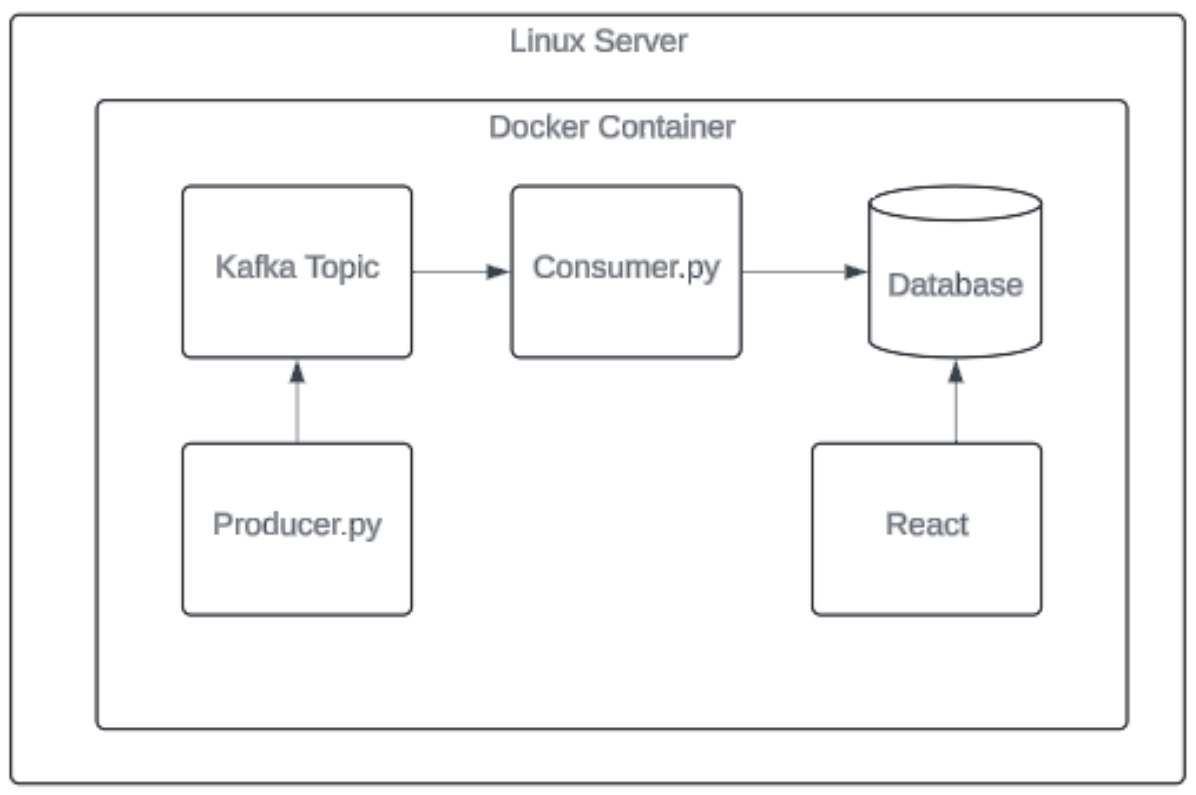
Fall 2024 GCPS Bus Monitoring Milestone 2

Team 2: Alex Baker, Sarah Fashinasi, Tyler Hood, Amali McHie, Jeffrey Sanderson

Team Recap

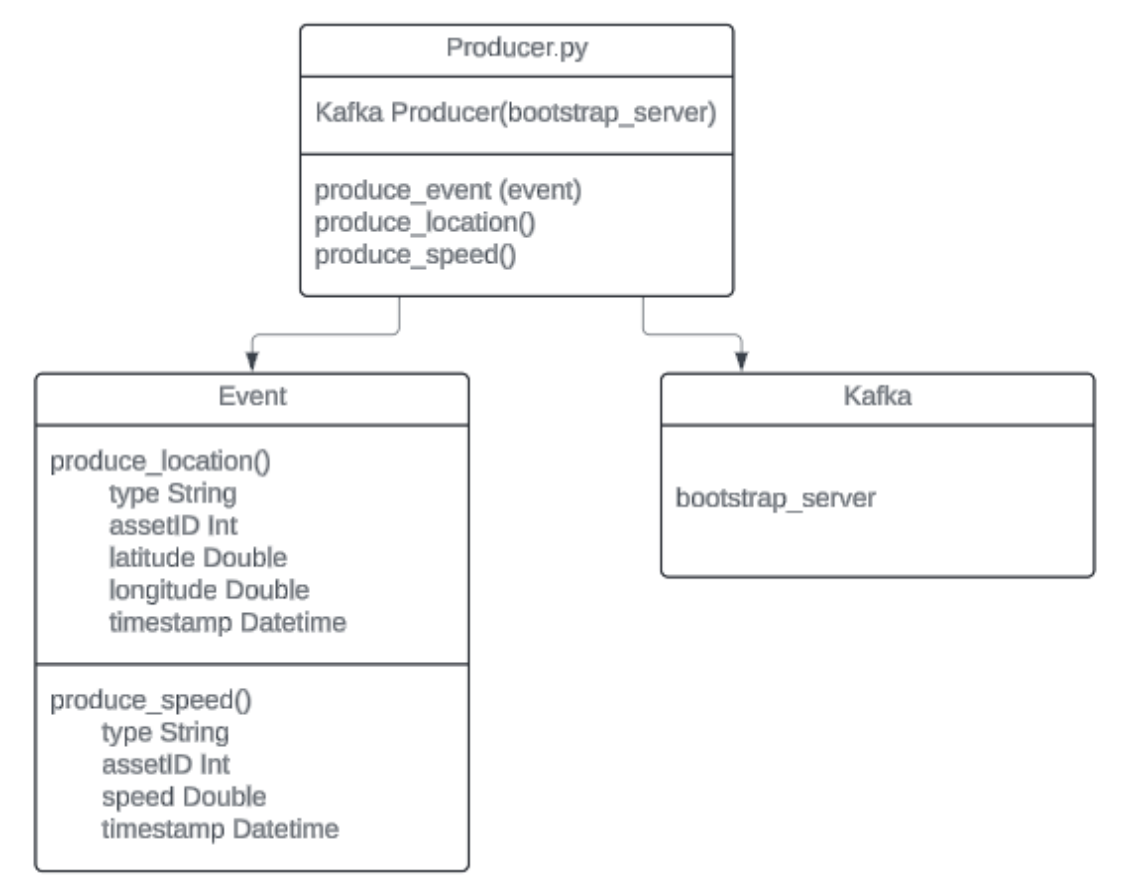
- Alex Baker
  - Python Developer
- Sarah Fashinasi
  - Team Lead
- Tyler Hood
  - Documentation and Management
- Amali McHie
  - Python and React Developer
- Jeffrey Sanderson
  - Database Configuration

Design Overview



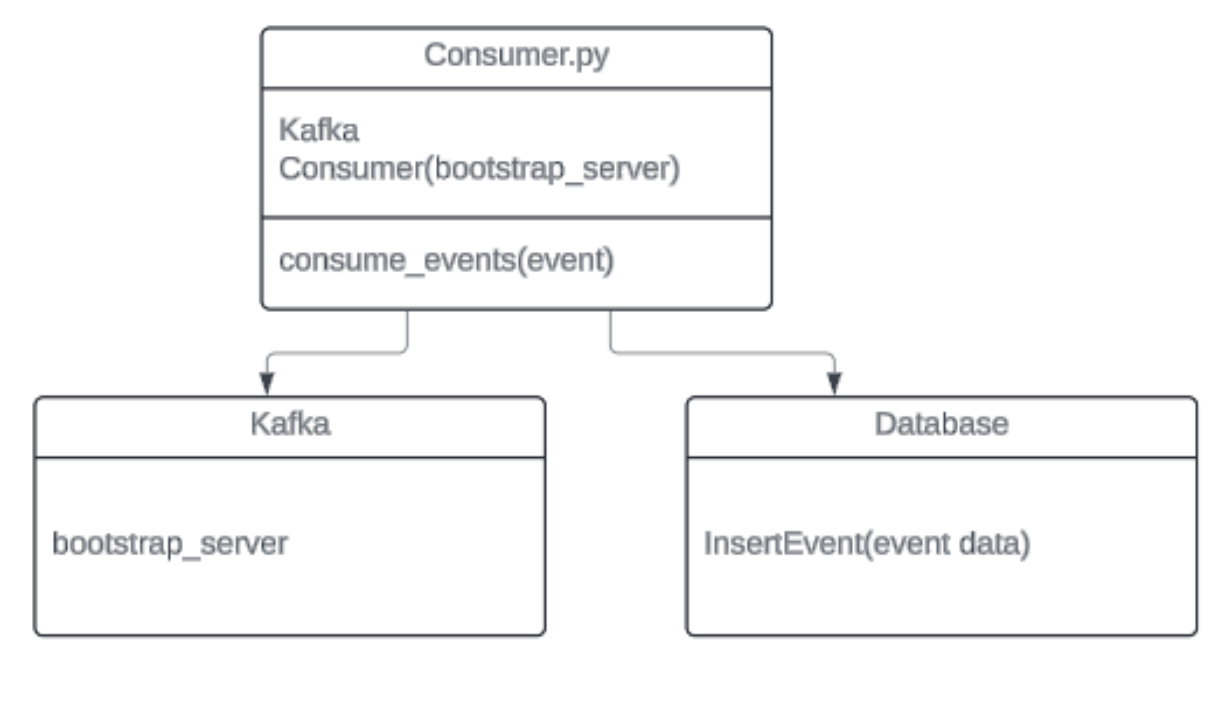
- Linux Server: RedHat9
- Kafka: 3.8.0
  - Zookeeper: 6.2.3
- Producer: Python 3
- Consumer: Python 3
- Database: Microsoft SQL Server 2022
- React: 18.3.1

Producer



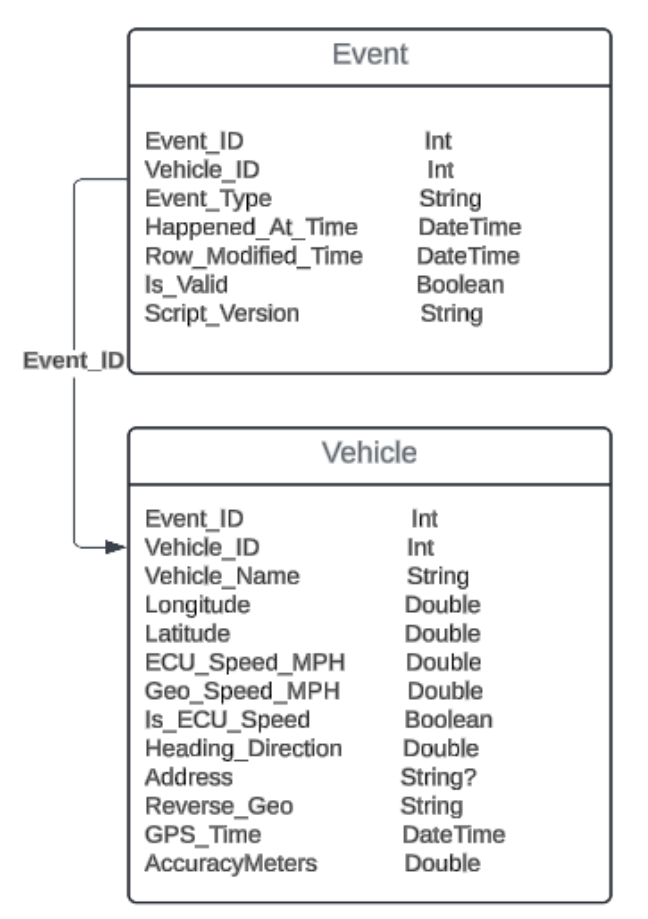
- Producer.py
  - Instantiates a Kafka producer
- Produce Event
  - Takes in asset location and speed to create a Json in Kafka
- Produce Location
  - Randomly generates longitude and latitude
- Produce Speed
  - Randomly chooses the speed of the bus
- Kafka
  - Represents connection the Kafka producer is making

Consumer



- Consumer
  - Instantiates a Kafka Consumer
- Consume Events
  - Awaits produced events and consumes them by creating a database entry
- Kafka
  - Represents connection the Kafka consumer is making
- Database
  - Shows the event insertion to the database

Database Design



- Event
  - Contains all information relevant to an asset tracking event. This table stores the information from tracking events.
- Vehicle
  - Contains all processed data from Consumer.py and the processor.
- Event_ID links the two tables for simple tracking between the data and the event that produced the data.

Progression Chart

Due Date	Goal	Description	Progress
9/8	Project Proposal	Basic project proposal with design overview	Done
9/16	Milestone 1	Add basic Kafka Producer and Consumer	Done
10/14	Milestone 2	Add database tables and event insertion	Done
11/4	C-Day	Deadline to submit @ 5:PM 9/4 Presentation 4-7:30PM 9/19	Incomplete
11/11	Milestone 3	Refine data processing, front-end, and containerize	Incomplete
11/17	Test Document	Test Document and User Manual	Incomplete
11/21	Final Presentation	Final Presentation (Week before Break)	Incomplete

Questions?