**Project Title:** WattWizards  
**Under the supervision of:** Engineer Muhammed Rushdy & Hassan Alaa / Mr. Sherief Ragab / Ms. Myrose Etman  
**Authors:** XOperations Team

**Introduction:**  
Electrical engineers and technicians often face challenges in achieving precision and efficiency in calculations, particularly in industrial settings. This research introduces **WattWizards**, a software platform designed to streamline electrical circuit analysis and computations. The application reduces errors, and incorporates features like online/offline workspaces, inventory and project management.

**Procedures:**  
The development of WattWizards followed a structured multi-phase approach. Initially, an Excel-based tool was employed but proved inadequate for complex tasks, prompting the creation of a Python desktop application with a GUI. To improve scalability and user accessibility, the project transitioned to a website utilizing Html5, Css3, and JavaScript.

The final iteration was developed as a React.js platform integrated with Node.js, Express.js, and Laravel for microservices and backend improvements. MySQL ensured efficient data handling.

**Data Analysis:**  
Surveys revealed a strong demand for an accurate, user-friendly tool, guiding the platform’s design. **WattWizards** demonstrates potential to revolutionize workflows in industrial and educational applications.

**References:**

1. **Power Factor Correction Solutions - IEEE Organization.**
2. **Conversion of Electrical Units - Iowa State University.**
3. **Electricity and Magnetism Equation Sheet - UT Dallas.**
4. **Power Cables - Al-Suwaidi Catalogue.**