

New Feature Proposal

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Visuals

Client Problem

- City of New York wants to promote their app and attract new users
- City needs a new feature that is well-thought out, scalable, and secure
- App needs to be deployed on AWS



User Problems



Adriana

27-year old teacher wants to improve her student's grades. She wants to look at past exam scores as indicators. She needs access to an exam scores database and a fast, easy way to understand the data.

Melinda

35-year old NYC tourist wants to visit different venues in Times Square in order to have a good time. She needs a fast, reliable way to search for venues in Times Square. Also, she wants her fun to be inexpensive.



User Business Cases



Adriana

Adriana's School District will pay for access to past exam scores that are quick and easy to understand. The cost is worth it in order to use the scores to improve her performance as a teacher and also the student's grades.

Melinda

NYC will offer coupons for users who search for Times Square venues using their website. Melinda will pay a small fee for this service. She likes to save money and finds this incentive worth it.



Technology

Adriana and Melinda need to be able to view and quickly digest what they are searching for. They need information fast and at their fingertips.

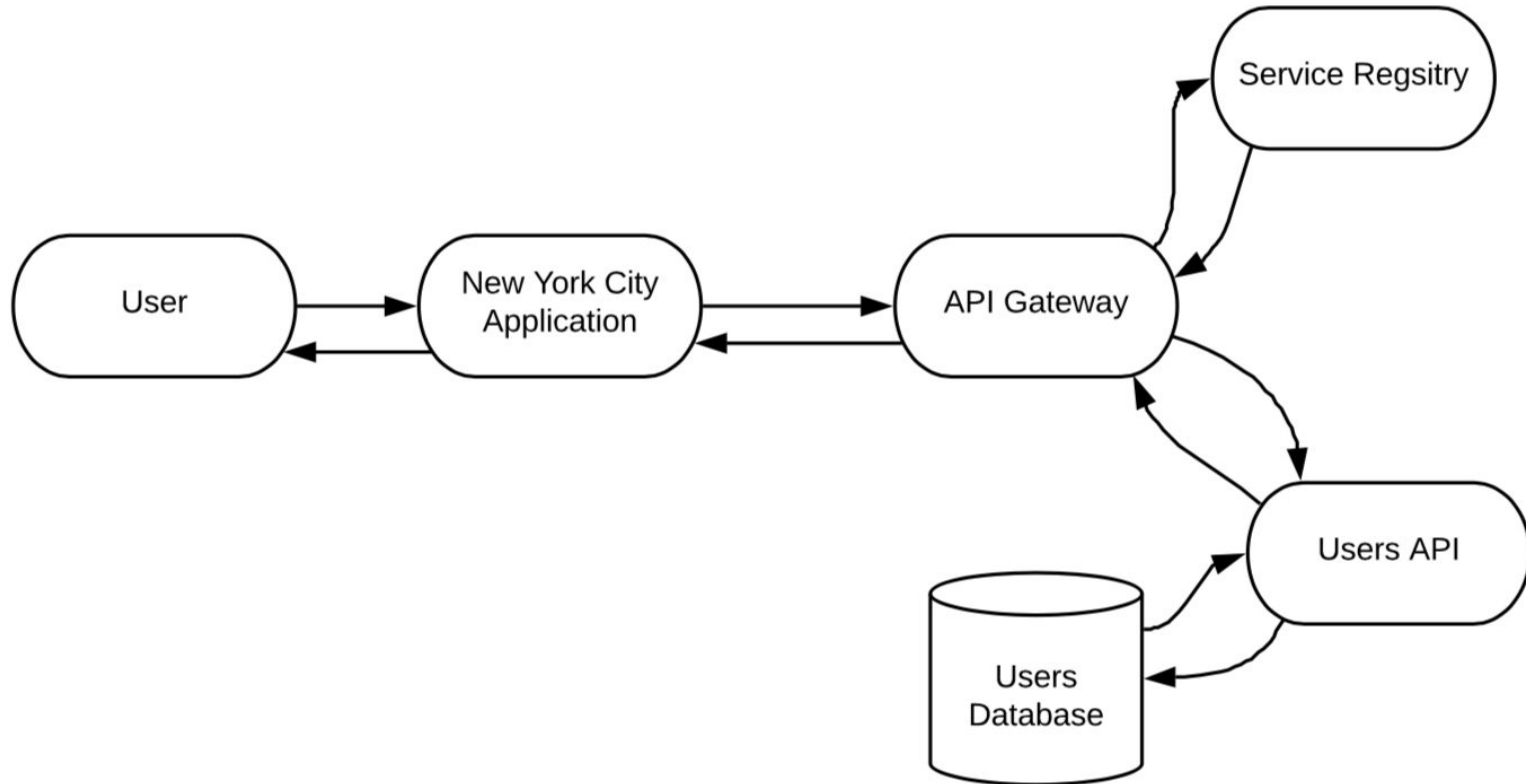
Therefore visuals displaying the information they want will attract them. Other search engines typically do not provide this extra information.



Technical Requirements

- Backend Spring Boot for user data management
 - API Gateway
 - Service Registry
 - Users API
- Frontend Angular for UI
 - View, Create, Update, Delete Users
 - User profile: username, first name, last name, password, phone, email
 - Past exam scores visual
 - Times Square venues visual

Application Architecture



Microservices vs Monolithic

Monolithic Application

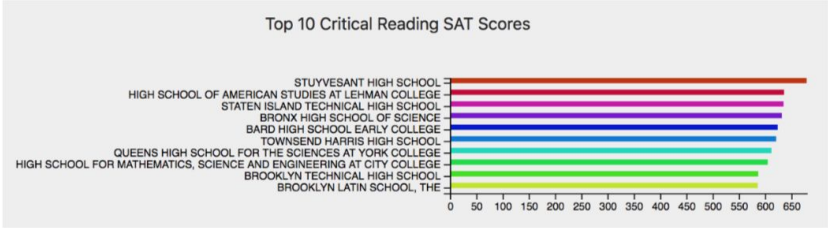
- Simple to develop, test, and deploy
- Too large and complex to fully understand and make quick changes
- Entire application must be redeployed on each update
- Difficult to scale
- Better for a lightweight application

Microservices Solution

- Splits application into smaller manageable services
- Breaks down the complexity
- Each service can be deployed and scaled independently

Preview

Past SAT Exam Scores



| Scores List | | | |
|---------------------|---------|------|---------|
| School | Reading | Math | Writing |
| High School A | 210 | 300 | 500 |
| Community College B | 500 | 320 | 515 |
| High School C | 300 | 328 | 512 |

Case Study

NETFLIX

- one of the earliest adopters of microservices
- one of the most well-known examples of a modern microservices architecture