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| Project Documentation |
| INB201 Scalable Systems Development |
| An Emergency Management System for Queensland |

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# Foreword

The state of Queensland is a diverse and varied state that has many unique factors that influence its functioning. It is the third most populated state in Australia and has the 2nd largest area. It is extends from the Tropics of the north to the more temperate areas of the south and is constantly aware of the severity of natural and man made disasters. Queensland has been tested many times over the past decade and it is public knowledge that the current system being using by government and local emergency management workers is not able to keep up with the rapid changing global environment information delivery and distribution.

The change in the ways in which information is retrieved and distributed is something that all Queenslanders understand has been rapid and fundamental to the growth of Queensland and Australia. The rapid accessibility to information and its distribution in more efficient and relevant means then those currently implemented is something that Queensland and indeed every government needs to be researching.

The application that team 5 has developed aims to suite after extensive consultation with government and other stakeholders. After this consultation the needs and expectations of Queenslanders where learnt and developed into this application.

This documentation aims to explain how to use team fives new application has been developed for consideration as a replacement state emergency management system for Queensland. It hopes to explain the applications strengths and weaknesses and the improvements it makes over current systems both domestically to Queensland and nationally.

Thankyou

Team 5

# Introduction

This documentation will explain how the system team 5 has developed works and the ways in which the application will be used to deliver upon the user requirements. The system is built on the n-tier application layer architecture and the documentation is separated accordingly.

The documentation will be split into 3 sections:

* The Application Layer
* The Database Layer
* Help documentation

The application layer will document the interface design reasons, the form functions and the interface options.

The Database Layer documentation describes the rationale behind the tables in the database and the values in each column along with the constraints that apply to the tables and their relations.

The help documentation will be an external documentation listing to be sent along with the application package when the zip file is downloaded this documentation will give a brief overview as to how to use the help documentation as well as how to find it.

# Application Layer

# Database Layer

## Introduction to Database

The database layer of the application is where the real information is stored. The Database software implemented with this application is the MySQL community server. MySQL was chosen for various reasons but mainly:

- Large industry support base

- Many skill administrators capable of working with the Database.

- MySQL server is continually being updated and security patches are readily available.

- Works with all major operating systems and can be run on all operating systems indifferent to the application.

- Can be obtained for free and industry licences are relatively cheap but not compulsory.

- Easily developed with using strong robust syntax and supports complete range of standard SQL syntax rules and options.

The database used with this application consists of several tables, these tables have been designed with data redundancy in mind and the database is normalised to industry standard level 3.

## Database Tables

The database consists of 6 tables to help maximise data efficiency and reduce redundancy. The Database consists of the tables:

-Services

-Location

-Events\*

-Personnel

-Incidents

-event type

Note Events table is called events\_t in database as event / events is a predefined function in SQL.

These tables all join together through a series of parent child relationships and foreign keys. The tables join together in the database to give the following model (figure2.1).

### Figure 2.1 EER model of database



Note that the database varies slightly to the model shown but due to limitations in MySQL EER modelling this is the best representation that can be shown at this point.