 Other: \_\_\_\_\_

Were the tasks easy to be done? \*

1    2    3    4    5

very difficult                     very easy

This app will help me become more efficient in my job \*

1    2    3    4    5

unlikely                     likely

This app will help me become more organised in my everyday life \*

1    2    3    4    5

unlikely                     likely

Learning to operate the app would be easy for me \*

1    2    3    4    5

very difficult                     very easy

What did you like? (you can choose more than 1 answers) \*

The design  
 The range of reports available  
 The idea of having everything you need in one application  
 I did not like anything  
 Other: \_\_\_\_\_

Do have any suggestions for improvement? \*

Your answer \_\_\_\_\_

Figure 6.1: Questionnaire

## 6.2.2 Results Gathered

Answered questionnaire were examined and analysed one by one taking into consideration every single user's feedback. The age of the user group was not important to be taken into account in this case since all of the users tested the product were insurance company employees, who are the potential users for this application. Every single question in the questionnaire had its purpose, in the sense of testing a particular factor of application's usability. After examining the feedback given the following graphs summarize the outcomes, which will be analysed further below.

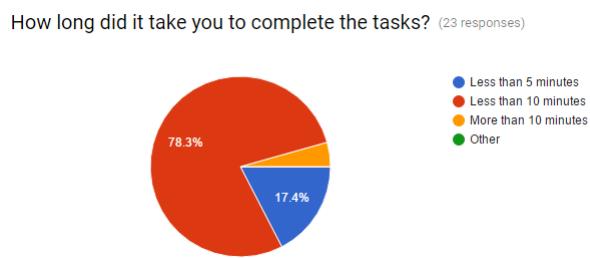
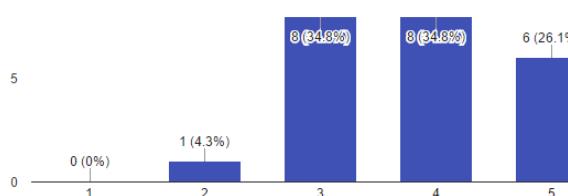


Figure 6.2: 78.3% of users completed the tasks in less than ten minutes

Figure 6.2 summarises the feedback taken from first question: *How long did it take you to complete the tasks?* It denotes that the tasks were completed in less than ten minutes from most of the users (78.3% of the users). Therefore, it can be deducted that the system is extremely fast to be used if we take into consideration the number of tasks as well as that this was users' first experience with it. Hence, it will not be time consuming for users to use this product.

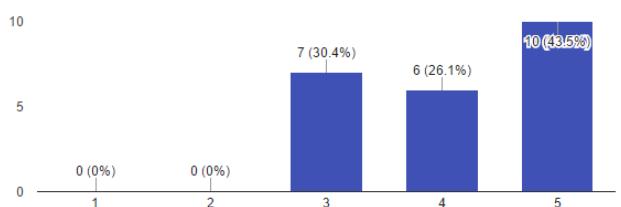
Examining the following questions, figure 6.3a summarises the feedback taken from second question: *Where the tasks easy to be done*. From range one (very difficult) to five (very easy) most of the users answers were between three and four. An average of 3.82 was this question's outcome which is not worrying since testing users were not familiar with the product, not to mention the fact that 26.1% of the users answered the "very easy" choice five. Then again, a factor to be taken into consideration is that real life users have different levels of experience with technology which makes it natural to face an extent of difficulty. Nevertheless, figure 6.3b which summarise the answers of "*Learning to operate the app would be easy for me*" question, denotes that the users were positive in the idea of the ease of learning this app. The average of 4.13 taken out from this question denotes that the application provides them with a user friendly interface which they would find easy to learn. The combined outcome from these two questions prove that the system's user friendliness was achieved at a satisfactory level.

Were the tasks easy to be done? (23 responses)



(a) Q2: Average 3.82 ease of use

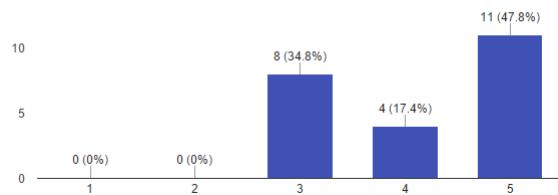
Learning to operate the app would be easy for me (23 responses)



(b) Q5: Average 4.13 ease of learning to use this app

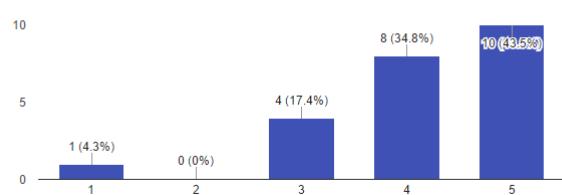
Figure 6.3: Ease of use of the application

This app will help me become more efficient in my job (23 responses)



(a) Q3: Average 4.13 of becoming more efficient

This app will help me become more organised in my everyday life (23 responses)



(b) Q4: Average 4.13 of becoming more organised

Figure 6.4: Usefulness in users' everyday life

The next determinant that wanted to be tested was the usefulness or assistance that this application would offer to end users' everyday life and hence, whether they would find interesting such an idea of application in the market. Accordingly, question three (*This app will help me become more efficient in my job*) and four (*This app will help me become more organised in my everyday life*) aimed to answer this aspect. Using the data from figure 6.4 it is clear that the idea of the application is liked tremendously. The average taken out from both questions of 4.13 in a range of 1(unlikely) and 5(likely) signifies that this application would very likely help an insurance agent become more efficient in his job and more organised in his everyday life. This is a major outcome of the process of testing this application as it indicates that this product would indeed be of interest in real life and it is something that users undeniably would like to use.

I would find the system flexible to interact with based on my needs (23 responses)

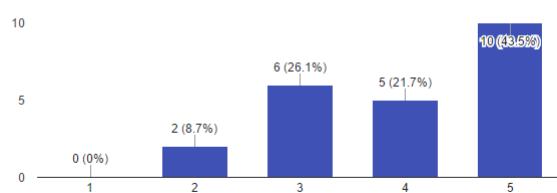


Figure 6.5: Flexible to interact with users' needs

Equally important was to test whether users find the system flexible to interact with based on their needs, which comes as an addition to the determinant tested above, i.e. Usefulness in users' everyday life. The outcome of this question is a further vital prove of this factor. Almost half of the testing users (43.5%) believe that the system is flexible to interact with based on their needs (figure 6.5).

What did you like? (you can choose more than 1 answers) (23 responses)

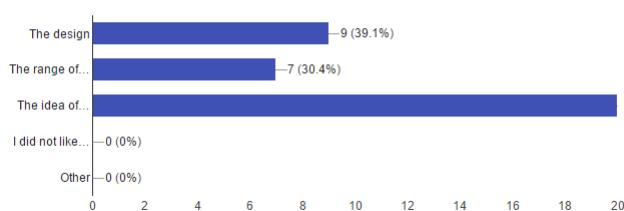


Figure 6.6: Users liked the idea of having everything they need in one application

Another essential point that was tested during this usability testing was what users liked most in the application. A group of users (39.1%) liked the design of the application, whereas a second group of users (30.4%) liked the range of reports available in the system (figure 6.6). Users had the option to select more than one answers in this question. While this is the case, one of the main goals of this project, which is to combine various services that insurance agents use in one application, was achieved and proved successful when getting an 87% of users that liked this idea.

## Features Not Liked And Additional Features Suggested

Subsequently, while being fair with the testing users, a question of what they did not like was asked. After examining the answers of this question (figure 6.7) perhaps the design and the ease of use could be improved as there were some users who did not like the design (8.7%) and some others who did not like the ease of use (13%). There was also a user which suggested to provide a navigation map and another user which desired explanatory notes. Moreover, a 13% of users did not like the limitation of reports available, which can be considered a good thing as they liked everything in this idea but they would like some more reports. Nevertheless, a fair percentage of users liked everything in the system. Considering these outcomes, it can be concluded that the application could be further improved in the factors mentioned in order to satisfy a larger group of users.

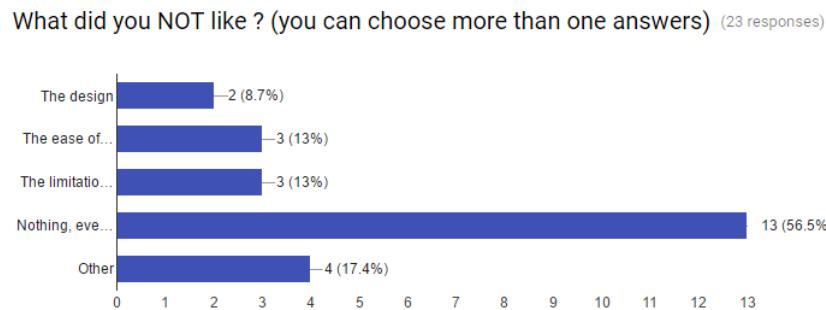


Figure 6.7: What users did not like

Furthermore, users had the chance to suggest ideas of improvement of the application. Those users who answered this question suggested the ideas below (figure 6.8). There were a number of users who suggested more reports and help tools. As a developer, I took these suggestions into consideration and after the testing session was complete I have implemented some of these suggestions. Specifically, I added the option to include meeting minutes for every calendar entry. Moreover, I went over every label and made it as much as possible more user-friendly. Finally, a Quick Start Guide for users has been created which can be found in the Appendices Section ??.

| No | Suggestion                                                                             |
|----|----------------------------------------------------------------------------------------|
| 1  | Add meeting minutes to calendar                                                        |
| 2  | Add the ability to text leads                                                          |
| 3  | Help tools                                                                             |
| 4  | Labels should be more user-friendly maybe include mouse-roll over screen tips and help |
| 5  | More reports                                                                           |
| 6  | Reports for each client in order to proceed with cross selling                         |

Figure 6.8: User suggestions for improvement

# Chapter 7

## Conclusion

### 7.1 Summary

The objective of this project was to figure out the needs of an insurance agent as well as design and develop a web application that would meet those needs. A set of requirements was set in an earlier stage (chapter 3.3.1) and after integration testing in addition with the usability testing, as a developer it is safe to say that the product meets all of its Must Have, Should Have and Could Have functional requirements. User feedback during usability testing was very positive and satisfying while exposing further possible improvements. Moreover, during usability testing most of the aims of the project outlined in section 1.1 were proved successful and interesting, while the most important being to have all needs of an insurance agent in an All-in-one application.

### 7.2 Further Possible Improvements

The idea of this project was proven to be very interesting in the target user group and I would feel very confident that if the application was further improved in some particular aspects, it would be of a great success in the market. It has a strong business logic behind and it covers most of the needs of an insurance agent. Particularly, the following improvements would make the product more desirable in real life's market:

#### 1. More reports:

- Cross-selling reports: A sales report for each customer to compare different aspects of their contracts.
- Improvement/Deterioration report: A report which will list sales done during different periods and how the agent improved or got worse during these periods.
- Employees reports - Labor cost report: A report which will list the detailed hours that an employee worked, wages earned and benefits accrued by the company. Working hours could be deducted by the meeting records done by each employee.
- Employees reports - List appointments: That were arranged by each employee to deduct whether an employee has the ability to introduce new sales opportunities to the agent.
- Many more reports that would make the agent's work

#### 2. Produce downloadable PDF version of reports.

- The reports are currently shown on screen with the ability to print them using the browser's print functionality. However this is not user friendly. PDF version of reports would be a very useful

functionality to be provided to the users as it would allow them to print or download reports to compare as days pass.

### 3. Pop-up notifications of calendar events

- An additional possible improvement would be to create pop-up notifications for calendar events. For example, a pop up notification could be shown as a reminder half an hour before the event.

## 7.3 Reflection

To review, the implementation of this web application was somehow challenging for me as a designer and as a developer but it also contributed in learning some great aspects of project management and software development. It was made clear that in order to develop a software product, a great knowledge of the area of business related to the product has to be gained. A designer of such products should feel very comfortable with the policies of the companies as well as knowing every procedure of each designed element. Another essential point that I have learnt during this individual project, is that managing and developing a project involves a lot of organisation and scheduling in order to achieve the desirable result in the limited time given. Overall, after the implementation of this application I now feel that I have a deeper understanding of the process of designing and developing a software application.

# **Appendices**

## Appendix A

# Instructions For The Project

This appendix chapter includes instructions to run the project in development mode as well as a Quick Start Guide for users who want to operate the application assuming it is installed on their machine.

### A.1 README Instructions To Run The Project

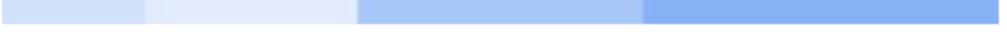
```
-----
The project is being hosted in the following URL:  
    https://alexiaharal.pythonanywhere.com/  
  
-----  
To run the project:  
*****  
Create a virtual environment by running the following commands:  
  
    1) cd ..  
    2) pip install virtualenv  
    2) virtualenv ENV  
    3) cd ENV/Scripts  
    4) activate  
    5) cd ../../LeadsMaster  
  
*****  
Install Requirements:  
  
    pip install --upgrade -r requirements.txt  
  
*****  
Run local server:  
  
    python manage.py runserver  
  
*****  
Go to 127.0.0.1:8000 to visit the application
```

## A.2 Leads Master Quick Start Guide

Leads Master Quick Start Guide

15.03.2017

Alexia Haralambous  
University Of Glasgow  
Computing Science Department

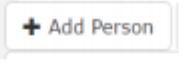


## Overview

This is a quick start guide for using Leads Master. In order to use the system for the first time, the following must be of your knowledge:

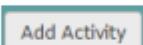
- Company Names
- Company Plans
  - Commission percentage/s
  - Duration (If applicable)
  - Age Limit (If applicable)
- Contacts (Leads and Clients)
  - Any details of your contacts
- Contracts Details

## Start-Up

1. REGISTER AN ADMINISTRATOR AND LOGIN
  - a. Click [Register](#)
  - b. Enter details
  - c. Click [Register](#)
  - d. Click [Login](#), enter details and click [Login](#)
2. INSERT A COMPANY
  - a. Now you should be logged in the system. Click [Companies](#) from the navigation bar on the left side of the page to enter a company you work with.  
  
b. Click [+ Add Company](#)  
c. Enter company name and click [Save](#)
3. INSERT INSURANCE PLAN
  - a. Click [Companies](#) from the navigation bar on the left side of the page.  
  
b. Click [+ Add General Plan](#) or [+ Add Life Plan](#) accordingly.  
c. Enter details and click [Save](#)
4. INSERT A PERSON
  - a. Click [Our People](#) from the navigation bar on the left side of the page.  
  
b. Click [+ Add Person](#)  
c. Enter details and click [Save](#)
5. INSERT A CONTRACT
  - a. Click [Our People](#) from the navigation bar on the left side of the page  
  
b. Click [+ Add GENERAL Contract](#) or [+ Add LIFE Contract](#) accordingly.  
c. Enter details and click [Save](#).
6. REGISTER AN EMPLOYEE
  - a. Click [Register a user:](#)  from the Top Navigation Bar  
b. Enter details and click [Register](#).

## Other Usual Procedures

- **ENTER A CALENDAR ACTIVITY**

- Click Calendar from the navigation bar on the left side of the page.
- Click 
- Enter details and click **Save**.

- **EDIT A CALENDAR ACTIVITY**

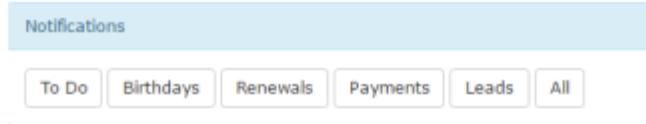
- Find the activity from the corresponding day in the calendar.

12:30 p.m.  
30 min  
Sample Meeting  
With: Andrew Jobs  
Meeting Minutes: .

- Click on the name of the activity
- Edit details and click **Save**.

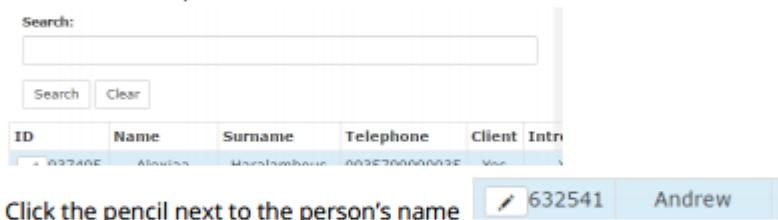
- **VIEW RENEWALS/PAYMENTS/BIRTHDAYS/ACTIVITIES OF THE DAY**

- Click Home from the navigation bar on the left side of the page.
- Click accordingly the option you want to check out from :



- **SEARCH FOR A PERSON TO FIND THEIR CONTRACTS**

- Click Our People from the navigation bar on the left side of the page.
- Enter either the person's ID, Name or Surname into the search bar:



A screenshot of a search interface. At the top is a search bar with the placeholder 'Search:' and two buttons: 'Search' and 'Clear'. Below the search bar is a table with columns: ID, Name, Surname, Telephone, Client, and Intro. The first row of the table shows data for a person with ID 632541, Name Andrew, and Surname Jobs. There is a pencil icon next to the ID field, indicating it is editable.

| ID     | Name   | Surname | Telephone    | Client | Intro |
|--------|--------|---------|--------------|--------|-------|
| 632541 | Andrew | Jobs    | 003230000002 | Yes    |       |

- Click the pencil next to the person's name

- SEE INTRODUCER ICONIC PROFILE
  - Click Reports from the navigation bar on the left side of the page.
  - Click  under the Iconic Profiles category.
  - The top results are an average result of the two lists below: Introducers with successful leads over 65% and 20 best introducers based on profit gained from them.
  
- SEE CLIENT ICONIC PROFILE
  - Click Reports from the navigation bar on the left side of the page.
  - Click  under the Iconic Profiles category.
  - The top results are an average result of the list below which lists clients in a descending order based on the profit gained from them and ascending based on the hours spent on them.
  - Choose ONE Plan to see results for particular plan from either  
Select Life Plan:  
  
or  
Select General Plan:
  - Click
  
- VIEW SALES/PROFITS REPORT
  - Click Reports from the navigation bar on the left side of the page.
  - Click  under the Portofolio Reports category.
  - Results shown are Sales and Profits for current month.
  - To see different results for particular period and/or plan choose accordingly.
  - To see only Sales results or only Profits results click accordingly:  
 Sales    Profits

- **VIEW PAYMENTS REPORT**
  - Click Reports from the navigation bar on the left side of the page.
  - Click  under the Portofolio Reports category.
  - Choose  Upcoming Payments to see the payments that will be due the next 5 days.
  - Choose  To Be Paid to see the payments that were due in the past.
  
- **VIEW INTRODUCERS REPORT**
  - Click Reports from the navigation bar on the left side of the page.
  - Click  under the Leads Reports category.
  - People in Blue Color are Introducers who are clients whereas people in Red Color are Introducers who are not clients.
  - Click  to see detailed report of leads given from each.
  
- **VIEW MAN HOURS SPENT WITH A PERSON**
  - Click Reports from the navigation bar on the left side of the page.
  - Click  under the Leads Reports category.
  - Click  to see detailed report of the activities recorded with each person.

## Appendix B

### Consent Form

This is the consent form provided from Mr. Haralambous.



15.03.2017

To whom it may concern

I, Haralambous Haralambous, Business Development Manager in Trust International Insurance Company (Cyprus) Ltd, provide my consent to Alexia Haralambous to use the following as part of the Leads Master System Project during her fourth year at the University of Glasgow.

- Consent to use company's name.
- Consent to use provided documents.
- Consent to discuss company's policies regarding insurance plans and profits.

Yours sincerely,

Haralambous Haralambous  
Business Development Manager

MEMBER OF TRUST GROUP [www.trustgroup.net](http://www.trustgroup.net)

## **Appendix C**

# **SQL Queries**

This appendix chapter lists any trial queries that were created when testing the database in MySQL Workbench.

Each time, the use case is described before defining the SQL query.

Note: Queries start from next page in order to be visible enough.

1. Use case: Insert a lead in Person table, who was introduced by an introducer with ID : LEAD\_FROM\_ID

=> Insert Lead in Person Table

```
INSERT INTO Person (idPerson, Name, Surname, Telephone, Email, DateOfBirth,  
IsIntroducer, IsClient, LeadFrom)  
VALUES (937495, "Alexia", "Haralambous", 99990035,  
"alexiaharalambous@gmail.com", "1995-02-08 ", 0 , 0 , LEAD_FROM_ID)
```

=> Make the IsIntroducer field of the "LeadFrom" person set to True if it is False

```
UPDATE person  
SET IsIntroducer = CASE  
    WHEN IsIntroducer = 0 THEN 1  
    END  
WHERE person.idPerson = LEAD_FROM_ID
```

2. Use case: Search for a person using different search options

```
SELECT idPerson, Name, Surname, DateOfBirth  
FROM Person  
WHERE Name = "SearchedName"
```

3. Use case: Show General contracts of a person

```
SELECT p.idPerson, p.Name, p.Surname, p.DateOfBirth, gp.Name, gp.name  
FROM Person as p, company, contract, generalbusinessplans as gp  
INNER JOIN generalcontractaggregate as agr  
    ON gp.planID = agr.planIDAggr  
INNER JOIN contract as co  
    ON co.idcontract = agr.genContractIDAggr  
WHERE p.Name = "SearchedName"  
AND contract.type = "general"
```

4. Use case: Find people who have birthday current day

```
SELECT Name, Surname, Email  
FROM person  
WHERE month(curdate()) = month(DateOfBirth)  
AND extract(DAY FROM curdate()) = extract( DAY FROM DateOfBirth)
```

**5. Use case: Show 10 random people entries who are not clients (i.e. leads)**

```
SELECT Name, Surname, Telephone  
FROM person  
WHERE IsClient = 0  
ORDER BY RAND()  
LIMIT 10
```

**6. Use case: Show renewals that are due current day**

**General Contracts' renewals:**

```
SELECT p.idPerson, p.Name, p.Surname, gp.Name  
FROM Person as p, company, contract, generalbusinessplans as gp  
INNER JOIN generalcontractaggregate as agr  
    ON gp.planID = agr.planIDaggr  
INNER JOIN contract as co  
    ON co.idcontract = agr.genContractIDaggr  
WHERE contract.type = "general"  
AND curdate() = contract.expirationDate
```

**Life Contracts' renewals:**

```
SELECT p.idPerson, p.Name, p.Surname, lp.Name  
FROM Person as p, company, contract, lifebusinessplans as lp  
INNER JOIN lifecontractaggregate as agr  
    ON lp.planLifeID = agr.planIDaggr  
INNER JOIN contract as co  
    ON co.idcontract = agr.lifeContractIDaggr  
WHERE contract.type = "life"  
AND curdate() = contract.expirationDate
```

---

**7. Use case: Payments that are due current day or due in the following 5 days**

=>5 days before

```
SELECT p.idPerson, p.Name, p.Surname, p.email, lp.Name
FROM Person as p, contract, lifebusinessplans as lp
INNER JOIN lifecontractaggregate as agr
    ON lp.planLifeID = agr.planIDaggr
INNER JOIN contract as co
    ON co.idcontract = agr.lifeContractIDaggr
WHERE contract.type = "life"
AND datediff(curdate(),contract.expirationDate) =5
```

=>Day of payment

```
SELECT p.idPerson, p.Name, p.Surname, p.email, lp.Name
FROM Person as p, contract, lifebusinessplans as lp
INNER JOIN lifecontractaggregate as agr
    ON lp.planLifeID = agr.planIDaggr
INNER JOIN contract as co
    ON co.idcontract = agr.lifeContractIDaggr
WHERE contract.type = "life"
AND curdate()=contract.expirationDate
```

**8. Use case: Show activity history with a person and a total number of hours spent with the person**

=>This query creates a list that shows all activity with person wanted to.  
Variations could include: By month, By year, By period.

```
SELECT p.name, a.activityName, a.duration
FROM person as p, activity as a
WHERE p.idPerson=a.customerID
AND p.name = "Alexia"
GROUP BY p.name
```

=>The next query sums up the hours spent in total for this person

```
SELECT p.name, SUM(a.Duration)
FROM person as p, activity as a
WHERE p.idPerson = a.CustomerID
AND p.name = "Alexia"
GROUP BY p.name
```

---

**9. Use case: Show number of successful leads given from a person**

=>a)Number of leads given by a person

```
SELECT count(idPerson)
FROM person
WHERE LeadFrom = "937495"
```

=>b)Number of successful leads given by a person

```
SELECT count(idPerson)
FROM person
WHERE LeadFrom = "937495"
AND IsClient = 1
```

**10. Use case: Show an iconic introducer profitable profile**

```
=>Calculate Number of leads given from each person (u.c.9a)
=>Calculate successful number of leads from each person(u.c.9b)
=>Create a percentage of successful lead given from each person
    ( (leads-successful)/leads )*100
=>Calculate profit gained from each lead given
    IF (type=general) THEN
        MUL(annualpremium , plan.profit)
    IF (type=life) THEN
        IF issuedate.year = current year THEN
            Calcpercentage = (age_limit - customer's age)
            If calcpercentage < minperc THEN
                Calcpercentage = minperc
            If calcpercentage >maxperc THEN
                Calcpercentage = maxperc
            Profit = plan.profit *calculated percentage *annualpremium

=>List people who have 65% successful leads percentage (sort value 1)
=> List people based on profit gained from them (sort value 2)
```

# Appendix D

## Algorithms

During the project process, various complex algorithms were needed to be implemented to calculate different things in different cases.

This section, shows in detail any algorithm that was reasonable to be shown in this dissertation.

### D.1 General Contracts Profit Calculation

```
# This function calculates the profit gained from
# a given contract any year, since the profit for
# general contracts is every year the same amount.

def generalContractProfit(contract):
    profitPercentage = 0
    for plan in contract.plan.all():
        profitPercentage += plan.commission
    profit = (contract.annualpremium * profitPercentage / 100)
    return profit
```

## D.2 Life Contracts Profit Calculation

```

# This function calculates the profit gained from a
# given life contract. It returns a dictionary of the form
# {'total': amount A , 'thisYearProfit': amount B }, which
# contains the total profit gained from this contract during all
# years of issue , and the profit gained current year.

def lifeContractProfit(contract, person):
    today = datetime.now()
    yearsOfContract = relativedelta(today.date(), contract.issuedate).years
    first_year = 0
    nextyears = 0
    # get profit from all plans if more than one plan
    for plan in contract.plan.all():
        # Calculate FIRST year's profit
        # Get profit percentage of first year

        # If this contract is of type Life Plan C which contains more than one future profits
        # and makes the percentage being just the first year commission percentage
        if plan.futureprofit2 or plan.futureprofit3 or plan.futureprofit4:
            percentage = plan.firstyearcommission
        # If contract has duration, then is of type Life Plan B
        # which makes the percentage being the duration multiplied by the first year commission
        elif contract.duration:
            percentage = contract.duration * plan.firstyearcommission
        # Else if it is of type Life Plan A then the percentage is
        # the years difference of the age limit and the person's years
        # multiplied by the first year commission
        else:
            percentage = (plan.agelimit -
                           relativedelta(today.date(), person.dateofbirth).years) * plan.firstyearcommission

        # Check if in range of percentages
        if percentage < plan.minpercentage:
            percentage = plan.minpercentage
        elif percentage > plan.maxpercentage:
            percentage = plan.maxpercentage
        # Save final First Year's Commission Percentage
        first_year = percentage
    #####
    # REST OF THE YEARS profit calculation - up to now
    # If current contract is issued for more than one year
    if yearsOfContract > 0:
        # If type: Life Plan C
        if plan.futureprofit2 or plan.futureprofit3 or plan.futureprofit4:
            # If this is the second year of issue, get percentage of profit
            if yearsOfContract == 1:
                nextyears += plan.futureprofit2
                thisYearProfit = plan.futureprofit2
            # If this is the third year of issue
            elif yearsOfContract == 2:
                nextyears += plan.futureprofit3 + plan.futureprofit2
                thisYearProfit = plan.futureprofit3
            # For next years of issue
            else:
                nextyears += ((plan.futureprofit3 + plan.futureprofit2 + plan.futureprofit4) * (yearsOfContract - 2))
                thisYearProfit = plan.futureprofit4
        # Else if of type Life Plan A or Life Plan B
        else:
            nextyears += plan.futureprofit
            thisYearProfit = plan.futureprofit
    # If this is the first year of issue
    else:
        thisYearProfit = first_year

    # sum up profits from this contract
    totalProfit = (first_year * contract.annualpremium / 100) + (nextyears * yearsOfContract * contract.annualpremium / 100)
    profit = {}
    totalProfit = float("{0:.2f}".format(totalProfit))
    thisYearProfit = float("{0:.2f}".format(thisYearProfit))
    profit['total'] = totalProfit
    profit['thisYearProfit'] = thisYearProfit * contract.annualpremium / 100
    return profit

```

### D.3 Other Algorithms

```
#Gather payments for current day
generalpayments = []
for contract in GeneralContract.objects.filter(nextpayment=today.date(),cancelled=False):
    generalpayments.append(contract)
genPaymTable = genPaymentsNot.objects.all()
if genPaymTable.filter(payment=contract, date=today.date()).exists():
    flag = True
else:
    if contract.client.email:
        plans=""
        for p in contract.plan.all():
            plans+= str(p)
        text='This is a reminder that your ' +plans+ ' contract, with contract number: '+ str(contract.idcontract) +
             ' needs to be paid! Please get in touch to arrange a meeting. Thank you, Leads Master'
        print contract.client.email
        send_mail(
            'Contract Payment Reminder',
            text,
            settings.EMAIL_HOST_USER,
            [contract.client.email]
        )
        obj = genPaymentsNot(payment=contract, date=today.date(),email=True)
        obj.save()
```

Figure D.1: Email Procedure For Payments

```

if (FirstDay.getDay()==0) {
    for (var i=LastMonthDays-5; i <= LastMonthDays; i++) {
        day1 = i
        month1 = pastMonth.getMonth()+1
        year1 = pastMonth.getFullYear()
        url=<a onclick=\"generateUrl("+day1+", "+month1+", "+year1+)\\">" 
        html +=url+ "<li>" +(i)+ "</li></a>";
    }
} else{
    for (var i=LastMonthDays-FirstDay.getDay()+2; i <= LastMonthDays; i++) {
        day1=i
        month1=pastMonth.getMonth()+1
        year1=pastMonth.getFullYear()
        url=<a onclick=\"generateUrl("+day1+", "+month1+", "+year1+)\\">" 
        html +=url+ "<li>" +(i)+ "</li></a>";
    }
}
for (var i=0; i < days; i++) {
    day1=i+1
    month1=month+1
    year1=year
    currentD = new Date(year1,month1,day1)
    url=<a onclick=\"generateUrl("+day1+", "+month1+", "+year1+)\\">" 
    html +=url+ "<li><b>" +(i+1)+ "</b></li></a>";
}
for (var i=1; i <= 7-LastDay.getDay(); i++) {
    day1=i
    month1=futureMonth.getMonth()+1
    year1=futureMonth.getFullYear()
    url=<a onclick=\"generateUrl("+day1+", "+month1+", "+year1+)\\">" 
    html +=url+ "<li>" +(i)+ "</li></a>";
}

$("#daysBuilder").append(html);
};

JS_REVERSE_JS_VAR_NAME = 'Urls'
function generateUrl(day, month, year){
    location.href = "/calendar/" + day + "/" + month + "/" + year + "/"
}

```

Figure D.2: Calendar JAVASCRIPT Implementation

```
def successfulLeadsPercentage(introducer):
    numOfLeads = 0
    numOfSuccLeads = 0
    leadsFromIntroducer = Person.objects.filter(leadfrom=introducer.id)
    # Calculate
    for person in leadsFromIntroducer:
        numOfLeads += 1
        if person.isclient == 1:
            numOfSuccLeads += 1
    #Calculate successful PERCENTAGE
    # Where successful PERCENTAGE is ((leads-successfulLeads)/leads)*100
    if numOfSuccLeads>0:
        percentage=numOfSuccLeads/numOfLeads*100.0
    else:
        percentage=0
    percentage=float("{0:.2f}".format(percentage))

return percentage
```

Figure D.3: Successful Leads Percentage Function Calculation

## Appendix E

# Images

This section includes any image contained in the main content of this dissertation, using a larger scale. Note: Images start from the next page in order to be visible enough.

Figure E.1: Sales Quotation

|    | A                          | B                      | C                      | D                        | E                                      | F              | G          | H     |
|----|----------------------------|------------------------|------------------------|--------------------------|----------------------------------------|----------------|------------|-------|
| 1  | Agent Name                 |                        |                        |                          |                                        |                |            |       |
| 2  | CRM Abbreviation ENG Name  |                        |                        |                          |                                        |                |            |       |
| 3  | Branch                     | 5 - Paralimni          | Address                | CRM Abbreviation GR Name | TRUST INSURANCE                        |                |            |       |
| 4  | Broker Supervisor          | Paralimni Branch       | Mobile Telephone       |                          |                                        | Position       |            |       |
| 5  | Agreement Start Date       |                        | Work/Home Telephone    |                          |                                        | Merge with     |            |       |
| 6  | I.D. or Co Reg. Number     |                        | Fax                    |                          |                                        |                |            |       |
| 7  | Credit Period - Non Health |                        | e-mail                 |                          |                                        |                |            |       |
| 8  | Credit Period - Health     |                        | Branch e-mail:         |                          |                                        | IT USE Only    |            |       |
| 9  | Payment Terms              |                        | Number of Users:       |                          |                                        | System Codes   |            |       |
| 10 | Access Level               |                        | Number of Access Level |                          |                                        | GB Code        |            |       |
| 11 |                            |                        |                        |                          |                                        | Office Code    |            |       |
| 12 | Code                       | Class Name             | Abbrv.                 | Abbrv.                   | Code                                   | Sub Class Name | Commission |       |
| 13 | A                          | Miscellaneous Accident | GAC                    |                          |                                        |                |            |       |
| 14 |                            |                        |                        | A01                      | Personal Accident                      |                |            |       |
| 15 |                            |                        |                        | A02                      | Fidelity Guarantee                     |                | PA         | 20.0% |
| 16 |                            |                        |                        | A03                      | Money (Cash)                           |                | FQ         | 15.0% |
| 17 |                            |                        |                        | A04                      | Banker Blanket                         |                | MO         | 15.0% |
| 18 |                            |                        |                        | A05                      | Theft                                  |                | BB         | 15.0% |
| 19 |                            |                        |                        | A06                      | Personal Effect                        |                | BU         | 25.0% |
| 20 |                            |                        |                        | A07                      | Plate Glass                            |                | PE         | 0.0%  |
| 21 |                            |                        |                        | A09                      | Travel Accidents                       |                | PG         | 15.0% |
| 22 | B                          | General Accidents      | GAC                    |                          |                                        |                | TA         | 20.0% |
| 23 |                            |                        |                        | B01                      | Employer's Liability                   |                | EL         | 17.0% |
| 24 |                            |                        |                        | B02                      | Public Liability                       |                | PL         | 17.0% |
| 25 |                            |                        |                        | B03                      | Professional Indemnity                 |                | PI         | 17.0% |
| 26 |                            |                        |                        | B04                      | Product Liability                      |                | PL         | 17.0% |
| 27 | C                          | Engineering            | ENG                    |                          |                                        |                |            |       |
| 28 |                            |                        |                        | C01                      | Contractor All Risks                   |                | CAR        | 16.0% |
| 29 |                            |                        |                        | C02                      | Erection All Risks                     |                | EAR        | 16.0% |
| 30 |                            |                        |                        | C03                      | Machinery Breakdown                    |                | MB         | 16.0% |
| 31 |                            |                        |                        | C04                      | Boiler Explosion                       |                | BE         | 16.0% |
| 32 |                            |                        |                        | C05                      | Electrical Breakdown                   |                | EB         | 16.0% |
| 33 |                            |                        |                        | C06                      | Electronic Equipment                   |                | EE         | 16.0% |
| 34 |                            |                        |                        | C07                      | Contractor Plant And Equipment         |                | CPE        | 16.0% |
| 35 |                            |                        |                        | C08                      | Deterioration Of Stock                 |                | DOS        | 16.0% |
| 36 | F                          | Fire                   | FIR                    |                          |                                        |                |            |       |
| 37 |                            |                        |                        | F01                      | Fire Non-Business                      |                | FI         | 25.0% |
| 38 |                            |                        |                        |                          |                                        |                |            | 9.0%  |
| 39 |                            |                        |                        | F02                      | Householder's Comprehensive Earthquake |                | HC         | 25.0% |
| 40 |                            |                        |                        | F03                      | Globe                                  |                | GL         | 25.0% |
| 41 |                            |                        |                        | F04                      | Globe Earthquake                       |                | TS         | 0.0%  |
| 42 |                            |                        |                        |                          |                                        |                |            |       |
| 43 |                            |                        |                        |                          |                                        |                |            |       |
| 44 |                            |                        |                        |                          |                                        |                |            |       |
| 45 |                            |                        |                        |                          |                                        |                |            |       |
| 46 |                            |                        |                        |                          |                                        |                |            |       |
| 47 |                            |                        |                        |                          |                                        |                |            |       |
| 48 |                            |                        |                        |                          |                                        |                |            |       |

Figure E.2: Sales Quotation

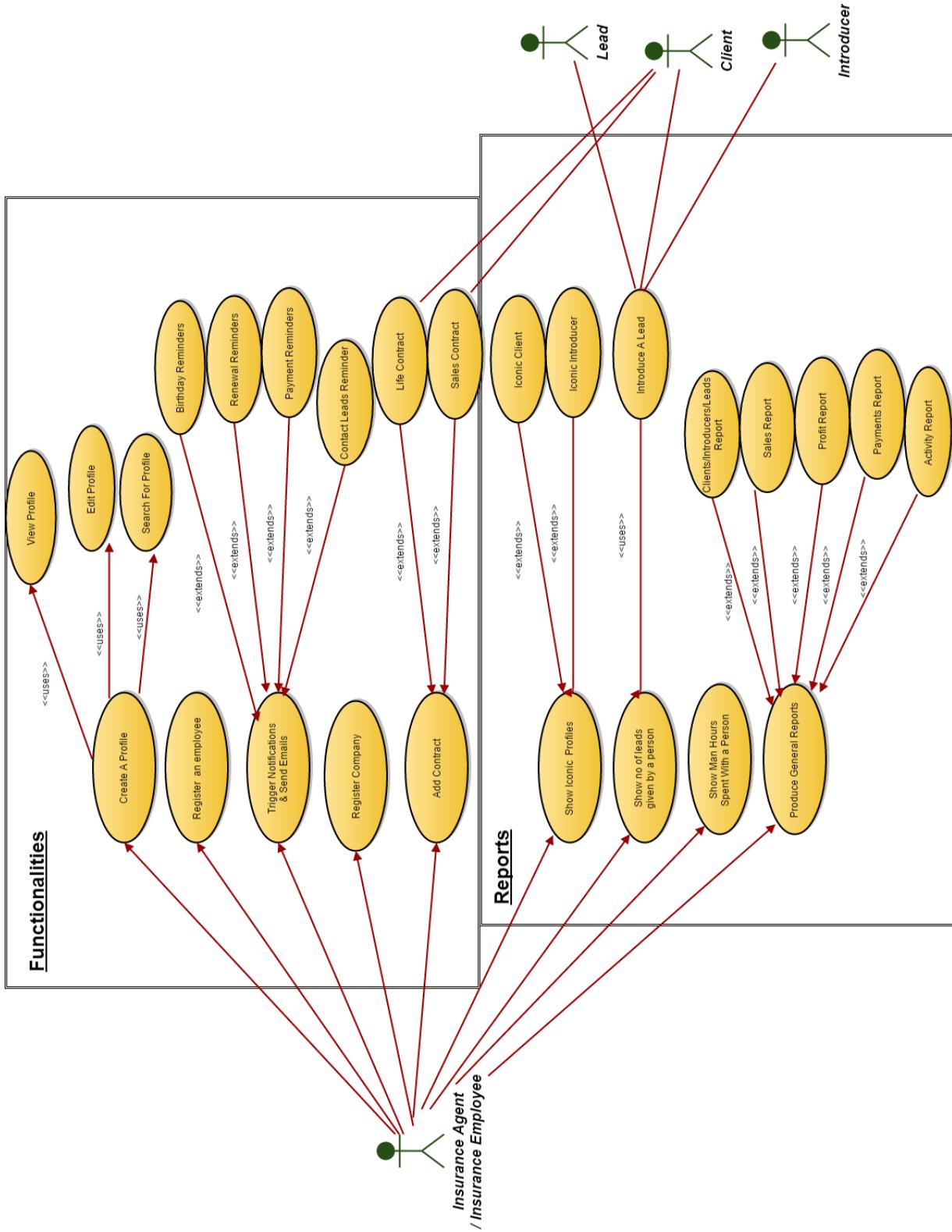


Figure E.3: Use Case Diagram

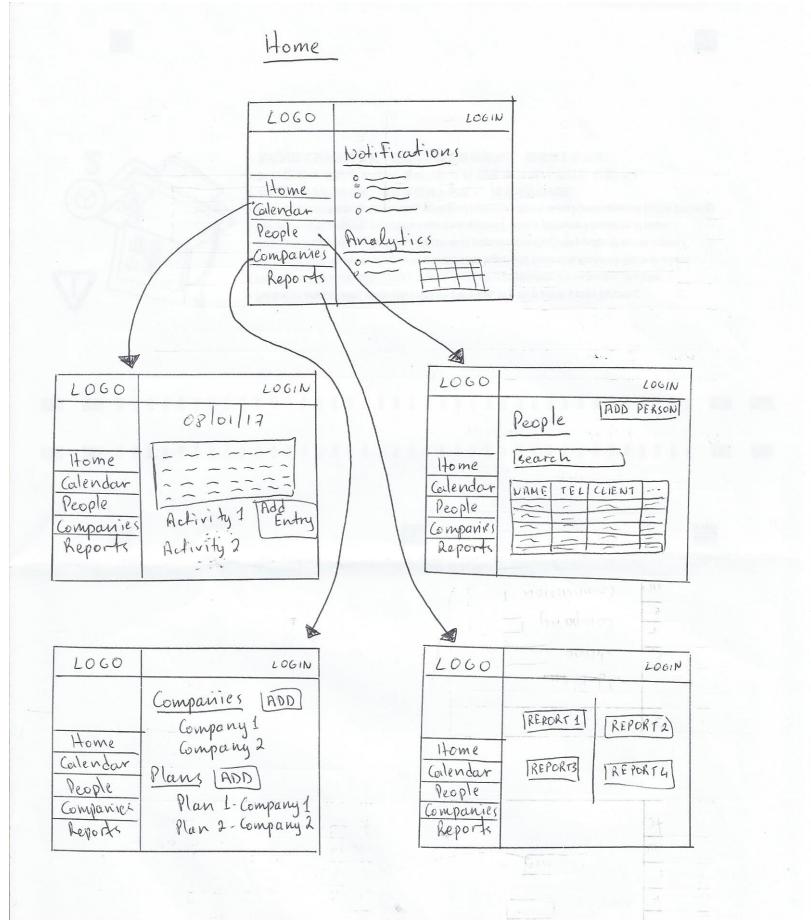


Figure E.4: Home Page Low-Fidelity Prototype

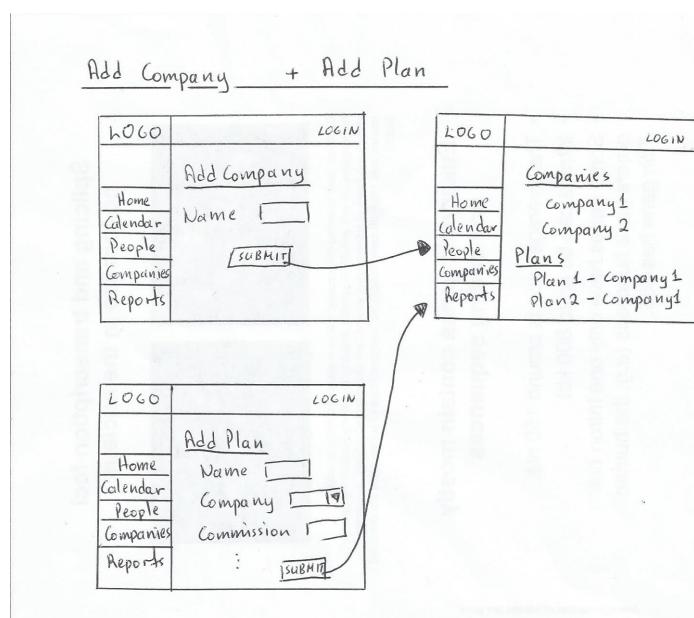


Figure E.5: Add Company/Add Plan Low-Fidelity Prototype

Add Person

|                                                    |                                                                                                                                                                                                |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOGO                                               | LOGIN                                                                                                                                                                                          |
| Home<br>Calendar<br>People<br>Companies<br>Reports | Add Person<br>Name <input type="text"/><br>Telephone <input type="text"/><br>Is Client? <input type="checkbox"/><br>Is head? <input type="checkbox"/><br><input type="button" value="SUBMIT"/> |

| LOGO                                               | LOGIN                                                                                                                                                                                                                                                                                                                                                                                                        |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Home<br>Calendar<br>People<br>Companies<br>Reports | People<br>Search <input type="text"/><br><table border="1"> <thead> <tr> <th>NAME</th> <th>TEL</th> <th>CLIENT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | NAME   | TEL | CLIENT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NAME                                               | TEL                                                                                                                                                                                                                                                                                                                                                                                                          | CLIENT |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |        |     |        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Figure E.6: Add Person Low-Fidelity Prototype

Add Contract

|                                                    |                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOGO                                               | LOGIN                                                                                                                                                                                                                                                                                                            |
| Home<br>Calendar<br>People<br>Companies<br>Reports | Add Contract<br>Plan <input type="text"/> <input checked="" type="checkbox"/><br>Client <input type="text"/> <input checked="" type="checkbox"/><br>Issue Date <input type="text"/> <input type="checkbox"/><br>Exp. Date <input type="text"/> <input type="checkbox"/><br><input type="button" value="SUBMIT"/> |

|                                                    |                                              |
|----------------------------------------------------|----------------------------------------------|
| LOGO                                               | LOGIN                                        |
| Home<br>Calendar<br>People<br>Companies<br>Reports | Person A<br>Details :<br><br>Contracts :<br> |

Figure E.7: Add Contract Low-Fidelity Prototype

Add Calendar Entry

|                                                  |                                                                                                                              |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| LOGO                                             | LOGIN                                                                                                                        |
| Home<br>Calendar<br>People<br>Reports<br>Reports | 08/01/17<br><br>Add Entry<br>Date <input type="text"/><br>Time <input type="text"/><br><input type="button" value="SUBMIT"/> |

Figure E.8: Add Calendar Entry Low-Fidelity Prototype

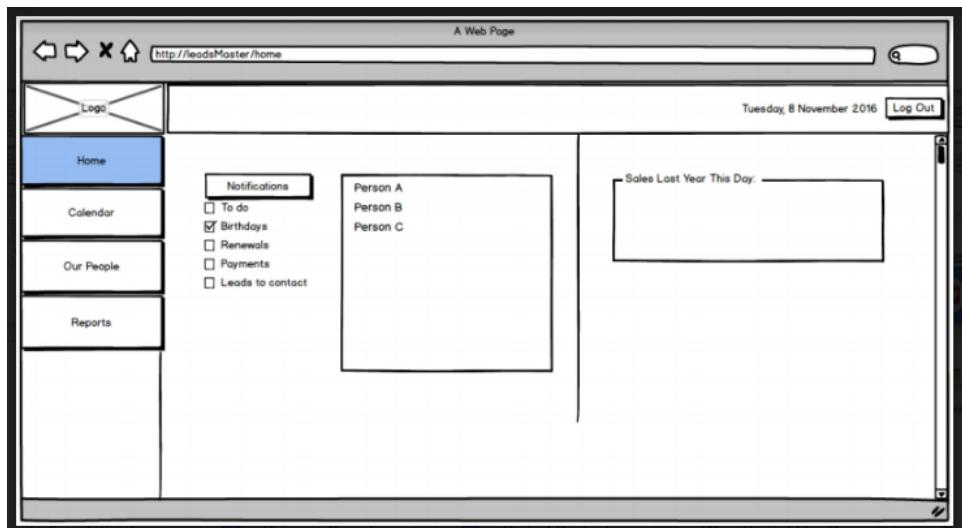


Figure E.9: Home Balsamic Prototype

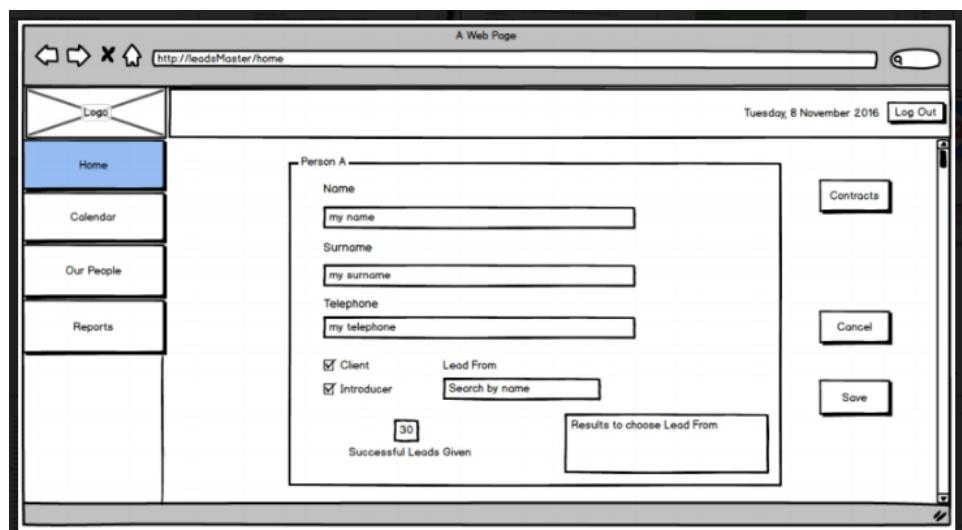


Figure E.10: Person's Profile Balsamic Prototype

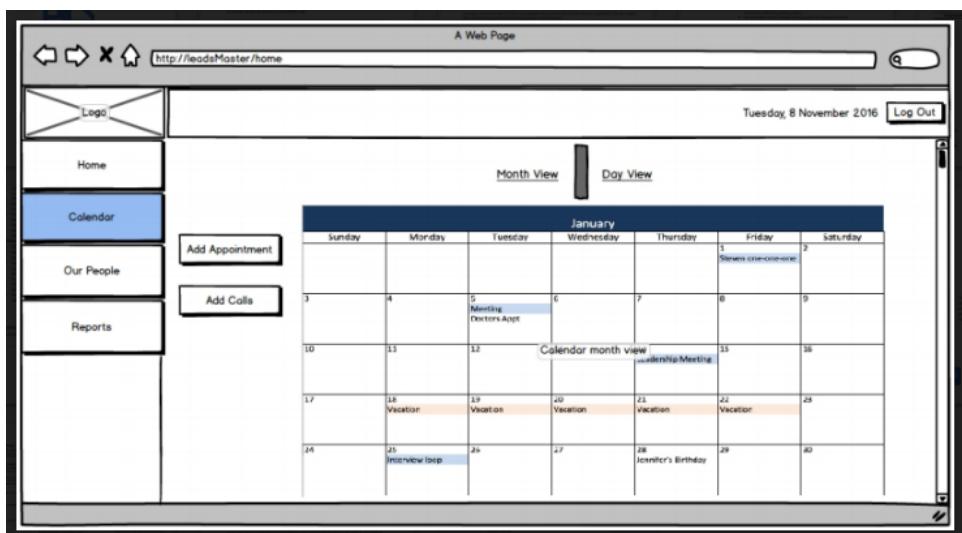


Figure E.11: Calendar Balsamic Prototype

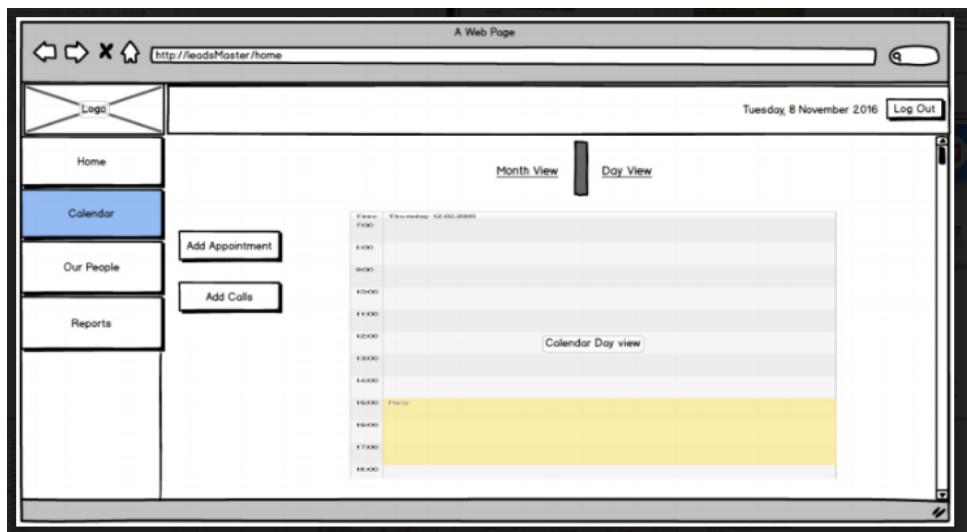


Figure E.12: Calendar Entries Balsamic Prototype

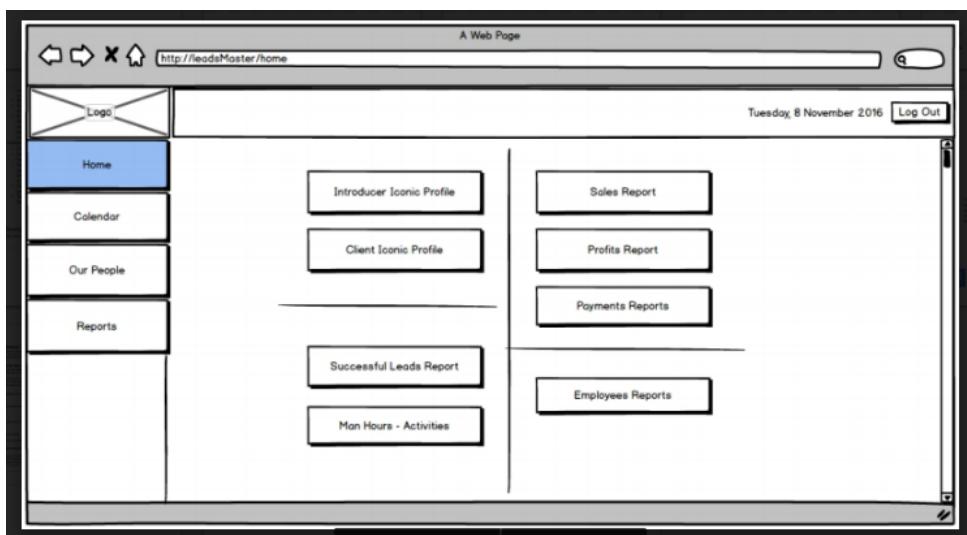


Figure E.13: Reports Balsamic Prototype

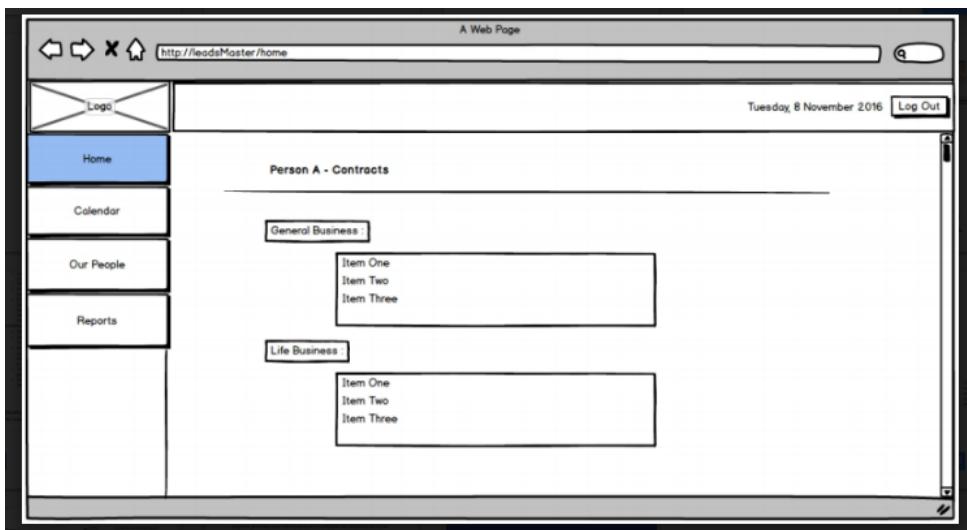


Figure E.14: Person's Contracts Balsamic Prototype

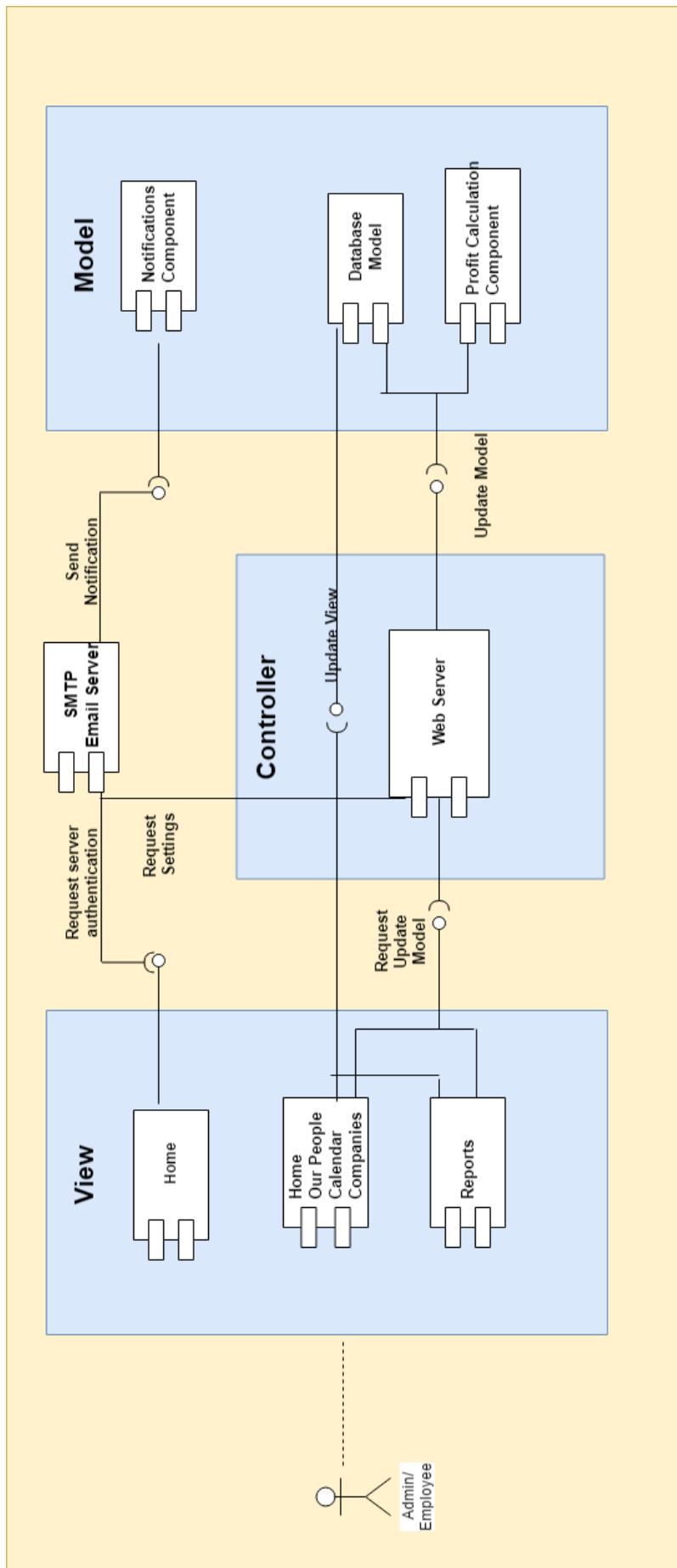


Figure E.15: System Component Diagram

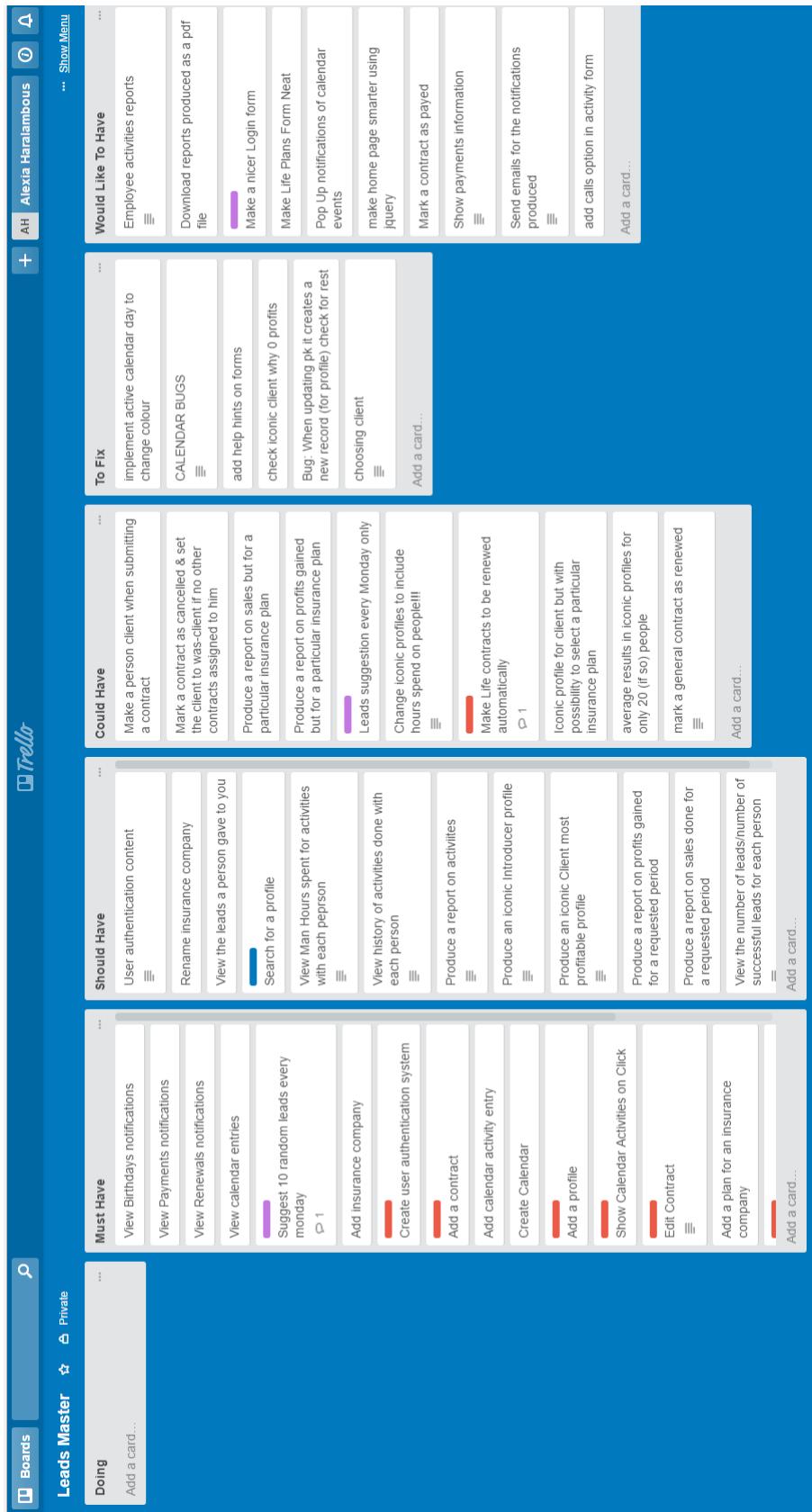


Figure E.16: Trello Tasks In The Beginning

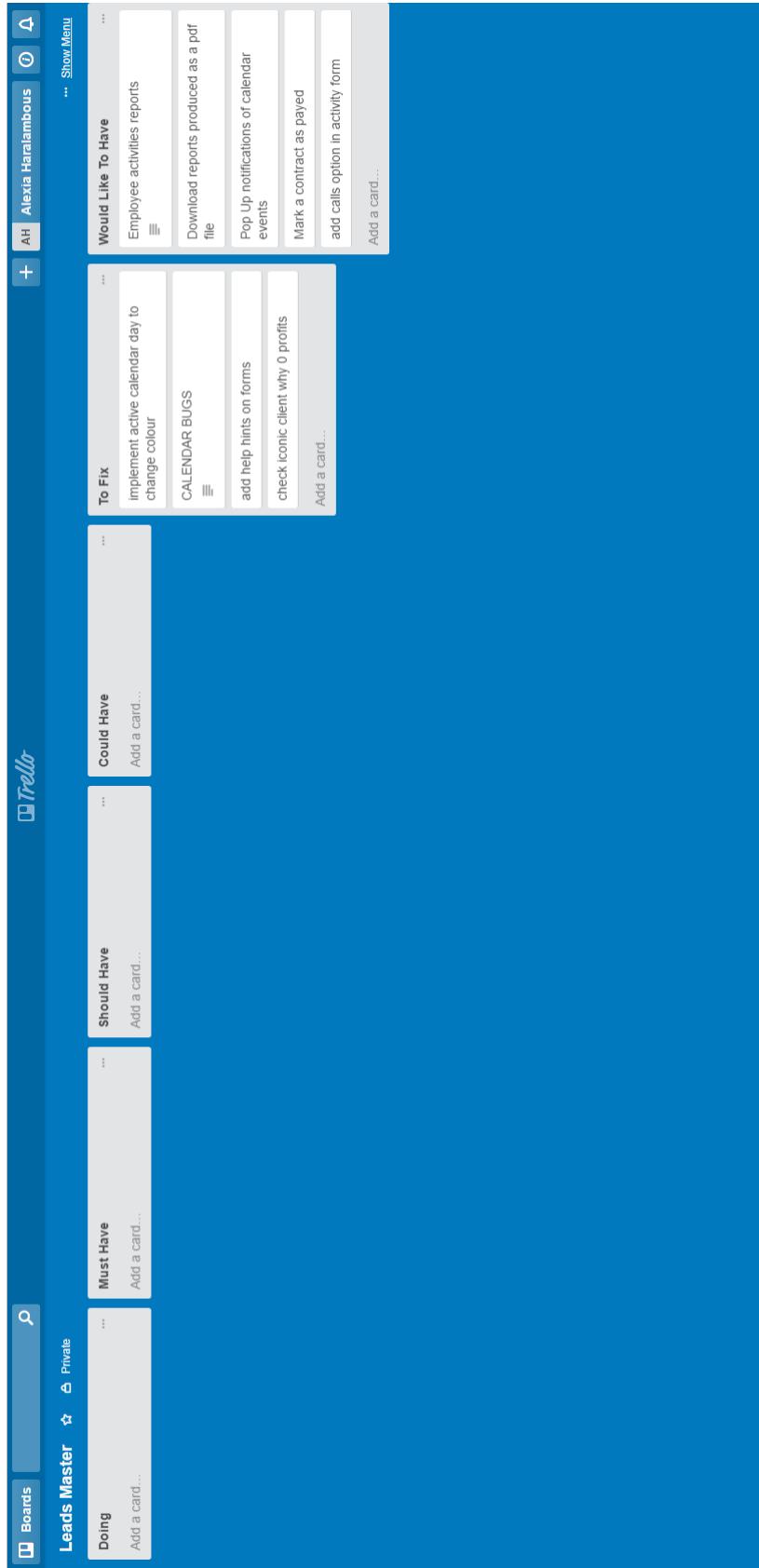


Figure E.17: Trello Tasks In The End

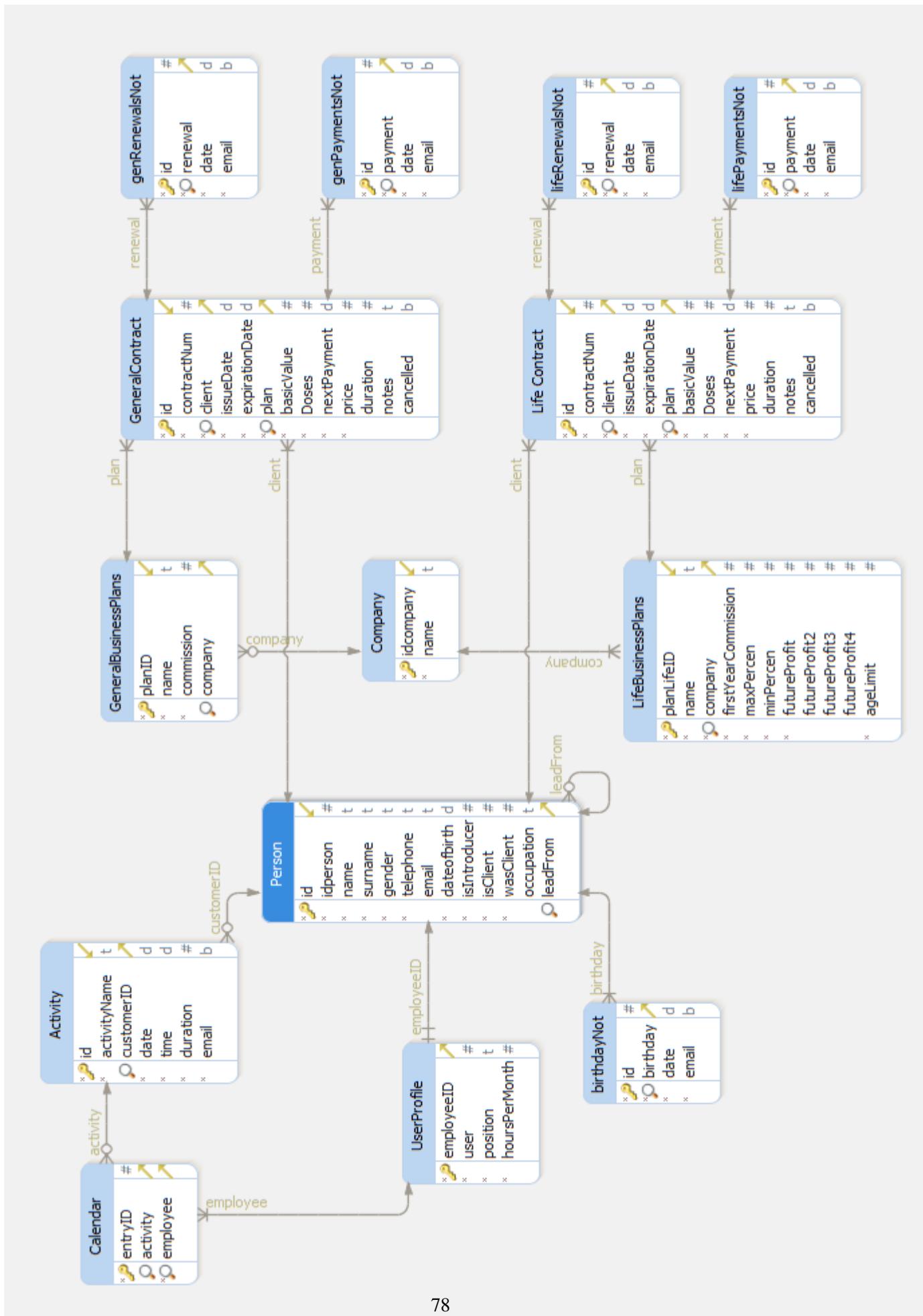


Figure E.18: System's Database Schema

alexiah's Dashboard

Welcome back!

Show Previous Sales Hide Previous Sales

Notifications

To Do Birthdays Renewals Payments Leads All

To Do

- => First meeting with Alex Shevland

General Renewals

| Number | Name    | Surname     | Plan       |
|--------|---------|-------------|------------|
| 30     | Alexiaa | Haralambous | C3 Medical |

Leads To Contact

- 988942 , John Smith
- 648845 , Haralambos Haralambous
- 1234567 , Andreas Gregorius
- 0 , Testing User
- 832726 , Margaret McKith
- 758473 , Manager User
- 823972 , Harry Theodorou
- 782323 , Ero Theodoulou
- 2345 , Antony Georgakis
- 374387 , Helen Johns

Figure E.19: Home Page

Our People

+ Add Person + Add LIFE Contract + Add GENERAL Contract

Search:

Search Clear

| ID       | Name          | Surname     | Telephone     | Client | Introducer |
|----------|---------------|-------------|---------------|--------|------------|
| 937495   | Alexiaa       | Haralambous | 0035799990035 | Yes    | Yes        |
| 758473   | Manager       | User        | 004483274829  | No     | Yes        |
| 988942   | John          | Smith       | 00448372847   | No     | No         |
| 374387   | Helen         | Johns       | 003579854698  | No     | Yes        |
| 123456   | Chris         | McDonald    | 075684241     | Yes    | Yes        |
| 832827   | Maria         | Amvrosiou   | 07449328939   | Yes    | No         |
| 293847   | Lorenzo       | Betto       | 0783928474    | Yes    | No         |
| 632541   | Andrew        | Jobs        | 0035799874512 | Yes    | No         |
| 832726   | Margaret      | McKith      | 07547852354   | No     | No         |
| 789456   | Alex          | Shevland    | 07654123987   | Yes    | No         |
| 625362   | Kateline      | Heinz       | 007518654231  | Yes    | No         |
| 0        | Testing       | User        | 003322114455  | No     | No         |
| 648845   | Haralambos    | Haralambous | 99546789      | Yes    | Yes        |
| 668233   | Andreas       | panagiotou  | 96444165      | Yes    | No         |
| 96666518 | Christodoulos | Georgiou    | 96666518      | Yes    | No         |
| 1234567  | Andreas       | Gregorius   | 99129923      | No     | Yes        |
| 956568   | RAFAELLA      | HARALAMBOUS | 99258465      | Yes    | No         |
| 99887766 | RADIC         | ADGBDIDIES  | 00153700      | Yes    | No         |

Figure E.20: Our People Page

The screenshot shows the Leads Master application interface. At the top, there's a navigation bar with links for 'Home', 'Calendar', 'Our People', 'Companies', and 'Reports'. On the right side of the header, there are buttons for 'Register' and 'Logout'. The main content area displays a user profile for 'Andrew Jobs'. The profile includes a placeholder image, the name 'Andrew Jobs', and a 'Details' section with various personal and professional information. Below the details, there's a section for 'General Contracts' showing one entry. To the right, there's a sidebar with a success message and a table for 'Leads Given'.

| ID | Name | Client |
|----|------|--------|
|    |      |        |

Figure E.21: Profile Page

This screenshot shows the Leads Master application interface, specifically the contract details for a user named 'Andrew Jobs'. The page title is '928392 C3 Car Plan'. It displays a 'Details' section with various contract parameters. The sidebar on the left remains consistent with the previous screenshot, showing navigation links for Home, Calendar, Our People, Companies, and Reports.

| Number              | 928392      |
|---------------------|-------------|
| Plan(s)             | C3 Car Plan |
| Issue Date          | 11/3/2017   |
| Expiration Date     | 10/3/2018   |
| Basic Value         | 800.0       |
| Annual Premium      | 1000.0      |
| Payment Doses       | 1           |
| Next Payment        | 11/3/2017   |
| Next Payment Amount | 1000.0      |
| Years of contract   | 0.0         |
| Notes               | -           |

Figure E.22: Contract Page

Leads Master

Register a user: [Register](#)

Goodbye testUser , Thanks! [Logout](#)

MARCH  
2017

Add Activity

| Mo | Tu | We | Th | Fr | Sa | Su |
|----|----|----|----|----|----|----|
| 27 | 28 | 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 | 1  | 2  |

14 / 3 / 2017

12:30 p.m.  
30 min

Sample Meeting  
With: Andrew Jobs  
Meeting Minutes:

Figure E.23: Calendar Page

Add Activity

|                                                                           |                      |
|---------------------------------------------------------------------------|----------------------|
| Name                                                                      | <input type="text"/> |
| Related Person                                                            | <input type="text"/> |
| Date                                                                      | 2017-03-06           |
| Time                                                                      | 14:10:16             |
| Duration                                                                  | <input type="text"/> |
| Employee                                                                  | <input type="text"/> |
| <input type="button" value="Save"/> <input type="button" value="Cancel"/> |                      |

Figure E.24: Calendar Pop Up Page To Insert Entry

**Companies**

+ Add Company    + Add General Plan    + Add Life Plan

| Name                         |
|------------------------------|
| Company 3                    |
| Company 2                    |
| Company 1                    |
| trust                        |
| TRUST INSURANCE (CYPRUS) LTD |

**General Plans Available**

| Name          | Company                      | Commission |
|---------------|------------------------------|------------|
| C3 Medical    | TRUST INSURANCE (CYPRUS) LTD | 0.0        |
| C2 Car Plan   | TRUST INSURANCE (CYPRUS) LTD | 0.0        |
| C3 Car Plan   | Company 3                    | 20.0       |
| C1 Car Plan   | Company 1                    | 23.0       |
| C1 House Plan | TRUST INSURANCE (CYPRUS) LTD | 0.0        |
| C2 Fire Plan  | Company 2                    | 5.0        |

Figure E.25: Companies Page

**Reports**

**Iconic Profiles**

- [Introducer Iconic Profile](#)
- [Client Iconic Profile](#)

**Portfolio Reports**

- [Sales Report](#)
- [Payments Report](#)

**Leads Reports**

- [Successful Introducers Report](#)
- [Man Hours - Activities](#)

Figure E.26: Reports Page

The screenshot shows the Leads Master application's interface. On the left is a dark sidebar with a user profile icon at the top and five menu items: Home, Calendar, Our People, Companies, and Reports (which is currently selected). The main content area has a header with 'Register a user: [Register](#)' and 'Goodbye testUser , Thanks! [Logout](#)'. Below this is a section titled 'Reports' with a sub-section titled 'Iconic Introducer Profile'. It displays demographic information: Age Range: 22 - 28, Average Age: 24.4, Gender: Female, and Occupations: Customer Service Employee, Student. A table lists 'Introducers with successful leads over 65%' with three rows: Helen Johns (0.0 hours, 100.0% success, 1 client), Chris McDonald (1.0 hours, 100.0% success, 3 clients), and another row for Alexiaa Haralambous (0.08 hours, 375220.0 profits). Another table shows 'Introducers sorted based on profit gained from them' with three rows: Alexiaa Haralambous (375220.0 profits, 0.08 hours), Helen Johns (3000.0 profits, 0.0 hours), and Chris McDonald (2250.0 profits, 1.0 hours).

Figure E.27: Iconic Introducer Profile Report

This screenshot shows the same Leads Master application interface as Figure E.27, but for an 'Iconic Client Profile'. The sidebar and header are identical. The main content area has a section titled 'Iconic Client Profile' with a note 'Please select form one category only.' It includes dropdown menus for 'Select Life Plan:' and 'Select General Plan:', and two buttons 'Run' and 'Clear'. Below these are demographic fields: Age Range: 22 - 91, Average Age: 38.11, Gender: Male, and Occupations: Education Staff, Entrepreneur, Lawyer, Other. A table lists 'Clients sorted based on total profit gained from them and total hours spend on them:' with seven rows: PARIS ARGYRIDES (31250.0 profits, 0.0 hours), Chris McDonald (1800.0 profits, 0.5 hours), Alexiaa Haralambous (713.33 profits, 0.5 hours), Christos At Glasgow (250.0 profits, 0.0 hours), Andrew Jobs (220.0 profits, 0.08 hours), and Kateline Heinz (104.17 profits, 0.0 hours).

Figure E.28: Iconic Profitable Client Profile Report

**Leads Master**



Register a user: [Register](#)      Goodbye testUser , Thanks! [Logout](#)

Select Dates to show Sales:

Date 1: March 1, 2017 | Date 2: March 31, 2017  
Select Life Plan: -----  
Select General Plan: -----  
Search Clear  
 Sales  Profits

**General Sales**

| Num    | Client                   | Issue Date     | Expiration Date | Plan                  | Company             | Annual Premium | Profit |
|--------|--------------------------|----------------|-----------------|-----------------------|---------------------|----------------|--------|
| 928392 | Andrew Jobs -- 632541    | March 11, 2017 | March 10, 2018  | C3 Car Plan           | Company 3           | £800.0         | £160.0 |
| 654987 | Chris McDonald -- 123456 | March 11, 2017 | March 9, 2018   | C1 Car Plan HOME BEST | Company 1 Company 1 | £800.0         | £304.0 |

Sales For This Period: £1600.0

Profits For This Period: £464.0

**Life Sales**

| Num | Client                        | Issue Date     | Plan         | Annual Premium | Profit |
|-----|-------------------------------|----------------|--------------|----------------|--------|
| 789 | Alexiaa Haralambous -- 937495 | March 10, 2017 | C1 Life Plan | £800.0         | £480.0 |

Sales For This Period: £800.0

Profits For This Period: £480.0

Figure E.29: Sales Report

**Leads Master**



Register a user: [Register](#)      Goodbye testUser , Thanks! [Logout](#)

Select Dates to show Sales:

Date 1: March 1, 2017 | Date 2: March 31, 2017  
Select Life Plan: -----  
Select General Plan: -----  
Search Clear  
 Sales  Profits

**General Profits**

| Num    | Client                   | Issue Date     | Expiration Date | Plan                       | Company                                | Annual Premium | Profit  |
|--------|--------------------------|----------------|-----------------|----------------------------|----------------------------------------|----------------|---------|
| 928392 | Andrew Jobs -- 632541    | March 11, 2017 | March 10, 2018  | C3 Car Plan                | Company 3                              | £800.0         | £160.0  |
| 654987 | Chris McDonald -- 123456 | March 11, 2017 | March 9, 2018   | C1 Car Plan HOME BEST      | Company 1 Company 1                    | £800.0         | £304.0  |
| 5      | Kateline Heinz -- 625362 | March 24, 2016 | March 24, 2017  | C2 Fire Plan C2 House Plan | Company 2 TRUST INSURANCE (CYPRUS) LTD | £25000.0       | £3750.0 |

Profits For This Period: £4214.0

**Life Profits**

| Num | Client                        | Issue Date     | Plan         | Annual Premium | Profit |
|-----|-------------------------------|----------------|--------------|----------------|--------|
| 789 | Alexiaa Haralambous -- 937495 | March 10, 2017 | C1 Life Plan | £800.0         | £480.0 |

Profits For This Period: £480.0

Figure E.30: Profits Report

Leads Master



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Upcoming Payments  To Be Paid

**General Upcoming Payments**

| Num    | Client                | Issue Date | Plan        | Company   | Doses | Payment Due | Amount  |
|--------|-----------------------|------------|-------------|-----------|-------|-------------|---------|
| 928392 | Andrew Jobs -- 632541 | 11/3/2017  | C3 Car Plan | Company 3 | 1     | 17/3/2017   | £1000.0 |

Figure E.31: Upcoming Payments Report

Leads Master



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Upcoming Payments  To Be Paid

**General Past Payments**

| Num       | Client                                | Issue Date | Plan                                       | Company                                                         | Doses | Payment Due | Amount  |
|-----------|---------------------------------------|------------|--------------------------------------------|-----------------------------------------------------------------|-------|-------------|---------|
| 2         | Alexia Haralambous -- 937495          | 21/1/2016  | C3 Car Plan                                | Company 3                                                       | 3     | 21/1/2017   | £266.67 |
| 5         | Kateline Heinz -- 625362              | 24/3/2016  | C2 Fire Plan C2 House Plan                 | Company 2 TRUST INSURANCE (CYPRUS) LTD                          | 2     | 14/3/2017   | £350.0  |
| 45        | Maria Amvrosiou -- 832827             | 17/2/2015  | C3 Car Plan                                | Company 3                                                       | 1     | 21/3/2016   | £600.0  |
| 9876      | Lorenzo Betto -- 293847               | 21/1/2017  | C2 Car Plan                                | TRUST INSURANCE (CYPRUS) LTD                                    | 1     | 21/1/2017   | £1000.0 |
| 45        | Andrew Jobs -- 632541                 | 21/5/2016  | HOME BEST                                  | Company 1                                                       | 3     | 24/1/2017   | £266.67 |
| 44778877  | PARIS ARGYRIDES -- 99887766           | 5/4/2016   | HomeShield Home Shield EMPLOYERS LIABILITY | trust TRUST INSURANCE (CYPRUS) LTD TRUST INSURANCE (CYPRUS) LTD | 6     | 23/1/2017   | £33.33  |
| 9873      | Andrew Jobs -- 632541                 | 26/1/2017  | Home Shield                                | TRUST INSURANCE (CYPRUS) LTD                                    | 1     | 26/1/2017   | £200.0  |
| 123456    | Stelios Gkiousas Gkiousas -- 99193397 | 14/11/2016 | MOTOR INSURANCE                            | TRUST INSURANCE (CYPRUS) LTD                                    | 1     | 29/1/2017   | £252.0  |
| 889965665 | Christos At Glasgow -- 1234567889     | 30/1/2017  | C2 Fire Plan HomeShield                    | Company 2 trust                                                 | 12    | 18/2/2017   | £69.5   |
| 654987    | Chris McDonald -- 123456              | 11/3/2017  | C1 Car Plan HOME BEST                      | Company 1 Company 1                                             | 1     | 11/3/2017   | £1000.0 |

**Life Past Payments**

| Num | Client                       | Issue Date | Plan           | Company   | Doses | Payment Due | Amount  |
|-----|------------------------------|------------|----------------|-----------|-------|-------------|---------|
| 789 | Alexia Haralambous -- 937495 | 10/3/2017  | C1 Life Plan   | Company 1 | 1     | 11/3/2017   | £1000.0 |
| 3   | Chris McDonald -- 123456     | 18/12/2016 | C1 Life Plan   | Company 1 | 1     | 10/3/2017   | £650.0  |
| 98  | Andrew Jobs -- 632541        | 21/2/2016  | C3 Plus scheme | Company 3 | 1     | 21/1/2017   | £800.0  |
| 1   | Marianna Neokleous -- 661032 | 1/2/2017   | C3 Life Invest | Company 3 | 12    | 28/2/2017   | £83.33  |

Figure E.32: To Be Paid Payments Report

**Leads Master**



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### Successful Leads Reports

Search:

Top 10 Introducers: (Note: Man Hours not calculated here)

| ID         | Name              | Surname     | Client | Percentage | Details                 |
|------------|-------------------|-------------|--------|------------|-------------------------|
| 374387     | Helen             | Johns       | No     | 100.0      | <a href="#">Details</a> |
| 123456     | Chris             | McDonald    | Yes    | 100.0      | <a href="#">Details</a> |
| 648845     | Haralambos        | Haralambous | Yes    | 60.0       | <a href="#">Details</a> |
| 937495     | Alexiaa           | Haralambous | Yes    | 50.0       | <a href="#">Details</a> |
| 1234567889 | Christos          | At Glasgow  | Yes    | 0.0        | <a href="#">Details</a> |
| 758473     | Manager           | User        | No     | 0.0        | <a href="#">Details</a> |
| 1          | Mehran            | Eftekhari   | No     | 0.0        | <a href="#">Details</a> |
| 1234567    | Andreas           | Gregorius   | No     | 0.0        | <a href="#">Details</a> |
| 99193397   | Stelios Gkioussas | Gkioussas   | Yes    | 0.0        | <a href="#">Details</a> |
| 2345       | Antony            | Georgakis   | No     | 0.0        | <a href="#">Details</a> |

Figure E.33: Successfull Introducers Report

**Leads Master**



Andrew Jobs  
45 HOME BEST

**Details** [Edit](#)

[Renew](#)

|                     |           |
|---------------------|-----------|
| Number              | 45        |
| Plan(s)             | HOME BEST |
| Issue Date          | 21/5/2016 |
| Expiration Date     | 21/2/2017 |
| Basic Value         | 500.0     |
| Annual Premium      | 800.0     |
| Payment Doses       | 3         |
| Next Payment        | 24/1/2017 |
| Next Payment Amount | 266.67    |
| Years of contract   | 0.0       |
| Notes               | -         |

Figure E.34: Renewal functionality visible when a contract is expired

The screenshot shows a user interface for a renewal form. On the left, there is a vertical navigation bar with icons and labels: Home (house icon), Calendar (calendar icon), Our People (person icon), Companies (company icon), and Reports (bar chart icon). The 'Our People' item is highlighted with a teal background. The main content area has a light gray header with the word 'Details' and a pencil icon. Below this is a red 'Renew' button. A white modal window is open, containing a 'Period' section with four radio buttons: '3 months', '6 months', '9 months', and '1 Year'. Underneath is an 'Other' section with a text input field and another 'Renew' button. At the bottom of the main screen, there are two sections: 'Next Payment' and 'Next Payment Amount', each with a corresponding input field.

Details

Renew

Period

3 months

6 months

9 months

1 Year

Other

Renew

Next Payment

Next Payment Amount

Figure E.35: Renewal form

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