

Introducing

Meteor

An **Insightful, Efficient and Responsive** App
for analyzing Hangzhou Metro

Insightful Data Analysis

Insightful Data Analysis

- Simple Wizard

Insightful Data Analysis

- Simple Wizard
- Query Data
 - Hourly, Daily or Custom Duration
 - Filter by Station or by Line

Insightful Data Analysis

- Simple Wizard
- Query Data
 - Hourly, Daily or Custom Duration
 - Filter by Station or by Line
- Route between Stations
 - Step-by-Step Guide
 - Real-world Station Name

Insightful Data Analysis

But, How Long?

Insightful Data Analysis

Flow Analysis

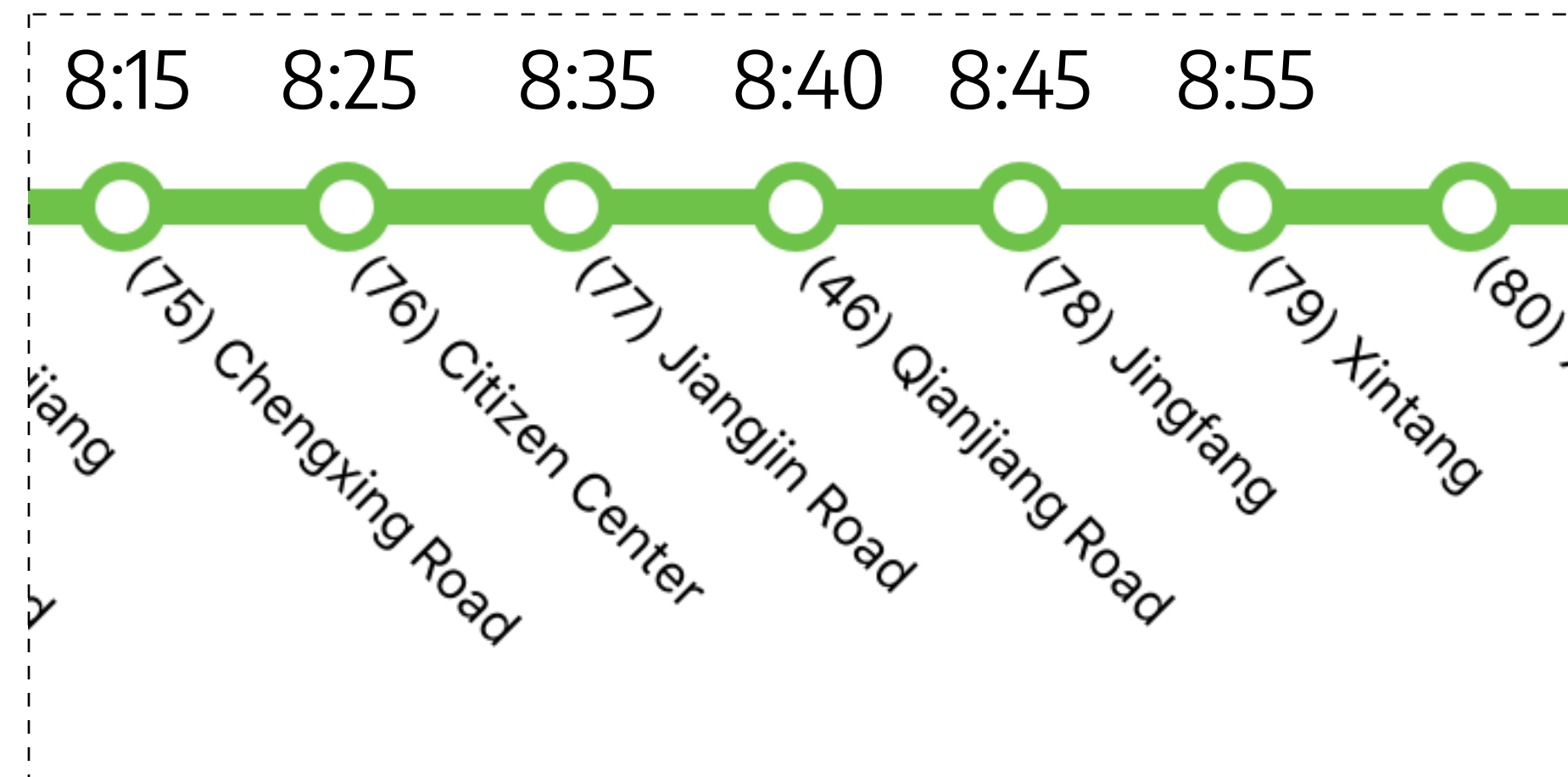
But, How Long?

Flow Analysis

- Analyze on a per-user basis
- Predict where they are in a given period
- Estimate flow pressure of each metro line

User Alice enter Wujiang Road Station at 2019-01-09 8:00

User Alice exit Xintang Station at 2019-01-09 8:55



Short Analyst Time

But, How Long?

Smart Travel Time

- Based on historical data
- kNN (k Nearest Neighbors) Classification
- Bucketing entry time to make analysis efficient

Smart Travel Time

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5 people enter Chengxing Road at 12:00pm, exit Xintang at 12:15pm

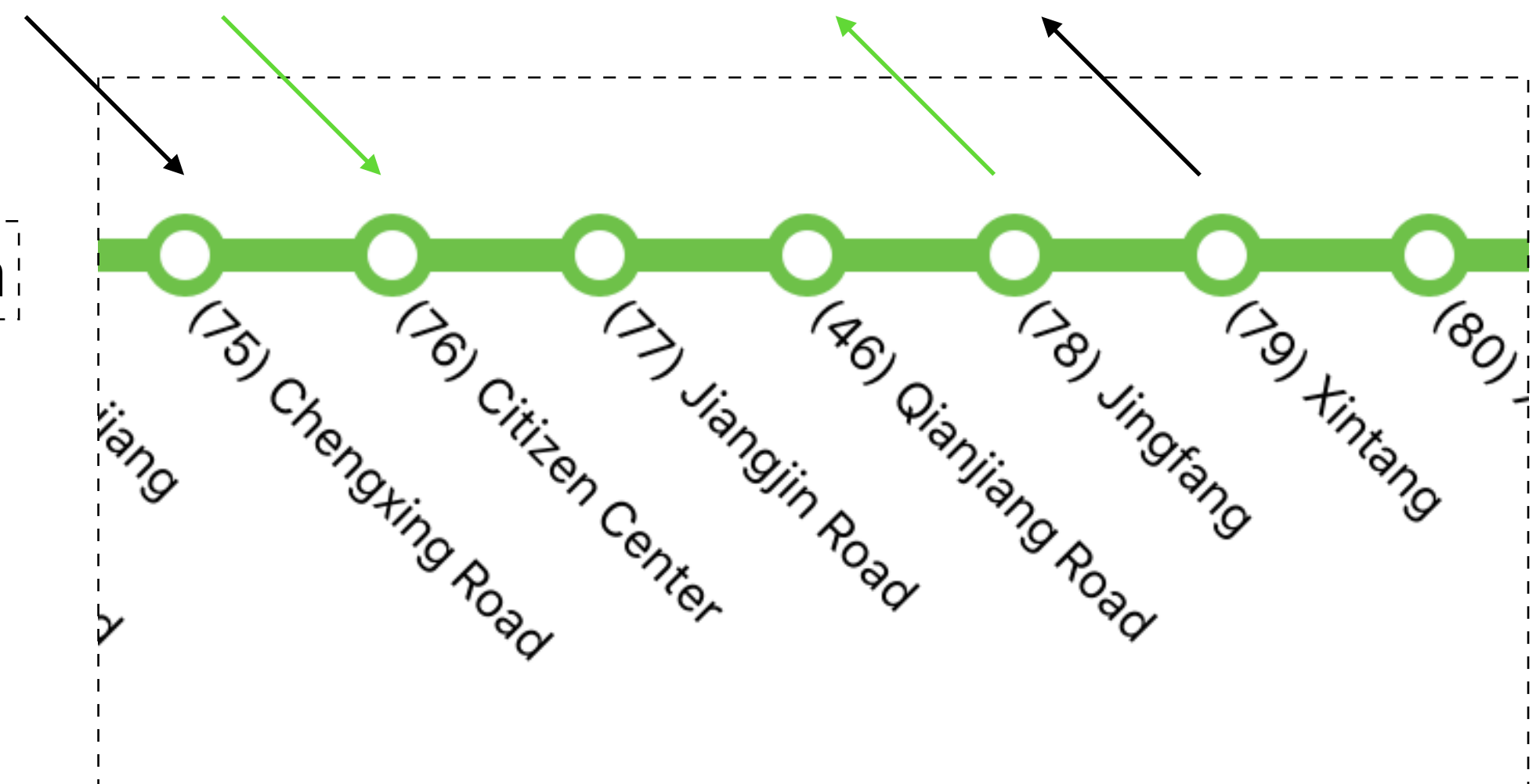


Smart Travel Time

- Based on historical data
- kNN (k Nearest Neighbors) Classification
- Bucketing entry time to make analysis efficient

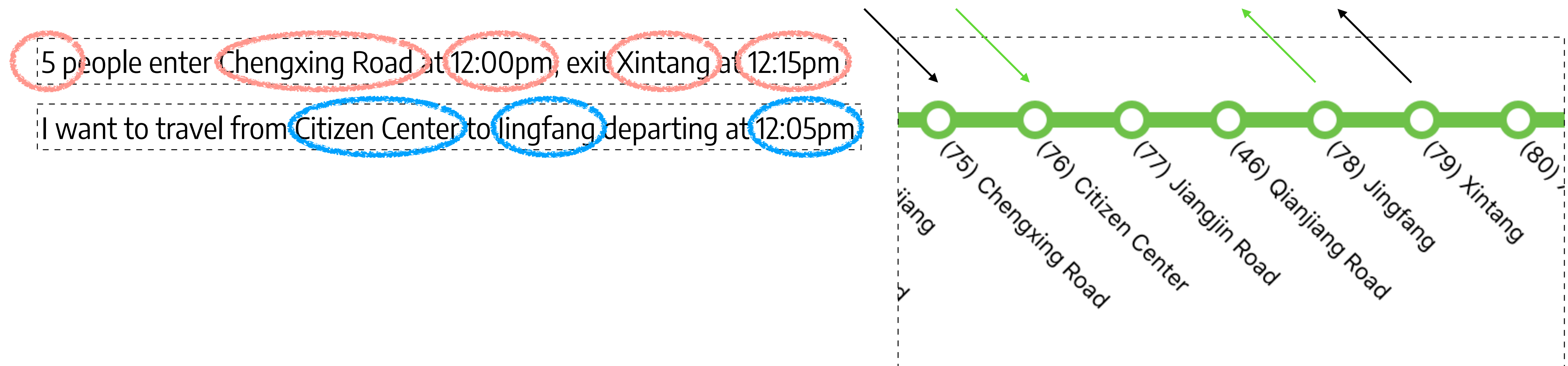
5 people enter Chengxing Road at 12:00pm, exit Xintang at 12:15pm

I want to travel from Citizen Center to Jingfang departing at 12:05pm



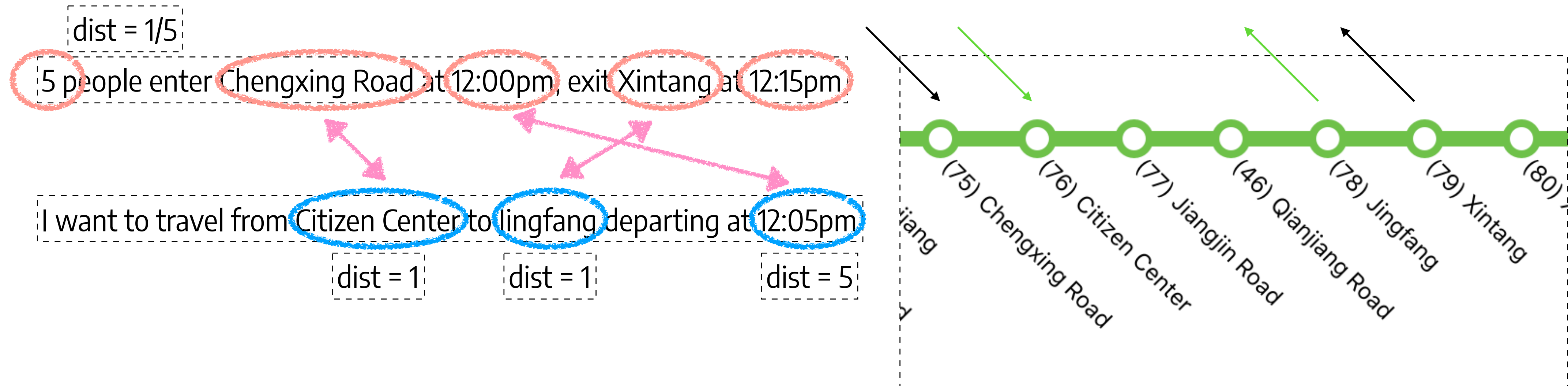
Smart Travel Time

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Smart Travel Time

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Flow Analysis & Smart Travel Time

But, How Long?

Meteor Adviser

Flow Analysis & Smart Travel Time

Efficient Data Analysis

Efficient Data Analysis

Initialize Database

Read Dataset

Read Dataset 2019-01-09

Read Dataset 2019-01-10

Read Dataset 2019-01-11

Flow Analysis

Flow Analysis 2019-01-09

Flow Analysis 2019-01-10

Flow Analysis 2019-01-11

Query

Query Entry / Exit 2019-01-09

Query Flow 2019-01-09

Plan Route

Efficient Data Analysis

Initialize Database

Read Dataset

Read Dataset 2019-01-09

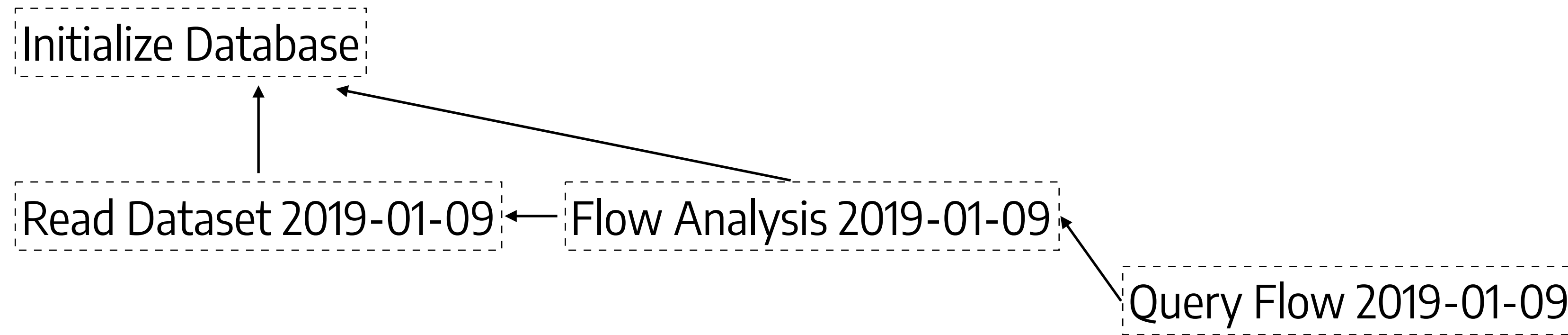
Flow Analysis

Flow Analysis 2019-01-09

Query

Query Flow 2019-01-09

Efficient Data Analysis

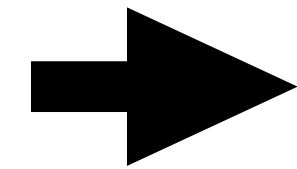


Efficient Data Analysis

Task Queue

Initialize Database

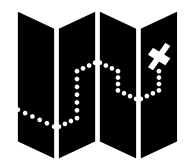
Read Dataset 2019-01-09



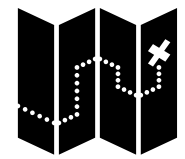
Flow Analysis 2019-01-09

Query Flow 2019-01-09

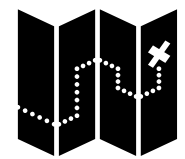
Efficient Data Analysis



Initialize Database



Read Dataset 2019-01-09



Flow Analysis 2019-01-09

Query Flow 2019-01-09

Efficient Data Analysis



Efficient Data Analysis

Task Queue

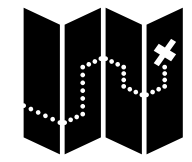
 Initialize Database

 Read Dataset 2019-01-09

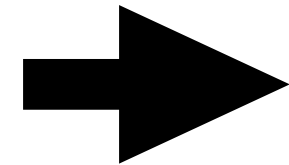
Query Entry / Exit 2019-01-09

Efficient Data Analysis

Task Queue



Initialize Database



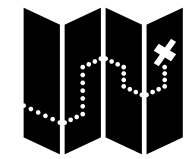
Read Dataset 2019-01-09

Flow Analysis 2019-01-09

Query Flow 2019-01-09

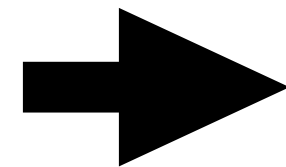
Efficient Data Analysis

Task Queue



Initialize Database

Clear possible garbage
Remove all data on date 2019-01-09



Read Dataset 2019-01-09

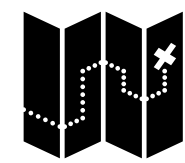
Flow Analysis 2019-01-09

Query Flow 2019-01-09

“Read Dataset 2019-01-09” is NOT journaled.
The task never run or crashed.

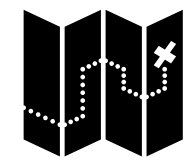
Efficient Data Analysis

Task Queue

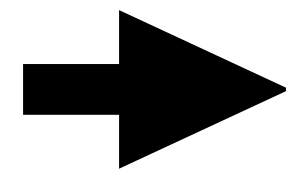


Initialize Database

Clear possible garbage



Read Dataset 2019-01-09



Flow Analysis 2019-01-09

Query Flow 2019-01-09

“Read Dataset 2019-01-09” is NOT journaled.
The task never run or crashed.

Dataset is safely stored in database.
“Read Dataset 2019-01-09” journaled

Efficient Data Analysis

- Lazy Loading
- Dependency Resolution
- Schedule and Report
- Journal
- Data Consistency on Abort

Responsive Data Analysis

Responsive Data Analysis

- Dynamically-Updated Chart

Responsive Data Analysis

- Dynamically-Updated Chart
- Magic Trackpad and Magic Mouse Integration

Responsive Data Analysis

- Dynamically-Updated Chart
- Magic Trackpad and Magic Mouse Integration
- Touch Bar Integration

Responsive Data Analysis

Meteor

An **Insightful, Efficient** and **Responsive** App for analyzing Hangzhou Metro
Now Available on GitHub

<https://github.com/skyzh/Meteor>

Meteor

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Thanks to the Qt Project

Thanks for Watching