Big\_Data\_Application Project

Data Analysis of food services in highway rest area

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1. Introduction

This project provides a thorough analysis of food services provided in Korea’s highway rest-stop. The data used in this project includes the official data inquired from Korea Expressway Corporation (<http://data.ex.co.kr/portal/fdwn/vi>

ew?type=ETC&num=R3&requestfrom=dataset#) and data collected from actual surveys.

The goal of the analysis is to provide a statistically meaningful result concerning the distribution of rest-area and variations of food preferences depending on consumer’s age.

2. Tables, Figures and Equations

2.1 Tables and Figures

**Table 1** contains 2 variables id and area. ‘Id’ indicates the primary key of area where the rest-stops are located. The area is divided into 9 parts grouped by states and variable ‘Area’ is the name of each grouped states.

Table 1 Area.

|  |  |  |
| --- | --- | --- |
| variable | type | annotation |
| id | integer | PRIMARY |
| Area | varchar |  |

**Table 2** contains 5 variables collected from real-life survey. It includes the age, name, sex and the category of food they mostly enjoy at rest\_stops.

Table 2 CustomerInfo.

|  |  |  |
| --- | --- | --- |
| variable | type | annotation |
| id | integer | PRIMARY |
| age | integer |  |
| Store\_type | integer | FOREIGN |
| sex | integer |  |
| Customer\_name | varchar |  |

Table 3 RestAreaInfo.

|  |  |  |
| --- | --- | --- |
| variable | type | annotation |
| id | integer | PRIMARY |
| name | integer |  |
| area | integer | FOREIGN |

Table 4 StoreInfo.

|  |  |  |
| --- | --- | --- |
| variable | type | annotation |
| id | integer | PRIMARY |
| Store\_name | varchar |  |
| Store\_type | integer | FOREIGN |

Table 5 StoreType

|  |  |  |
| --- | --- | --- |
| variable | Type | annotation |
| id | integer | PRIMARY |
| Store\_type | integer |  |

**Table 6** are mostly composed of FOREIGN KEYS from other tables. It act as a sum of rest of the tables.

Table 6 wholestore

|  |  |  |
| --- | --- | --- |
| variable | type | annotation |
| id | integer | PRIMARY |
| Ra\_id | integer | FOREIGN |
| Store\_id | integer | FOREIGN |
| Area\_id | integer | FOREIGN |

3. Related Work

The initial idea of the project was originated from an article[1] introducing top 10 rest-area delicacy around the country. We found out that despite the frequent use of rest-areas there weren’t enough data analyzed. So we used the official data and borrowed the idea to order the rest-area by sales. Also by modifying the top5 sales item of each rest-area we integrated sales data with customer’s age and their preferences together.

4. Requirements

5. System Design

6. Implementation

7. User Scenario

8. Conclusion

References

[1]https://www.korea.kr/news/cultureColumnView.do?newsId=148840288