Scenario 2: Retail Sector

Below is the second scenario. Again, your job is to read through the scenario and figure out which type of hardware might best fit the client's needs.

The Scenario

PriceRight Singapore has one of its smaller outlets in the tiny neighborhood of Dover. Mr. Lin is the store manager—and like any good store manager, he wants to use Edge AI to help maximize his profit this year.

Most of the customers are regulars at the store. Mr. Lin has seen an average of about 200 people in the store during weekdays. On the weekends, this increases to between 500 and 1000. The maximum number of people visit the store during the holidays. Most customers spend 30-50 mins in the store during a single visit. Out of this, they have an average wait time of 230 seconds at the checkout counters. But on the weekends, the wait time can increase substantially. The average time spent is 40 mins at the store and 350-400 seconds at the checkout line.

The total number of people in the checkout queue ranges from an average of 2 per queue (during normal daily hours) to 5 per queue (during rush hours).

It is during rush hours that Mr. Lin has seen wavering sales. When wait times are short and checkout happens smoothly, he sees a jump in his revenue from 6 to 20%. However, if there is congestion at the checkout counter, his profits only go up to 4-5%.

Mr. Lin believes this problem can be easily solved by directing people to less-congested queues in the store, and he is interested in using an Edge AI system to do so.

Most of the store's checkout counters already have a modern computer, each of which has an Intel i7 core processor. Currently these processors are only used to carry out some minimal tasks that are not computationally expensive.

Mr. Lin employs close to 300 employees, including staff that work in transportation, on the store floor, and at the checkout counter. Although the store's annual sales are $7 million in food alone, the net profit is only about 1.1% of this. Mr. Lin also believes in giving fair employment and good wages. He pays his staff with proper salaries, along with substantial bonuses twice a year. As a result, Mr. Lin does not have much money to invest in additional hardware, and also would like to save as much as possible on his electric bill.

Here's what you need to complete before you move on from this page:

Task List

- Read through the scenario and identify relevant information.

- Identify which hardware (CPU, VPU, or FPGA) would potentially meet the client's needs.
- Note your proposed hardware in the proposal document and describe how this hardware matches with the client's requirements.