School of Computing

UNIVERSITY OF LEEDS

COMP5200M Project Specification

Student Name: Tushar Pardhe
Programme of Study: Msc Advance Computer Science
Supervisor Name: Owen Johnson
Name of External Company (if any)**:** N/A
Type of Project: Software Development / Blockchain
Provisional Title of Project: Implementation of FHIR-XRPL: A Blockchain-Based Medical Ledger System
Aim of Project: 1. **Building the System:** Brainstorm, design, and build a robust and efficient medical ledger system implemented on the XRP Ledger. 2. **Unearthing Blockchain's Potential:** Dive into the blockchain technology to enhance data protection and accessibility in the healthcare field. 3. **Developing User Interaction:** Deliver an intuitive and user-friendly interface for smooth interactions within the medical ledger system for faster and secure information. 4. **Upholding Data Integrity and Safety:** Remain steadfast in adhering to the stringent standards of FHIR to maintain the highest level of data privacy and security in the system. 5. **Assessing System Effectiveness:** Ensuring that the performance and efficacy to ensure it meets the anticipated outcomes.

Objectives:

1. **FHIR-XRPL to Life:** Envision and construct a robust, secure medical ledger system using the XRP Ledger. The task includes forming a durable framework that can efficiently manage large amounts of data securely.

2. **User Interface Creation:** Develop a reactive and instinctive user interface that satisfies the demands of a diverse group of stakeholders, encompassing patients, healthcare professionals, and system administrators.

3. **Data Safety:** Deploy sophisticated methods and blockchain technology to guarantee the confidentiality and protection of the medical data. This covers the safe storage and transmission of sensitive patient-related information.

4. **System Examination and Testing:** Perform thorough testing of the system to detect and correct potential weak spots. The system's effectiveness will be judged using established evaluation parameters.

5. **Comparative Study:** Compare FHIR-XRPL system against other existing ledger systems. Assess the merits and demerits of various methodologies and underscore the distinct attributes and benefits of our proposed system.

Deliverables:

1. **Developing User Interface and Code:** Developing the code and relevant files needed to operate the user interface of the MedLedger-XRPL system, including Front-end and back-end repositories.

2. **Publishing GitHub Repository:** A systematically organized repository will be established on GitHub. It will host the full codebase, including all the source code, configuration files, and accompanying documentation.

3. **Creating the Performance Analysis Report:** A detailed performance report of the FHIR-XRPL system will be put together. This document will spotlight the system's strengths, areas that need attention, and offer potential upgrade strategies.

4. **Project Presentation:** A summarizing presentation encapsulating the project's results, main insights, and prospective future directions which will provide a clear, summarized outline of the project.