**Chapter 1**

**Introduction**

**Chapter 2**

**Background Theory**

1. Menu Data Source and Mass Menu Data

Bullet points:

1. what type of websites is the data source and why the project select them
2. what’s the feature of these websites
3. problem: massy, every website has different HTML, there is no universal way to extract data, how to solve this problem
4. Menu Data Cleaning Technology

Bullet points:

1. What is the expected data structure
2. What technology is suitable for the project and why select it
3. Menu Data Analysis Technology and Method
4. Bullet points:
5. What result the project want to get
6. What technology and why select it
7. What methods can be used in the analysis process
8. Result Visualization Technology

Bullet points:

1. What kind of result does the project want to present
2. What technology can help to achieve it, and what is the advantage of using it

**Chapter 3**

**Menu Data Cleaning**

1. Cleaning Procedure

Bullet points:

1. Extract data from HTML
2. Check the data structure and fix abnormal value
3. Result of Cleaning

**Chapter 4**

**Menu Data Analysis and Visualization**

1. The First iteration
2. The First Iteration Goal

Bullet points:

1. generate menu words dictionary
2. convert the shop location to latitude and longitude
3. visualise the distribution of menu
4. The First Iteration Result
5. Find out the cultural differences from the menu distribution
6. The First Iteration Evaluation
7. Differences from the actual situation
8. Problems
9. What causes these problem
10. How to improve
11. The Second iteration
12. The Second Iteration Goal
13. The Second Iteration Result
14. The Second Iteration Evaluation
15. The Third iteration
16. The Third Iteration Goal
17. The Third Iteration Result
18. The Third Iteration Evaluation

**Chapter 5**

**Future Work**

1. The current problem
2. Further improvement

**Conclusion**