Scope Statement

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| **Project Title: Jadcup Digital Twin**  **Date: 08/03/2023** **Prepared by:** Jadcup team |
| **Project Justification:**  Jadcup wants to modernize their factory processes and pull their production into Industry 4.  This project is a prototype to determine the viability of an interface to manage PLCs on the Jadcup factory floor. |
| **Purpose and Objectives:**  The purpose of this project is to develop a web-based FERN (Firebase, Express.js, React.js, Node.js) application that allows Jadcup to connect and interact with programmable logic controllers (PLCs).  The objective of this project is to provide Jadcup with a prototype for a user-friendly interface to connect and control PLCs remotely. |
| **Product Characteristics and Requirements:**   1. Web interface 2. Factory I/O Simulation (strictly for the purposes of this prototype) 3. Read/Modify PLC Data |
| **Functional Requirements:**   * The application must allow users to connect & control PLCs. * The application must show data managed by PLCs. * The application must be modular enough to support multiple, different PLCs. * The application must provide secure user authentication and authorization.   **Non-Functional Requirements:**   * The application must be responsive and have a fast load time. * The application must be functional and user-friendly when run on a PC. |
| **Summary of Project Deliverables**   1. A functioning FERN web application prototype for interfacing with PLCs 2. A design document for the application 3. A presentation for the web application |
| **Assumptions & Constraints:**   * The application will be developed using Kanban methodology. * The development team will consist of five developers, one of which is a project manager, and one of which is a scrum master. * The team will be managed & report to a Team Mentor and a Client * The application will be hosted on a cloud-based platform. * The development will be completed by the end of October, 2023. * The application will be a prototype. |
| **Stakeholders:**   * The primary stakeholder for this project is Jadcup who will use the FERN application to connect and interact with PLCs. * The project team, team mentor, team mediator and paper leads are also stakeholders in this project. |
| **Project Success Criteria:**   * The application must be delivered by the end of October, 2023. * The application must be fully functional and meet all the functional and non-functional requirements. * The application must have a high level of user satisfaction, as measured by feedback received from the client. |