Terms of Reference

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1. Project Title

A Video Security System Server

2. Student Name, Name of Project Supervisor

Student Name	:	Matthew London
Project Supervisor	:	Richard Barker

3. Date

6th October 2001

4. Project Aims

The purpose of this project is to produce a server system capable of receiving and archiving image sequences transmitted over the Internet from home security systems. The system will provide an interface for the administration purposes, i.e. adding new users, issuing messages to the users, etc. The system will also provide facilities for a user to view/manage their image histories from a remote PC over an Internet link.

5. Deliverables

The computing artefact to be generated during this project will be a software system capable of sending and receiving images sequences over the Internet from home security systems. These image sequences will be stored and managed as image histories. The system will provide a user interface to allow the administration of the system. This will include addition and deletion of users, management of space used by users and sending messages to users. The system will also provide a method allowing users to manage their image histories over the Internet.

6. Overview of Project

The first component of the project is to complete a literature search where the possible methods of developing the system are researched. While this is being undertaken, some initial work using Java should be undertaken in order to build a familiarity with the language and to provide some insight as to what can and cannot be accomplished. Following the literature review is the requirements specification. In this section, the author’s understanding of the problem will be developed and a specification of the system developed using an object orientated technique. The next section of the project will be to develop a structured design which documents exactly how the system will operate when implemented. Once the design is complete, the author can apply the knowledge already gained in the Java language to implement the system. Initial research would indicate the need to use JDK 1.4 from Sun, as this provides some of the necessary encryption algorithms.

7. Educational Value

During the course of this project, the author aims to gain or increase existing knowledge in a number of areas.

Languages:

The author plans to learn the programming language Java, in which the system will be implemented.

The author also plans to extend his knowledge of UML, which will be used to develop the specification and design of the project.

Techniques:

The author plans to extend his knowledge of object orientated design and implementation in order to implement the system in an object orientated manner.

The author must also build a practical knowledge of socket programming on top of his existing basic theoretical knowledge in this area in order to allow the development of the Internet portions of the project.

The author plans to build on his existing knowledge of databases, along with data structures and algorithms, in order to provide a quick and efficient method of storing and retrieving images.

Skills:

The author plans to increase his skills in researching information as well as improving his skills in project planning and management.

8. Technical Challenge

The single biggest technical challenge in this project will be to learn the programming language Java, which will be used to implement the system, as the author has very little experience in this area. This is by no means the bulk of the technical challenge of the project. The author will have to apply and build upon existing skills gained from courses in software engineering, software analysis and design and embedded systems to formulate an understanding of the problem and from this draw up a requirements specification. The author will have to apply knowledge of techniques acquired in database technology, data structures and algorithms in order to design a system which is efficient. The author will have to build a working knowledge of Internet security in order to ensure that the resulting system is secure.

9. Project Plan

Date	Activity
W/C 01/10/01 (Week 2)	Begin Literature Search
Thursday 11/10/01 (Week 3)	Hand in Terms of Reference
W/C 15/10/01 (Week 4)	Begin investigating programming constructs that will be required (such as socket programming in Java)
W/C 22/10/01 (Week 5)	Begin work on Requirements Specification
W/C 19/11/2001 (Week 9)	Begin work on Design (Requirements Specification finished)
Tuesday 04/12/01 (Week 11)	Hand in Interim Report
W/C 28/01/02 (Week 1)	Meet with supervisor and plan meeting times for semester 2
W/C 04/02/02 (Week 2)	Begin implementation (Design complete)
W/C 04/03/02 (Week 6)	Begin Testing (Implementation complete)
W/C 11/03/02 (Week 7)	Review proposed Table of Contents with supervisor Begin Evaluation (Testing complete)
W/C 18/03/02 (Week 8)	Provide supervisor with draft copy of Final Report
Thursday 25/04/02 (Week 10)	Hand in Final Report
W/C 06/05/02 (Week 12)	Demonstration and Presentation of Results

10. Progress to Date

To date, some basic research into the practicality of using Java to implement the project has been performed. The result of this preliminary research is that the use of Java would be suited to the project, allowing the project aims to be fulfilled.