Overtime Solicitation Project

My Capstone project took place at Kaiser Aluminum, a prominent player in the US aluminum product industry, promoting excellence across various sectors including Aerospace, automotive, general engineering, packaging, and defense. Kaiser Aluminum is composed of 14 facilities mainly located in the US. Trentwood plant in Spokane WA is where I did my internship.

The plant operates 24/7. To maintain uninterrupted production, it had to ensure swift replacements for any absent employees. This task is executed manually, necessitating individual calls to secure replacements. This manual approach is not only time-consuming but also prone to errors, leading to budget loss.

This is where my project came into play, aiming to mitigate human errors and streamline the process, thus freeing up valuable human resources for more impactful projects. The core objective of my project was to develop a cloud-based application utilizing power apps, enabling the seamless solicitation of employees for overtime work. Moreover, the application featured an automated calling function to efficiently inquire about their availability.

Utilizing cloud technology, I chose to implement my application using power apps due to its capacity to develop applications with secure connections to on-premise databases. Twilio was the facilitating calling function, a cloud-based service used for making calls from the cloud. This design choice was driven by the fact that if the application was on-premise, Twilio could make calls but would face restrictions on sending data back due to firewall safety concerns. For call programming, I used Azure functions, a serverless function capable of execution from the cloud.

To manage call list priorities, I used a dataset including employee details like names, phones, seniority, roles, secondary roles, charges, and shifts. Based on these data, the application determined eligibility for overtime. Following eligibility assessment, a sorting occurred based on Primary Jobs, Charges, Seniority, and secondary jobs to establish the order. Subsequently, an automated call was made to the employee, offering the option to accept or decline overtime.

To achieve my goals, I received amazing support and help from my coworkers who shared with me their experience and knowledge by showing how to tackle problems/bugs, technical difficulties, and handling meetings.

Presently, my application shadows with the manual process, serving as a parallel solution to validate its accuracy. The validation phase of all the functionalities is currently in process. The final implementation is planned to be done by the end of this month.