

# SEOUL BIKE

Proposal

Team 7

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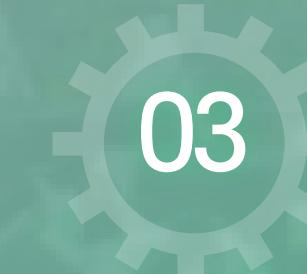


### Background / Necessity

Introduction to the real-world problem



### Purpose of the Analysis



### Specific Plan for Data Acquisition



### Formulation

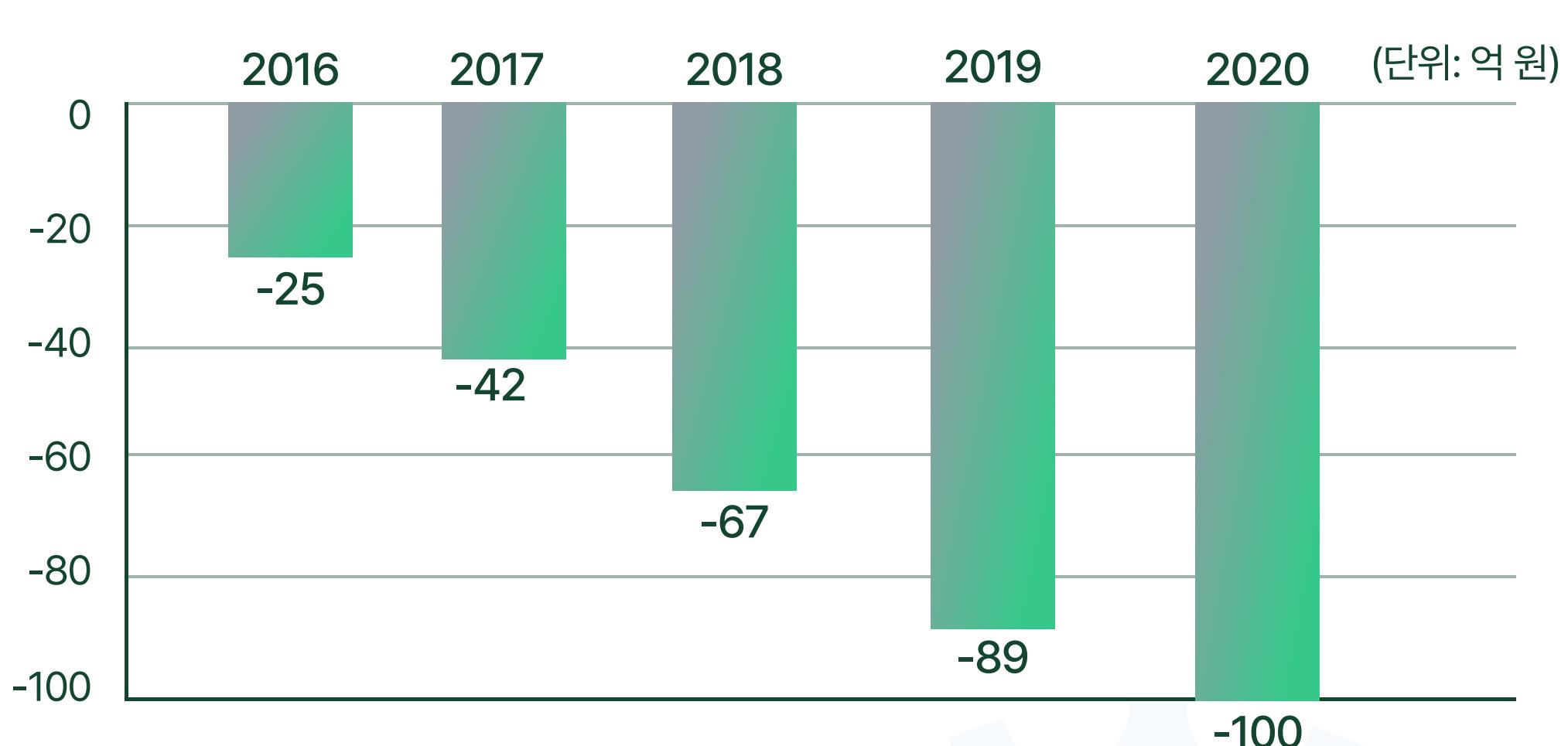
Expected methods to be used, etc.



### Expected Results and Impact

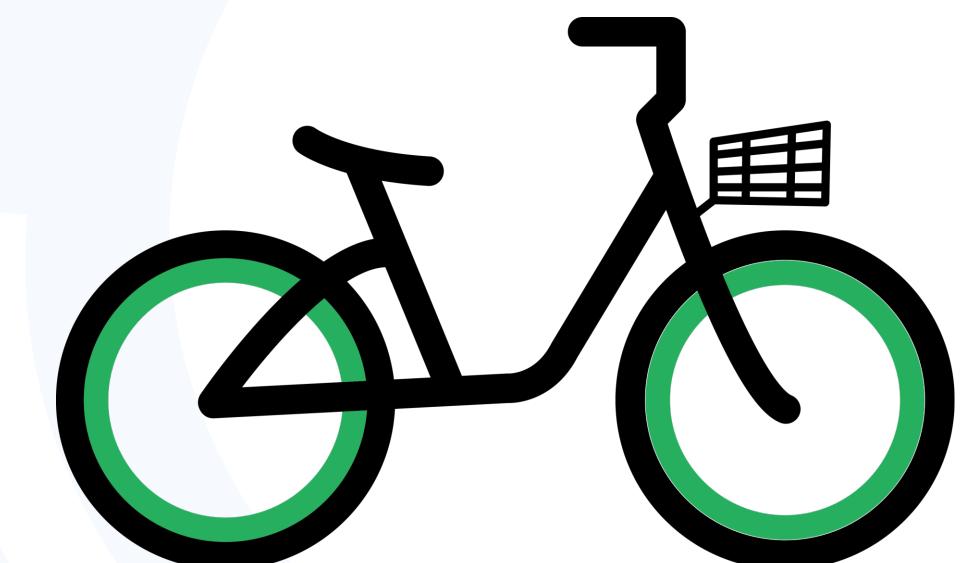
## Background/Necessity

Introduction to real-world Problem



### Losing a lot of money, Seoul Bike(따릉이)

According to the Seoul Metropolitan Government, the annual deficit caused by the project **increased from 2.5 billion won in 2016 to 10.3 billion won in 2021**. The deficit in the public bicycle business is not unique to Seoul. In some cases, local governments outside of Seoul operated a public bicycle business and suspended it due to deficits. According to the Ministry of Public Administration and Security, 70 local governments and public enterprises operate public bicycles in 2021, down 8 from 2017 (78).



## Purpose of the Analysis



# Deficit Reduction

# Specific Plan for Data Acquisition

Where do we get the Data?

## 서울열린데이터광장

서울열린데이터광장 provides a wealth of data related to public bicycles in Seoul. This dataset includes information on bicycle usage statistics, subscriber details, real-time rental information, station-specific usage data (daily and monthly), rental history, station information, and master information. With access to such diverse data, it becomes possible to gain insights into Seoul's bicycle usage patterns, station-specific usage trends, and the integration of public bicycles with other modes of transportation.

**Link** <https://data.seoul.go.kr/dataList/OA-13252/F/1/datasetView.do>

The screenshot shows a grid of five data cards from the Seoul Open Data portal, each representing a different dataset about public bicycle usage. The columns are labeled '공공데이터' (Public Data) on the right side of the grid.

- 서울시 공공자전거 이용현황**: 서울시에서 운영하는 공공자전거(따릉이)에 대한 기간별, 대여소별 이용(대여, 반납)현황 데이터입니다. (2023-05-15)
- 서울시 공공자전거 신규가입자 정보(월별)**: 서울특별시 공공자전거 월별 신규가입자 정보입니다. 2017년부터 2018년까지의 월별 신규가입자 ... (2023-10-26)
- 서울시 공공자전거 이용정보(월별)**: 서울특별시 공공자전기 이용정보입니다. 대여일자, 대여소번호, 대여소명, 대여구분(정기,비정기), 성... (2023-10-26)
- 서울시 공공자전거 대여소별 이용정보(월별)**: 서울특별시 공공자전기 대여소별 대여 정보입니다. 년월, 대여소번호, 대여소명, 대여건수 정보를 제공... (2023-10-26)
- 서울시 공공자전거 이용정보(일별)**: 서울특별시 공공자전기 일별 이용정보입니다. 대여일자, 대여소, 정기권유무, 성별, 연령대, 운동량,... (2023-10-26)

## Specific Plan for Data Analysis

How to use the data?

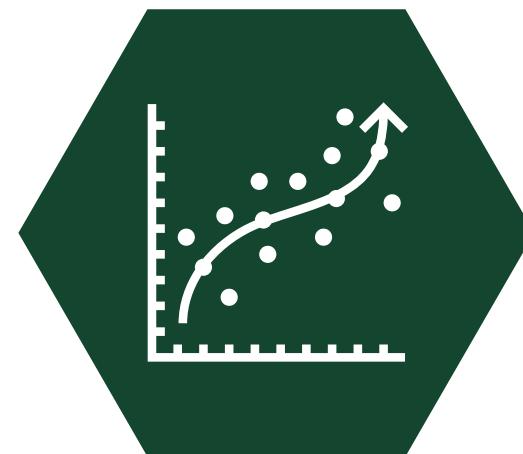
People usually go to a nearby rental place, if there aren't any "따릉이".

So, we're going to analyze the number of bike rentals around a place with 0 bikes left to see if there are a lot of people looking to rent at that place or not.



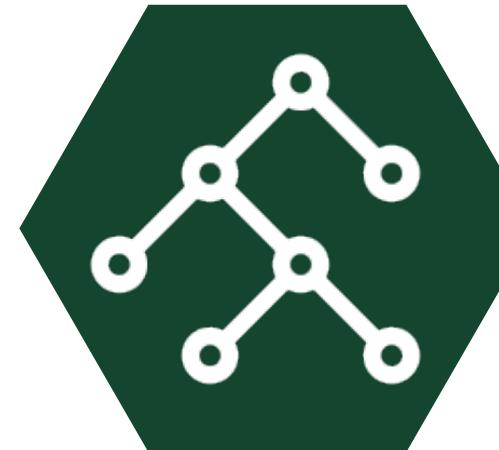
## Formulation

Expected methods to be used, etc.



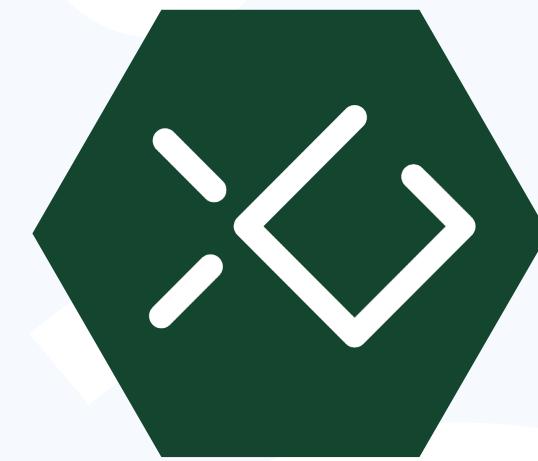
### Linear Regression

Linear regression identifies linear relationships within data and is used for prediction-related tasks.



### Random Forest

It is useful for both classification and regression tasks, enhancing model accuracy.

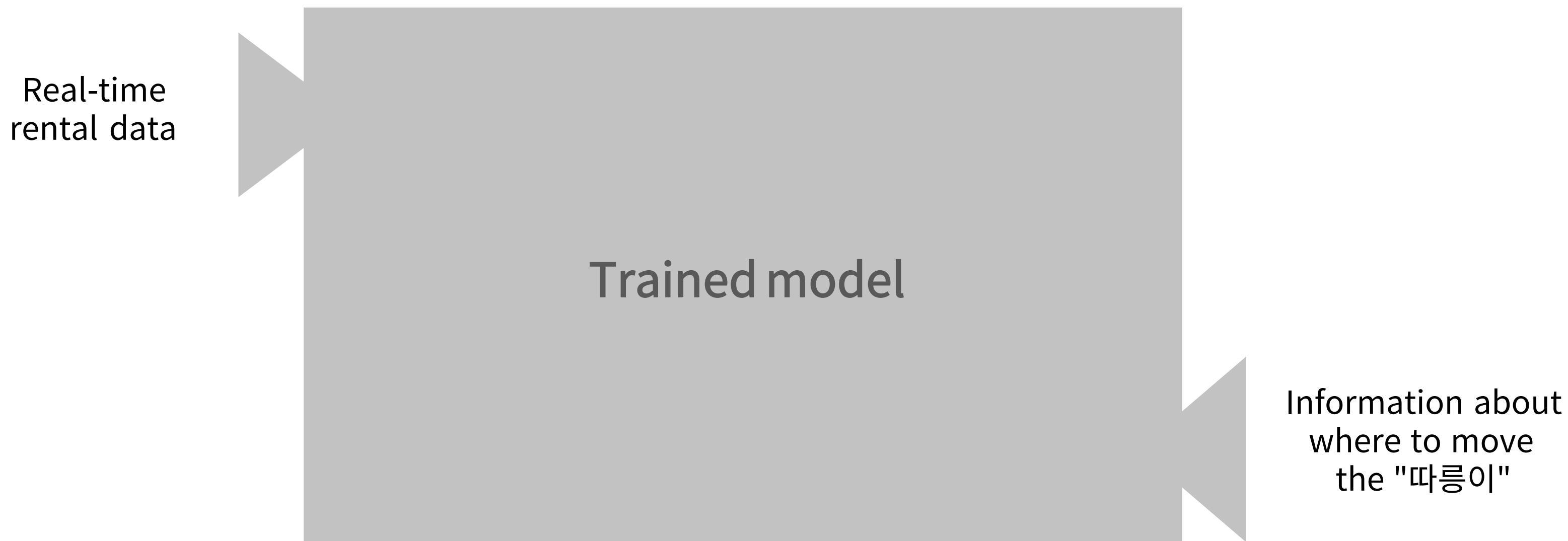


### XGBoost

It is useful for handling missing data and optimizing models, providing high performance and fast speed.

## Expected Results and Impact

How to use the data?



## Expected Results and Impact



**Increase in user numbers**



**Bicycle redistribution**



“**Deficit Reduction**”

*We aim to reduce the current financial deficits*



Thank you