

**Dodgy Insurance Company of Australia Pty Ltd**

**Oliver Lenehan**

**Dodgy Car Insurance**

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## Notes

* Default Admin Account (User: **admin** Pass: **password**)
* Default User Account (User: **user** Pass: **password**)

# **Requirements Document**

## Purpose

The purpose of the system is to provide an Insurance Quote System that can calculate quote billing for insurance claims and provide a printable letter to be delivered to the claimant.

## Customer Needs

The customer requires the following to be implemented within the system:

* Branding such as Logos and a unified Colour scheme,
* Ability to calculate insurance premiums based on a range of risk factors,
* Logins - User and Admin level authentication,
* A main menu screen (links to other pages),
* A quote entry screen (to collect details and relevant information for a premium),
* A quote preview screen (a quotation letter ready to print),
* The ability to send to a printer the quotation preview,
* An administrator-only page for modifying lookup values,
  + Ability to amend all risk and administrative data
  + Lock system data to prevent system corruptions.
* Administrator-only page for analysis graphs and charts,
  + Formatted for printing,
  + Two different chart types from two different fields,
  + Show data fields used to derive charts,
  + Use real data from customers.
  + Justifications in requirements document.
* Administrator-only page for viewing, modifying and updating stored data,
  + Each column is relevant to the quotation.
* Quotations collect details on Car (Engine size, Make, Model), Customer (Gender, Date of birth, Age), Residence (Location, Full address), Quotation (Quote date, Payment frequency).

## Requirements

**Functional: (Important to how the system operates)**

* Store information about clients
* Provide reports
* Calculate Costs
* Analysis and presentation of graphs
* Correct algorithms + Data-Structures

**Non-Functional: (Are not critical to the system working at a basic level)**

* Designing consistent screens which are clear and accessible.
* Ensuring the data within the system is relevant and up to date.
* Data access: only allow authorised administrators access to the large amounts of sensitive data in the datastore.

## Success Criteria

For the system to succeed, these three key goals need to be achieved:

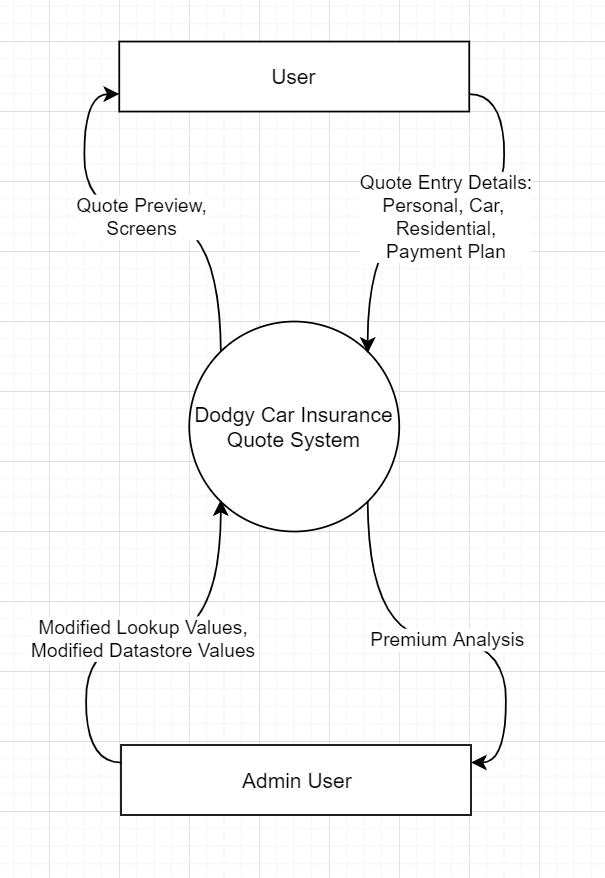
1. Successfully submit and calculate billing to produce a quote,

Requirements Document – Continued

1. Generate a printout of any previously entered quote,
2. Display charts relating to all previously entered quotes.

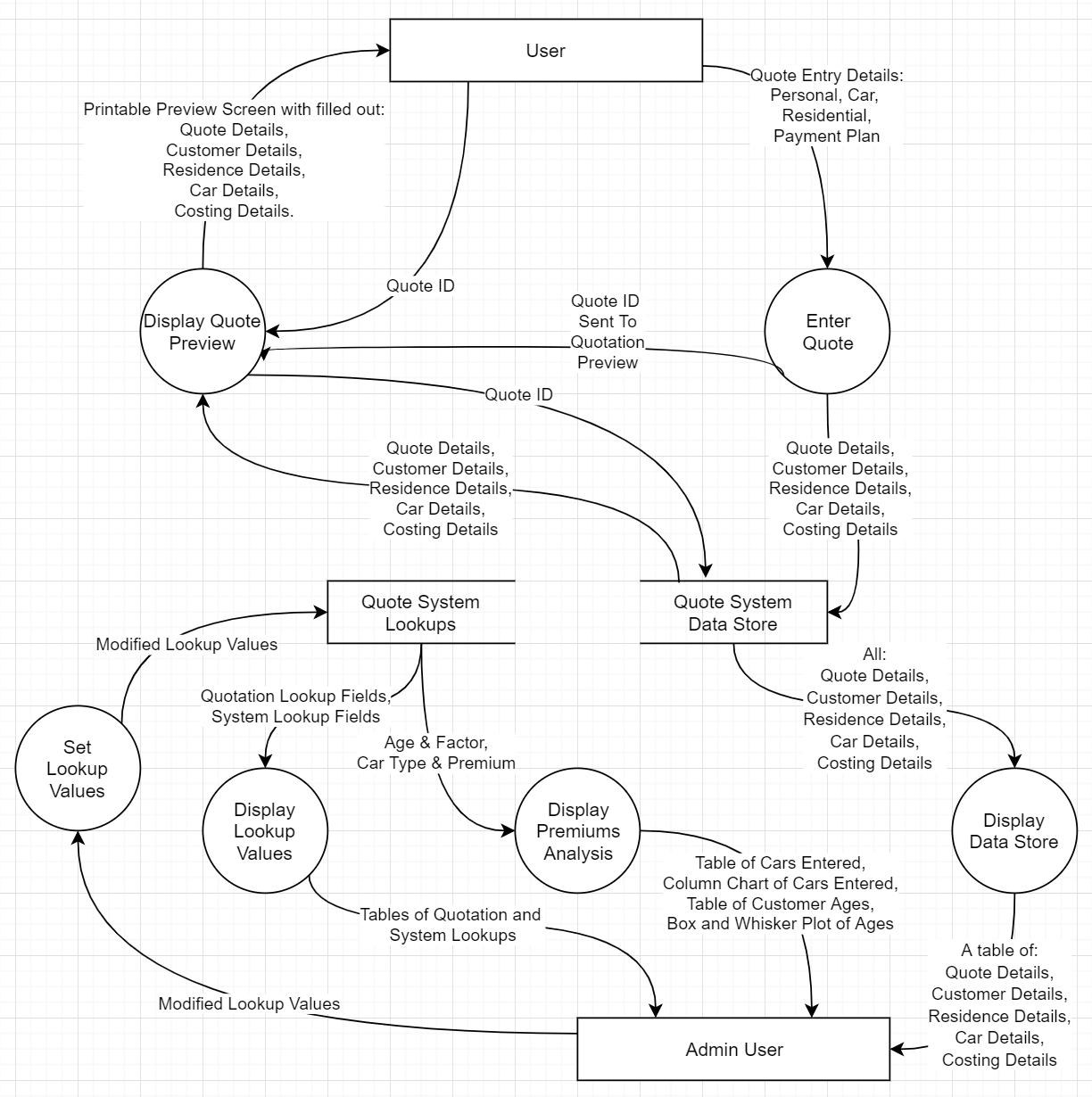
Requirements Document – Continued

## Context Diagram



Requirements Document – Continued

## Data Flow Diagram



## Social Issues

**Security** – Are people able to trust that the data cannot be accessed without privilege? Will there be checks to ensure that administrators to not abuse their access to sensitive information?

**Ergonomics and Accessibility** – The system should provide a consistent user interface, with large text and buttons. The use of excel enables zoom for visually impaired employees.

**Personal** – There may be distress caused by seeing some people’s costs in relation to an employee’s own. Do family members or friends want an administrator to see their personal details?

**Economic** – The system should account for the generally lower wealth of regional Australia by “discounting” urban pricing. Does the program account for household income?

## Ethical Issues

**Privacy** – User data is available to all logged in users through the quotation printout screen. It is not easy to quickly scrape user data unless the user is an administrator. Reasonable effort should be made to protect it against unauthorised access to large portions. The Australian Privacy Principles deal with how the data should be collected, stored and secured within the system.

Requirements Document – Continued

**Discrimination** – Is it legal to charge people differently based on location or gender, given that it is statistically proven that they have differing levels of risk? A case for this would be that existing insurance schemes do discriminate on this basis, so there is a precedent.

**Copyright Laws** – There is no potential for copyright infringement as the system would store purely factual information identifying and categorising individuals. The system does not hold creative works by customers. The logo must be clear of copyright infringement.

**Safety** –A software program that performs calculation is unable to cause direct physical harm to its users. If a data breach occurs, it may make an individual vulnerable to attack or violence in the community.

**Reliability of Data** – One requirement of the system is that data can be corrected by an administrator. Data is not modified by any automated systems, less chance for accidental change, this means that damages can be attributed to an individual. The Australian Privacy Principle No. 10 discussing an individuals right to ensure their information is accurate and complete.

**Fraud** – Administrative users may have access to friend or family data and can knowingly and fraudulently increase or decrease factors to either benefit or defraud individuals.

## Colours

# **Design Document**

Banner Text Colour: (Gold) #FFC000 

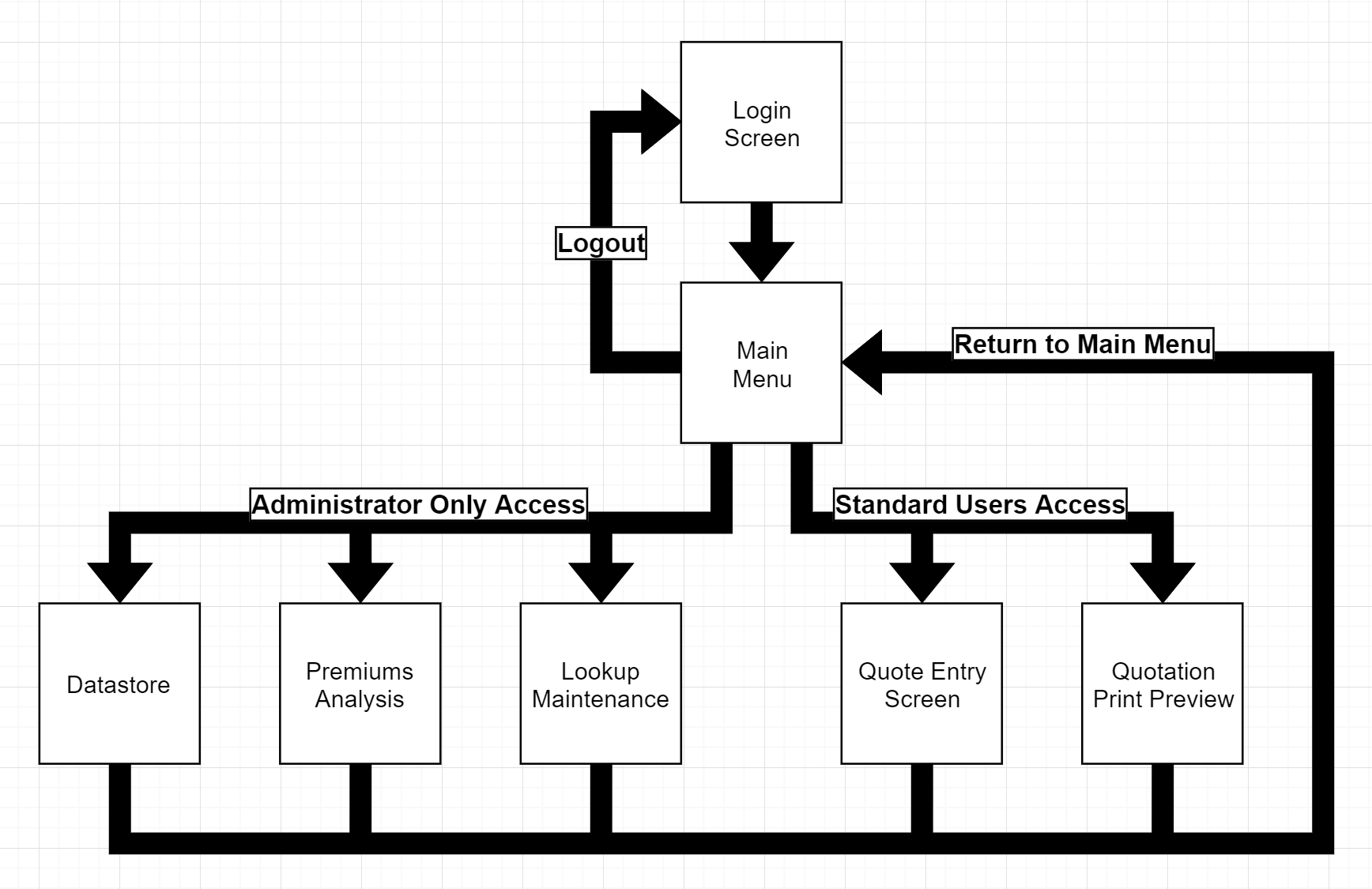
Banner Background Colour: (Blue) #203764 

Document Page Background Colour: #3A3838 

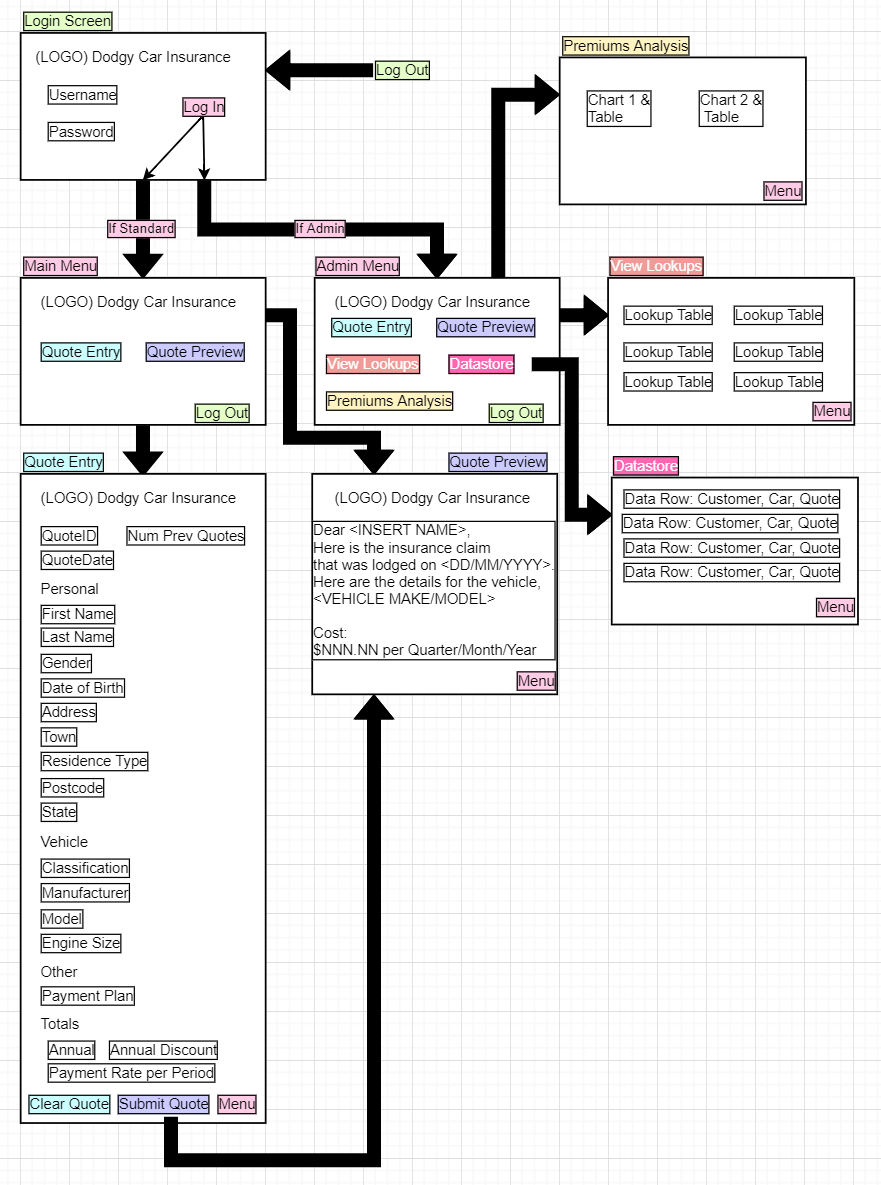
## Logo

Design Document – Continued

## Site Map



## Storyboards



Design Document – Continued

## Data Dictionaries

Design Document – Continued

### Customer Data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data Type | Format | Description | Example | Validation |
| First Name | Text |  | The applicant’s first name | John |  |
| Last Name | Text |  | The applicant’s last name. | Smith |  |
| **Gender** | Text |  | The gender of the applicant. **Used as a factor.** | Male | List of available genders. (Male, Female) |
| Date of Birth | Date | DD/MM/YYYY | The date of the applicant, proving their age. | 12/3/1945 | Greater than or equal to 18 years of age. |
| Age: =Years since DoB | Integer |  | The age of the claimant calculated from date of birth. | 74 |  |
| Street Address | Text |  | The street address of the applicant without other location details. | 1 Main Street |  |
| Town | Text |  | The town / suburb or locality of the applicant‘s primary residence. | Lithgow |  |
| **Residence Type** | Text |  | The type of location of the primary residence of the applicant. **Used as a factor.** | Semi-Rural | List of available types (Urban, Suburban, Semi-Rural, Rural, Regional) |
| Postcode | Text | NNNN | The postcode of the applicant’s primary residence. | 2790 |  |
| State / Territory | Text |  | The state of the primary residence of the applicant. | NSW | List of available states / territories (NSW, VIC, QLD, WA, NT, TAS, ACT, SA). |

### Quote Data

Design Document – Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data Type | Format | Description | Example | Validation |
| **Payment Plan** | Text |  | Are payments to be made monthly, quarterly or annually. **Used as a discount factor.** | Monthly | List of available choices. (Quarterly, Annually, Monthly) |
| Quote ID | Number | Integer | Unique identifier for each quote. | 324 | Automatic |
| Date of Quote |  | DD/MM/YYYY | Date quote was lodged. | 1/6/2019 | Automatic |
| Number of Previous Quotes | Number | Integer | Num. quote applications previously lodged. | 2 | Automatic |
| Calculated **Annual Cost** (As Is) | Number. Formula = (car type premium) \* (engine size factor) \* (gender factor) \* (age factor) \* (residence type factor) |  | The annual cost without discounts. | $777.60 | Automatic |
| Calculated **Annual Cost (Discounted)** | Number.  (Annual Cost) \* (Payment Plan Discount Factor) | Currency | Total annual cost with discounts applied. (Used to keep quote rate consistent even if factors change). | Monthly:  $777.60  Quarterly:  $738.72  Annually: $660.96 | Automatic |
| Calculated Cost per Period (Discounted) | Number. Formula = (Discounted Annual Cost) / (1=annual or 4=quarterly or 12=monthly) |  | The cost per period that was specified in the quote. | Monthly: $64.80  Quarterly:  $184.68  Annually: $660.96 | Automatic |

Design Document – Continued

### Car Data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data Type | Format | Description | Example | Validation |
| **Classification** | Text |  | The type of vehicle for which a claim is being lodged. **Used as a factor.** | Ute | List of available options (Sedan, Hatchback, Station-Wagon, 4x4, Truck, Ute) |
| Manufacturer | Text |  | The manufacturer of the vehicle for which a claim is being lodged. | Toyota |  |
| Model | Text |  | The model of the vehicle for which a claim is being lodged. | Hilux |  |
| **Engine Size** | Number | Decimal | The size of the engine of the vehicle for which a claim is being lodged. **Used as a factor.** | 2.5 |  |

Design Document – Continued

## Risk Assessment Data Design

|  |
| --- |
| **lBasePremiumCar** – A lookup for the base cost of the insurance premium. |
| Sedan: $500  Hatchback: $480  Station Wagon: $490  4x4: $530  Truck: $600  Ute: $450 |

|  |
| --- |
| **lFactorResidenceClass** – Lookup factor determining the weighting of the risk of where someone is living. |
| Urban: x1.4  Suburban: x1.2  Semi-Rural: x1.1  Rural: x1.0  Regional: x0.9 |

|  |
| --- |
| **lFactorPower** – Lookup factor determining the weighting of the risk of how much capacity the car’s engine has in litres. |
| 0.0L🡪1.0L: x0.7  1.0L🡪2.0L: x0.9  2.0L🡪2.3L: x1.0  2.3L🡪3.0L: x1.2  3.0L🡪4.0L: x1.4  4.0L+: x1.5 |

|  |
| --- |
| **lFactorGender** – Lookup factor determining the weighting of the risk of someone’s gender. |
| Male: x1.2  Female: x1.1 |

|  |
| --- |
| **lFactorAge** – Lookup factor determining the weighting of the risk of how old someone is. |
| 16🡪21: x1.2  21🡪30: x1.4  30🡪43: x1.3  43🡪58: x1.1  58🡪72: x1.2  72🡪80: x1.4  80+: x1.5 |

|  |
| --- |
| **lPlans** – Lookup table with the discount values, and information relating to payment plans. Along with how much to divide the payments into for a year. |
| Monthly: Discount=x1.0, Divisor=12, Name = “per Month”  Quarterly: Discount=x0.95, Divisor=4, Name = “per Quarter”  Annually: Discount=x0.85, Divisor=1, Name = “per Year” |

## Justification for Premiums Analysis

Design Document – Continued

### Cars Entered in Each Category

* Shows a view of the sorts of vehicles the company caters for.
* Provides insight into possibly sub-categorising if one has more than another.
* Allows factors to be identified that will enable the company to maximise profits.

### Number of Claimants per Age Group

* Shows where the largest age group that the company provides for.
* Provides insight into where age factors can be adjusted to maximise profits.
* Allows targeting of marketing material to suit the customers or any increasing and un-tapped customer age groups.

# **Evaluation Document**

## Meeting the Requirements for Success

**Functional**

* The system successfully stores information regarding claimants into a datastore for retrieval later on.
* Quotations can be printed and generated by referencing the quote id in a formal letter format.
* Reports can be printed and viewed within the system for administrators.
* The quotation entry system automatically calculates quote billing for claimants and automatically redirects to the printout screen.
* The lookup factors affect the costings in the desired way.

**Non-Functional**

* The system’s design is consistent across all pages and features easily readable text and buttons.
* Data can be easily modified through the lookups and datastore by administrators only.
* The datastore, premiums analysis and lookups sheets are protected against non-administrator users. All sheets except the login are protected from un-logged-in access.

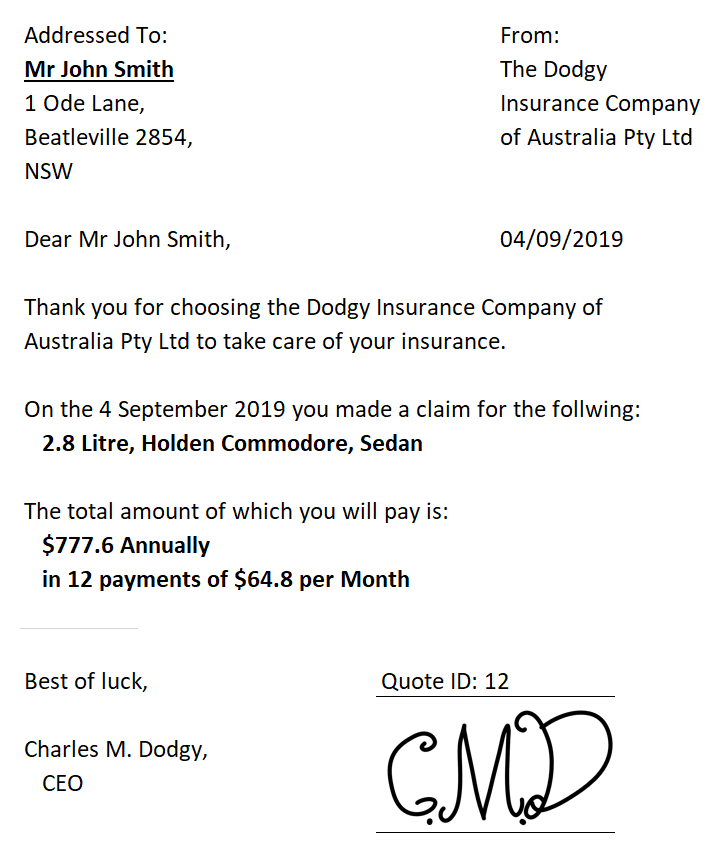
**Key Success Criteria**

1. Successfully submit and calculate billing to produce a quote: The system is fully able to process and calculate billing a quote and processes it for storage.

Requirements Document – Continued

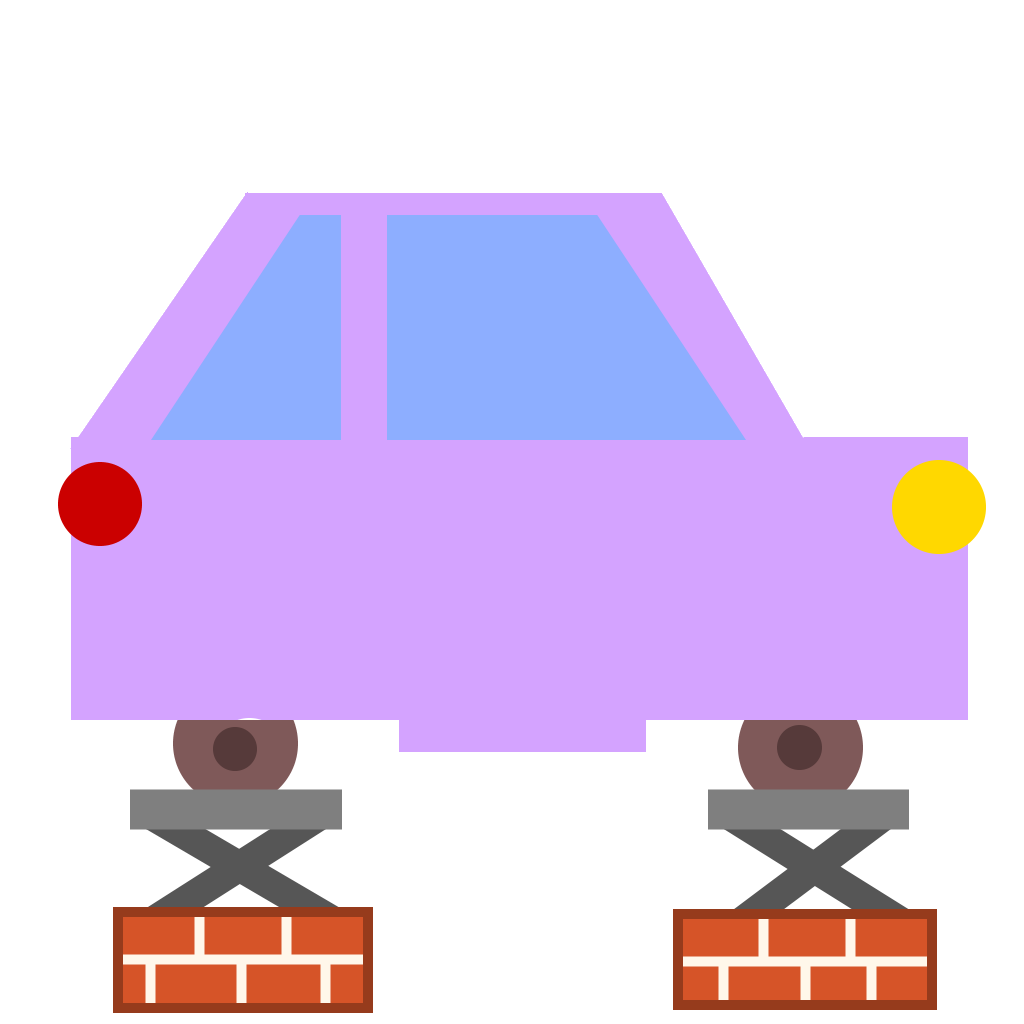
1. Generate a printout of any previously entered quote: The system can generate a formal letter printout of a quote, and does not error when the quote id is invalid.
2. Display charts relating to all previously entered quotes: The system displays charts that plot information about ages and car types from the list of stored quotations.

**Example Quotation Printout**



Evaluation Document – Continued

## Enhancing the Product for the Future

* To avoid potential unfair discrimination, quotation factors of gender and location could not be applied until there is a bad record against the person.
* Broadening the number of vehicle categories to suit the diverse range of modern vehicles, and to expand the insurance company into industries such as mining.
* The system could be more customer focused with a relational database where a customer would have many claims.
* The use of alternative software such as Microsoft Access may suit this project better in a professional environment with a large company to ensure that there are no duplicate claims or customers being unfairly charged due to an incorrect input.
* The number of previous quotes field could be used to calculate either a discount or penalty to the cost of new quotes for a given claimant.
* Being able to provide customers access to their data is important to meet the requirements of the Australian Privacy Principles of the Privacy Act.