Jim Watanabe, assistant director of IT for Petrie Electronics, and the manager of the “No Customer Escapes” customer loyalty system project, was walking down the hall from his office to the cafeteria. It was 4 p.m., but Jim was nowhere close to going home yet. The deadlines he had imposed for the project were fast approaching. His team was running behind, and he had a lot of work to do over the next week to try to get things back on track. He needed to get some coffee for what was going to be a late night.

As Jim approached the cafeteria, he saw Sanjay Agarwal and Sam Waterston walking toward him. Sanjay was in charge of systems integration for Petrie, and Sam was one of the company’s top interface designers. They were both on the customer loyalty program team. They were having an intense conversation as Jim approached.

“Hi guys,” Jim said.

“Oh, hi, Jim,” Sanjay replied. “Glad I ran into you—we are moving ahead on the preliminary database designs. We’re translating the earlier conceptual designs into physical designs.”

“Who’s working on that? Stephanie?” Jim asked. Stephanie Welch worked for Petrie’s database administrator.

“Yes,” Sanjay replied. “But she is supervising a couple of interns who have been assigned to her for this task.”

“So how is that going? Has she approved their work?”

“Yeah, I guess so. It all seems to be under control.”

“I don’t want to second-guess Stephanie, but I’m curious about what they’ve done.”

“So you really have time to review interns’ work?” Sanjay asked. “OK, let me send you the memo Stephanie sent me”
You’re right, I don’t have time,” Jim said. “But I’m curious. It won’t take long to read the memo, right?”

“OK, I’ll send it as soon as I get back to my desk.”

“OK, thanks.” Jim walked on to the cafeteria, and he poured himself a big cup of coffee.

Case Questions:

You previously evaluated and revised the E-R diagram for this case; using what you have learned in this unit, convert the E-R diagram to database diagram that also includes field (with their data types), primary/foreign keys, and relationships. This diagram should be in the third normal form.