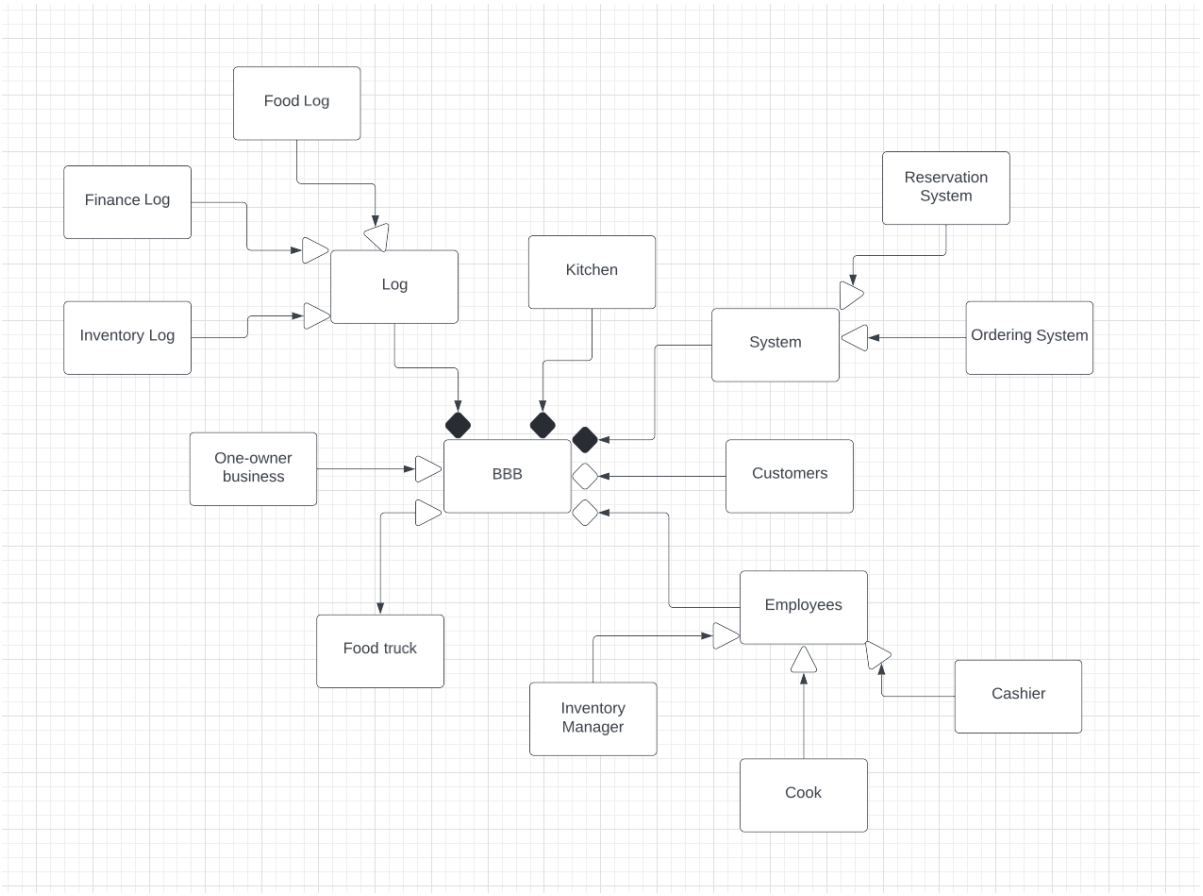
Team 9

Daniel Wang, Maria Zhang, Trinh To, Phuong Vu, Safwaan Taher

System Architecture

Class Project - Babs Burger Bonanza (BBB)

Domain Diagram



What motivated me to create this domain diagram is that I wanted to show the layout of BBB, and its logs, systems, and employees. The concerns I wanted to address are whether customers can make reservations, whether customers can order, and whether BBB has logs (inventory, finance, and food). All these concerns demonstrate my thoughts on the businesses' ability to manage while also being reliable and secure. My diagram has stakeholders (customer, owner, employees). One key architecture decision is BBB, which has logs. My rationale for logs is that inventory, finance, and food logs are the logs that BBB utilizes. This just shows that BBB does indeed have logs that track inventory, finance, and food, which is reflected in the domain diagram.

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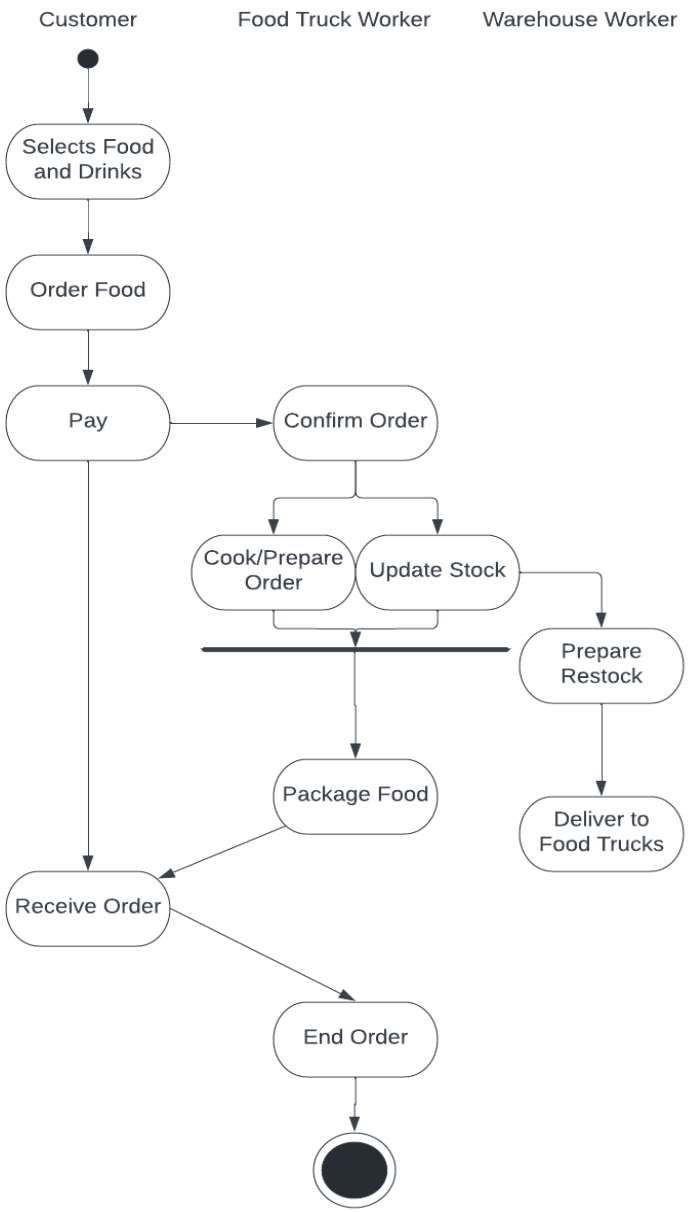
Activity Diagram



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Clearly displaying the end-users interaction and understanding what parts of the business can be automated motivated me to create this activity diagram. The activity diagram can also help stakeholders understand how the software affects the company. My rationale for splitting the activity diagram into 3 is to clearly show the different end-users' interaction with the product and the process of using the product. The split activity diagram helps with accuracy, credibility, and simplicity. The diagram shows how the software can help automate the interactions between the different end-users and help reduce miscommunication and errors.

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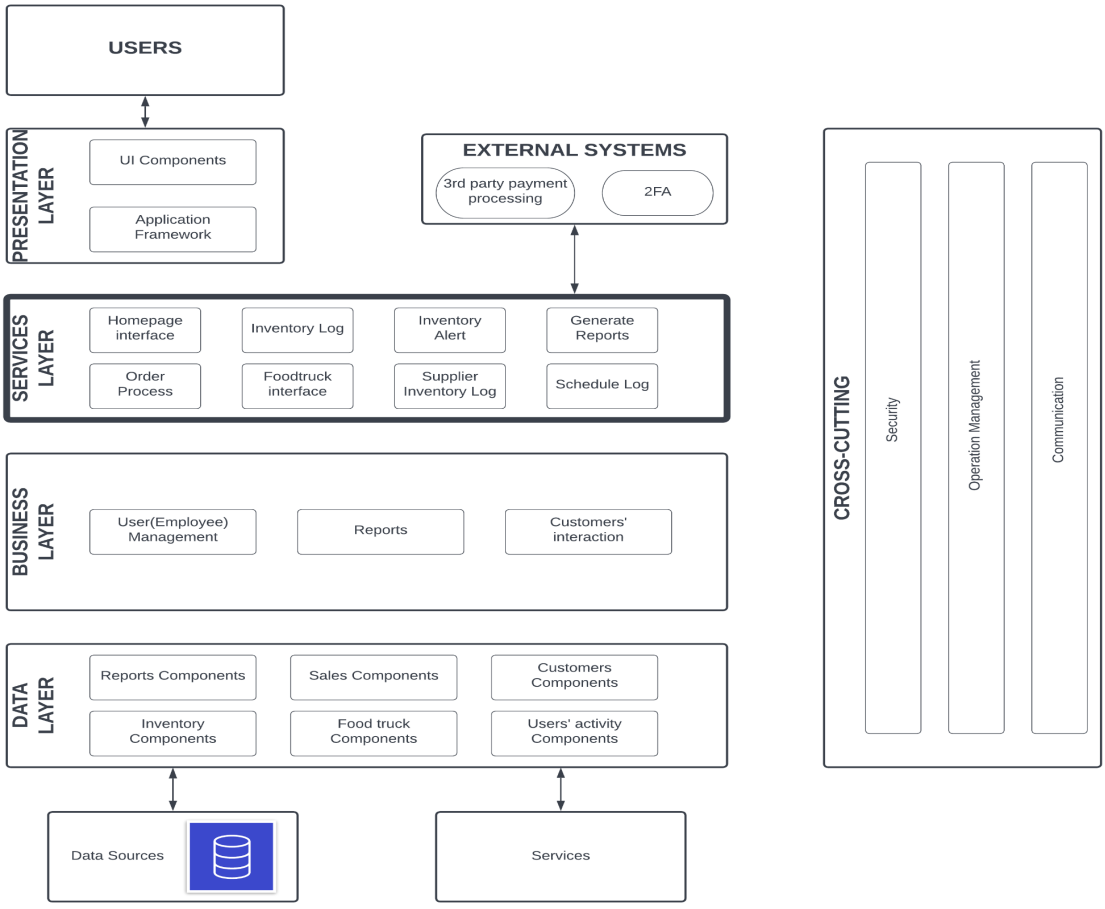
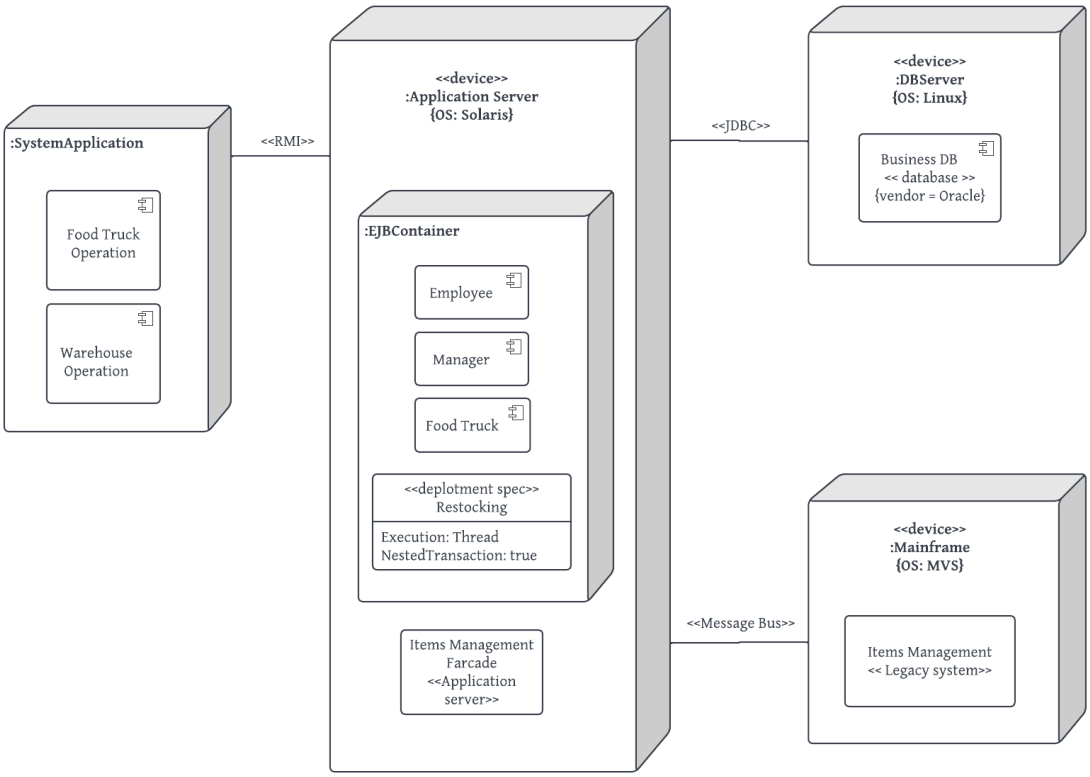
Layered Diagram



The concern of the company's, users', and customers' data security motivated me to create the layered diagram above. For this diagram, we would want to ensure that the application users' and BBB customers' data like their payment information, private address, company confidential data,... are processed and protected properly. One key architecture decision in my layered

diagram is that the application would implement a reliable third party to process customers' payment, and apply two-factor authentication (2FA) for users' login and most of the important decisions or activities in the system. My rationale for the third party payment process system is that a reliable and experienced third party would be able to guarantee that customers' payment process properly without information leakage. In addition, the 2FA process would be able to ensure that every system decision or activity is performed with proper permission and is recorded, which would help enhance system and data security.

Physical View Diagram



For this diagram, we want to ensure that we have enough system elements and that they are connected properly, as well as that the hardware is prepared for both warehouse and food truck operations, which are separate. This can help us with the concerns that food truck hardware can be more difficult to ensure the connections because they are on the road and can be in a

variety of network conditions. One key architecture that we have in the database to keep all of the business information is also important because we always want to secure our business and make the logging process a lot more efficient and accessible for various operations.

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SPICIER Scenarios - Safwaan

1. Tristan is a busy manager at Babs who likes to play soccer on the weekends. When he isn't working he's trying to grow his freelance photography hustle. Given the amount of time he puts into his hobby, its difficult for him to keep track of each of the employees work hours. Given the amount of new employees hired and as expansion occurs fro Babs, Tristan believes a database will help keep track of crucial information for employees such as a work hours, pay etc.

   <magic happens>

   The easy to use GUI of Babs of database saves Tristan a lot of time sifting through employees individual records. Calculating pay, keeping track of the employees who aren't hitting their hours, and ease of use has made the system a massive success in Babs. Now Tristan has less of a headache as he does not have to do these menial tasks, and as a result him and the employees are happier

2. Dale is a college student who runs a busy back to back schedule taking multiple classes for his degree in Microeconomics. As his work ends he takes off his uniform, cleans up and rushes off to class, after which he will spend most of the night finishing his homework. Every time before his shift starts Dale must check inventory and calculate supplies. Its his least favorite part of his work, as it can be tedious especially sometimes when Marie, a junior employee miscalculates the amount of bread. Dale wishes that there was a quick way to check, especially given a customer's order. While on the job writing down customer orders slowly become tedious on Dale as well.

   <magic happens>

   Logging into Babs app as an employee, Dale can clearly see how much inventory is available in his truck last updated in real time based on customer orders. He can quickly receive orders that will digitally be placed in a queue, and he won't have to write out anything. The intuitive UI and easy to use search functionality save Dale immense amounts of time that he now spends on cooking.

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3. Paige is an inventory manager for Babs. She is responsible for receiving and sending out deliveries for ingredients, tools etc to various food trucks. Paige spends a majority of her time handwriting information for individual shipments, reports on shipments and profit margins. This tedious work has become more difficult as Babs has expanded receiving more shipments and deliveries. Its hard to keep pace with the growing demands of Babs as Paige is one of the few managers in charge of this task.

<magic happens>

Using the new system all inventory is effectively automated and streamlined. After getting used to it Paige is finding it to be more efficient than ever, and has made her job nearly 35% faster. Once all the managers have adapted to this technology, the overall efficiency boost was monumental. Now managers have significantly more time spent dealing with staff and long term inventory tasks, instead of the lower level issues they previously dealt with.