CSI3344: Distributed Systems

Assignment 3: Distributed System Project

Project Report

Jacob Vanderwiel (10536622)

Hilary Soong (10591936)

Lecturer: Dr Jitian XIAO

Campus: ECU Joondalup  
Submission Date: 22/05/2024

Executive Summary

Contents

[Introduction 1](#_Toc162372477)

[Main Body Headings titled as appropriate 1](#_Toc162372478)

[Conclusion 1](#_Toc162372479)

[References 2](#_Toc162372480)

[Appendix A Appendices added as appropriate 3](#_Toc162372481)

# Introduction

A distributed system comprises individual computers that collaborate to provide a service, appearing as a cohesive entity. Contemporary distributed systems facilitate various services, including electronic mail (SMTP), the World Wide Web, and electronic payments (Tanenbaum & van Steen, 2007).

The project aims to implement an Honors Enrolment Pre-assessment system (HEPaS), a three-tier distributed system for the Open University of Science and Technology (OUST). This system evaluates students to determine their eligibility for Honors studies. Users of this application may include OUST students or individuals interested in enrolling in an Honors course at OUST. Multiple computers will host the client and server applications. Asynchronous communication is employed for project implementation, programmed in Python.

The system comprises three tiers: client, server-1, and server-2. The client interface collects user input, validates data, and sends it to server-1. Server-1 receives the data, assesses the user's eligibility for honor study based on their average unit scores. If the user is a current or former OUST student, server-1 retrieves the OUST students' course learning records (OSCLR) from server-2, the OSCLR database.

The project unfolds in two phases. Phase one entails a two-tier implementation involving collaboration between the client and server-1. This phase assumes the user is a non-OUST student, hence excluding access to the OSCLR database. Phase two introduces a three-tier version where server-1 communicates with server-2 via RMI, restricting direct client access to server-2. This phase also mandates client verification for OUST student status. If verified, the client requests server-1 to retrieve the user's OSCLR from server-2.

In the remainder of the report, it will cover the following sections. Section 2 will explain the understanding of concepts and techniques to achieve the project. Section 3 will cover the problems encountered in this project. Section 4 will go through the strategies used to solve the problems. Section 5 will provide a user manual for project installation onto multiple machines and steps for running the programs. Section 6 will delve into the test cases for this project. Section 7 will engage in discussions of implementations and solutions and will conclude with a summary to summarize the outcomes and findings of the project.

# Main Body Headings titled as appropriate

# Conclusion

# References

Appendix A Appendices added as appropriate