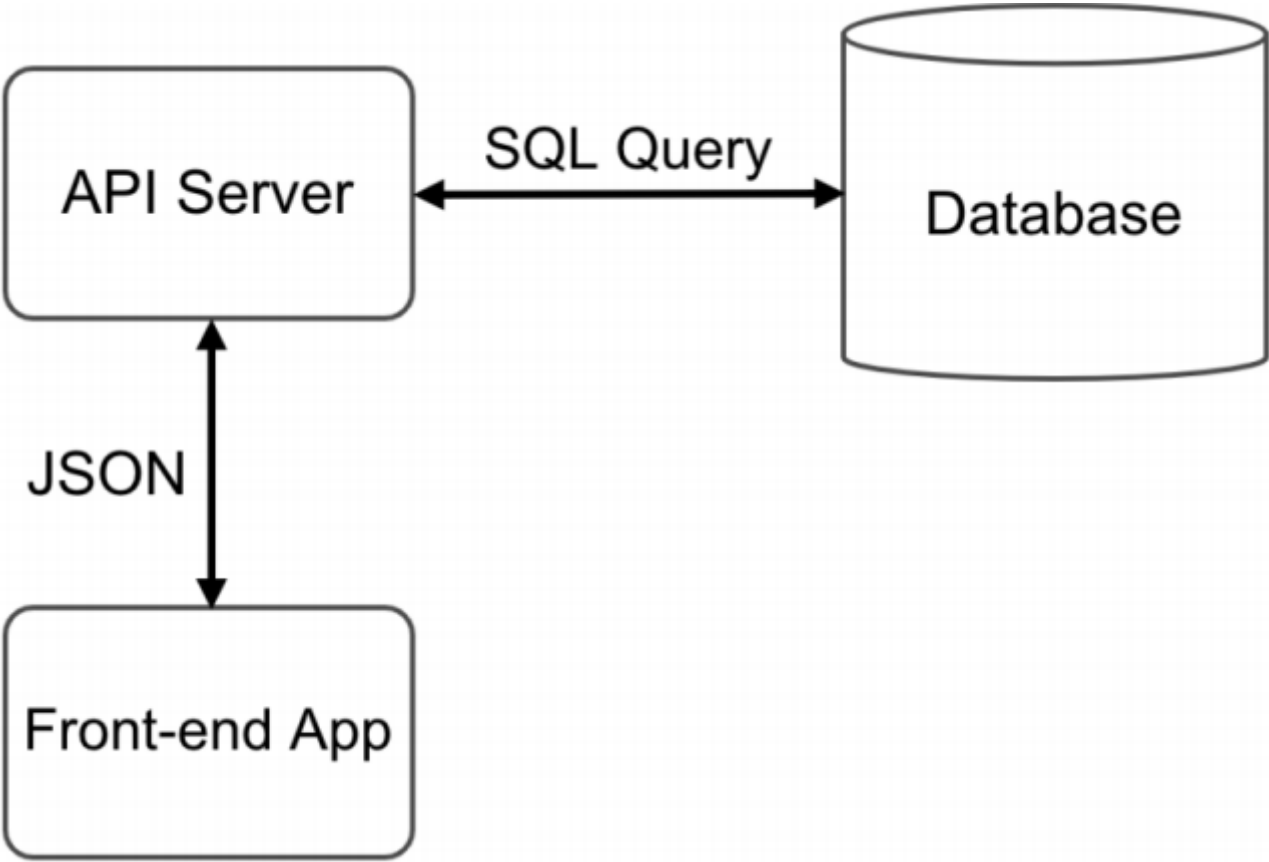


Building Tools

Category	Tools	Reason
Front-end Application	Vue.js	It is a modern library with many useful extensions
API Server	Django	Required by client
Database	PostgreSQL	PostgreSQL supports JSON data type
Database management	Datagrip	Its GUI interface is better than PGAdmin
Version Control	Bitbucket & Sourcetree	Required by client
UI/UE Design	Figma	Figma provides intuitive & multi-functional interface for UI/UE design

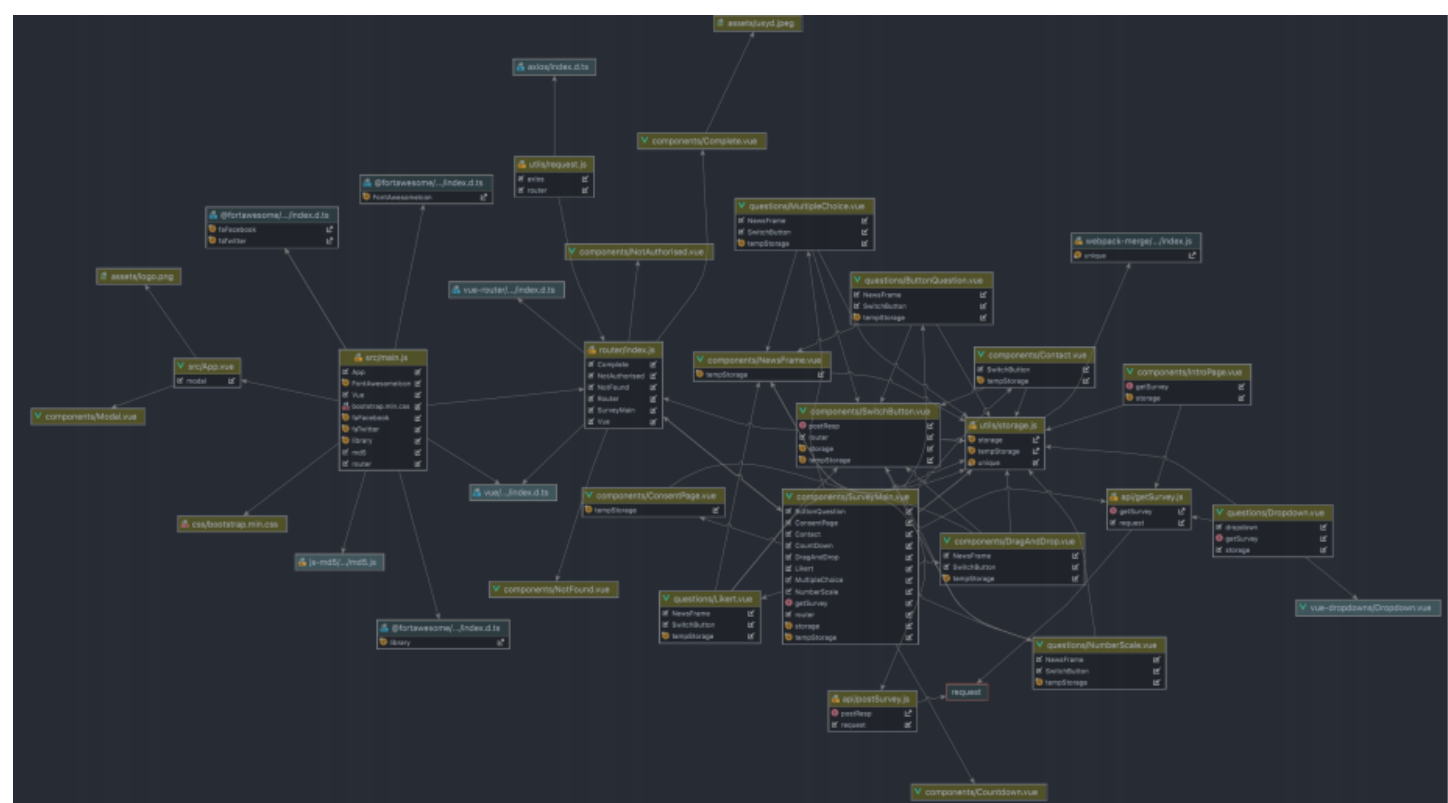
System architecture



The system is a typical web application with three independent layers: the data-persistent layer, the API

layer and the view layer, as shown above in the figure. All the three layers are de-coupled. The communication between API server and front-end Application is achieved by JSON data transmission. The front end application will request server data using json query asynchronously and the API server will respond with JSON data too. The API server will use the ORM model to run SQL query and communicate with database.

Front-end System Structure



The figure above is the UML diagram of the front-end system. Every question type is a Vue component, such as the button question, multiple choice question and so on. The SurveyMain component is in charge of combining different components into one page according to the data transmitted from group 1. For example, the SurveyMain may inject the news data into the NewsFrame component and the question data into the multiple choice question component. Next, index.js will invoke the SurveyMain component to display the survey to users.