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**THE ADDITION OF DATABASE FUNCTIONALITY
TO THE SMALLTALK LANGUAGE**

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MSC IN INFORMATION SYSTEMS

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“The candidate confirms that the work submitted is her own and the appropriate credit has been given where reference has been made to the work of others”

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Chapter 1

Introduction

1.1 Introduction To The Project

Smalltalk is an object-oriented programming language. It was developed in the early 1970's by a research group at the Xerox Palo Alto Research Center. In the early 1980's the group launched the first commercial version of Smalltalk called **Smalltalk-80**. Since then, there are considerable versions of Smalltalk being developed to suit a particular environment/requirement. One of them is the Little Smalltalk system. This system was developed as a part of a graduate level seminar on programming language implementation.

Being an object-oriented language, Smalltalk lacks the capabilities of database systems such as persistence, concurrency, recovery, ad-hoc query facility and secondary storage management. But there have been many works to incorporate Smalltalk with those features. For instance, **GemStone** Inc. extended the language into a commercial Database Management System (DBMS) called Gem&one. Similarly, my project also concerns with the addition of database functionality to the Smalltalk language. I begin with describing the features of an object-oriented database. These features act as a foundation of understanding what database features need to be added to Little Smalltalk. I proceed with investigating some of the techniques that have been used to add DBMS **functionalities** to Smalltalk, especially as pertains to **GermStone**. After a thorough survey, I proposed a design to add persistence feature. Persistence refers

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