# Software Architecture — Project Assignment

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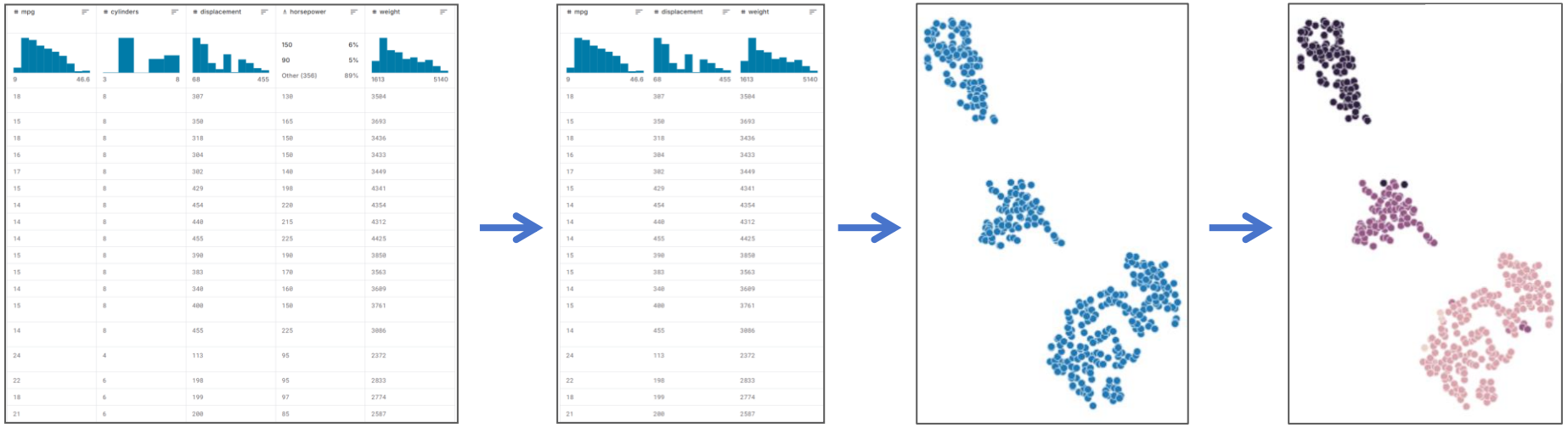
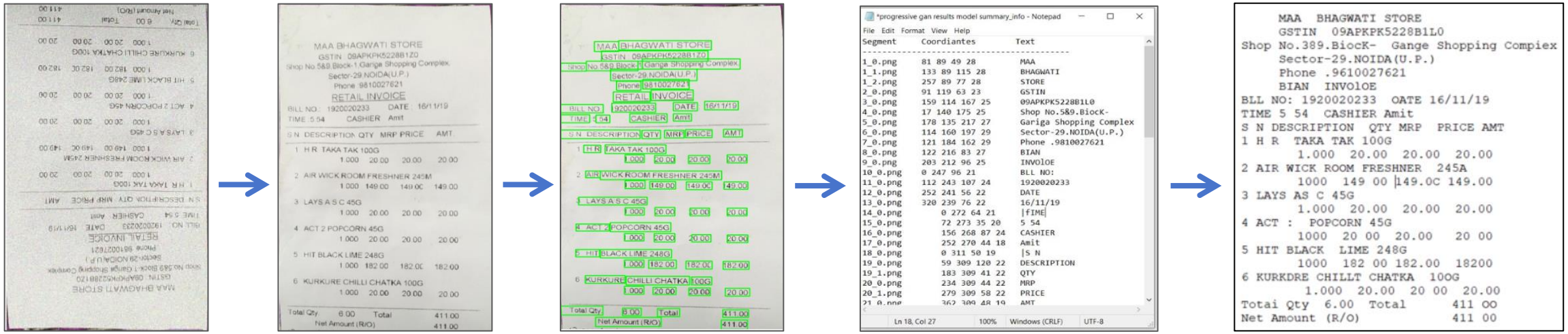
# Example I: Exploratory Data Analysis




Where is the data stored? Which parts are calculated on the server?
How to render the scatter plot?

# Example II: OCR




Pre-processing Text Detection Text Recognition Image Reconstruction

Which parts are placed on the server for calculation? Is there any difference between the server in the LAN and the server in the external network? Will it be faster to use parallel computing?

# Project Assignment

- **Part A** Select one web/mobile application to implement and test its performance on the browser/mobile device. The selected application should be compute-intensive and latency sensitive. Examples include but are not limited to:
  - exploratory data analysis,
  - hand gesture recognition,
  - face recognition,
  - image based object recognition,
  - augmented reality,
  - OCR and etc.

# Project Assignment

- **Part B** Please analyze the module structure of the application, and try to partition the modules between the browser/mobile device and a remote server (or cloud). Test the performance of the application under various conditions/settings, and show via experiments what are the factors and how do they impact the performance of application.

# Score Criterias

- Part A: 50 points;  Part B: 50 points.
- Final deliverables for scoring
  - Final Report (60%)
  - Demonstration (40%)

# Final Report

- Content of the final report should include:
  - **Title 标题**
  - **Abstract 摘要**
  - **Introduction 引言**
  - **[Main Body]**: application; performance metric and measurement; computation partitioning; system design, architecture; 正文
  - **Experiments and results**: state the experiment purposes, environment settings, and results with figures or tables 实验
  - **Conclusions 结论**
  - **References 参考文献**

# Final Report

- ***The module structure*** of the application should be included in your report
- ***Measure the application performance*** under as many settings as possible, e.g., different computations partitioning, input data, network connections (WiFi or 4/5G), bandwidth, or mobile devices/browsers.
- Beyond the experiment results, ***what are the insights*** you want to provide

# Demonstrations

- Each group has ***6 minutes*** to demonstrate the system and results
- Design the demonstration procedures, and make sure it ***proceeds smoothly and logically***
  - A checklist indicating what you will demonstrate is required
- Debugging the demonstrations at least ***10 times*** in advance, and make sure ***no failures occur***

# Time Schedule

- Send group information to 15863343113@163.com on **25/Oct/2024 (仅限当天)**
  - **所有小组成员（限制4-6人）姓名和学号，组长的Email和手机**
- Each group submits a *confirmation report to the* email 15863343113@163.com on **8/Nov/2024**. The report shows what application you select to implement, and the module structure of the application source codes.
- Each group submits the *Final report* and *source code* via emails to 15863343113@163.com by **29/Nov/2024**. (不接受晚交的作业)
- *Demonstration* is tentatively arranged on Week 12/13.