Freeway Data Quality

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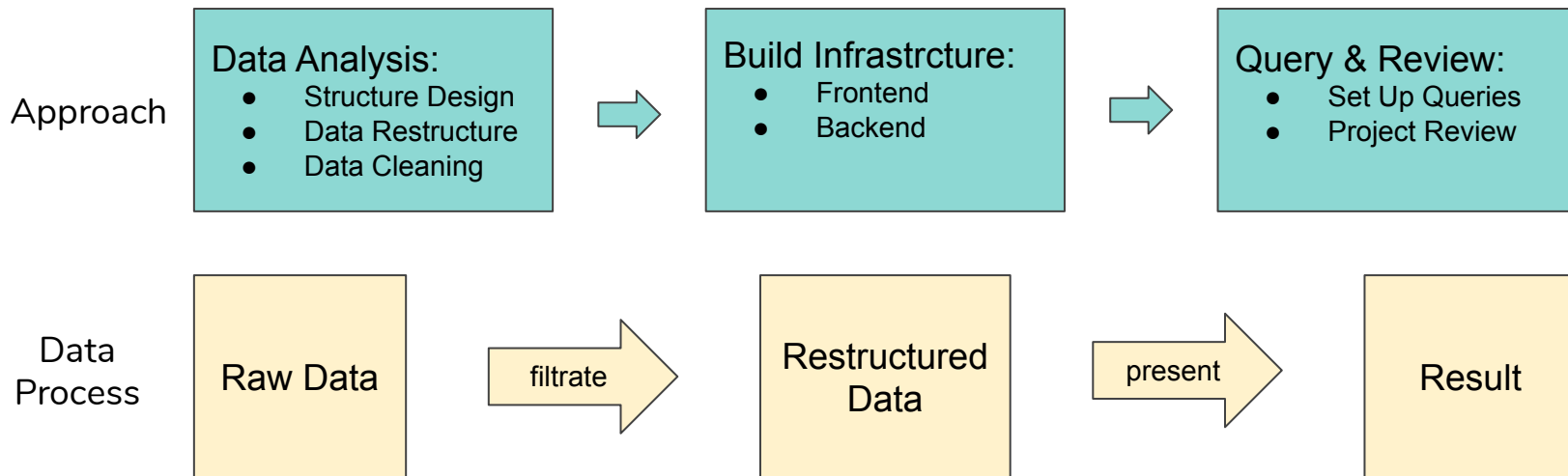
Project Goal

★ **Determining the malfunctional detector, by analysis the data from highway dataset**

★ **Dashboard of speed detectors information: location, statistics, etc.**

★ **Language: JavaScript, Python**

Project Development

Approach

Data Analysis:
- Structure Design
- Data Restructure
- Data Cleaning

Build Infrastrcture:
- Frontend
- Backend

Query & Review:
- Set Up Queries
- Project Review

Data Process

Raw Data → filtrate → Restructured Data → present → Result

Data Source: https://portal.its.pdx.edu/home

Data Restructure

- Convert relational data into nosql format
- Pre-process the Data

```javascript
//getTravelTime(req,res)
app.get("/traveltime/:location/:starttime?/:endtime?",async(req, res,next)=>{
    //getTravelTime(req,res)
    res.send(await getTravelTime(req,res))
  });

  //Station lation(req,res)
app.get("/lat/:location",cors(),asyncHandler(async(req, res,next)=>{
  res.send(await getStationLocation(req,res))
}));

//All the station name
app.get("/station",cors(),asyncHandler(async(req, res,next)=>{
  res.send(await getStationGeneralInfor(req,res))
}));

//get styation details
app.get("/details/:location",cors(),asyncHandler(async(req, res,next)=>{
  res.send(await getStationDetails(req,res))
}));

// Get all the id station volume
app.get("/volume/:location/:starttime?/:endtime?",cors(),asyncHandler(async(req, res,
  res.send(await getStationVolume(req,res))
}));

//Get total average speed and total volume
app.get("/sv/:location/:idlist/:starttime?/:endtime?",cors(),asyncHandler(async(req,
  res.send(await speedAndVolume(req,res))
}));




// Over speed in one station in period time
app.get("/speed/:idlist/:starttime?/:endtime?",cors(),asyncHandler(async(req, res,ne:
  res.send(await getOverSpeed(req,res))
}));
```

Project Demo

Lesson

- Not only data itself tell us the fact, whether data exist itself also tell us the fact
- Relational data convert to NoSQL data takes time, and the barrier between them reduce the efficiency of data processing
- Two stage require most coding: data processing & data presenting
- BTW: Working on something complex enough that we were forced to quickly learn new things

Thank You

Reference

Project GitHub: https://github.com/data-science-pdx/freeway-analysis

Data Source: https://portal.its.pdx.edu/home