

Low Level Design

Airbnb Data Analysis

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1. Introduction

1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the actual program code for the House Price Prediction dashboard. LDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

2. Architecture Description

2.1. Data Description

The Data set contains a single table with information on past booking data:

1. **room_id**: Unique identifier for the room/listing.
2. **survey_id**: Identifier for the survey.
3. **host_id**: Unique identifier for the host.
4. **room_type**: Type of room being listed (e.g., Shared room, Private room, Entire home/apt).
5. **country**: Country where the listing is located (NaN values indicate missing data).
6. **city**: City where the listing is located.
7. **borough**: Borough or district within the city (NaN values indicate missing data).
8. **neighborhood**: Specific neighborhood within the borough.
9. **reviews**: Number of reviews the listing has received.
10. **overall_satisfaction**: Overall satisfaction rating (out of 5) based on reviews.
11. **accommodates**: Number of people the listing can accommodate.
12. **bedrooms**: Number of bedrooms in the listing.
13. **bathrooms**: Number of bathrooms in the listing (NaN values indicate missing data).
14. **price**: Price per night for the listing.
15. **minstay**: Minimum number of nights required for a stay (NaN values indicate missing data).
16. **name**: Name or title of the listing.
17. **last_modified**: Timestamp of when the listing was last modified.
18. **latitude**: Latitude coordinate of the listing's location.
19. **longitude**: Longitude coordinate of the listing's location.
20. **location**: Geographical data in WKT (Well-Known Text) format, representing the location.

2.2. Data Extraction

Data Extraction from a csv file is a technique to automatically extract content and data from csv file using python. It is also known as data extraction. Data Extraction is made simple now days, we used python (Pandas) libraries for data extraction.

2.3. Data Transformation

In the Transformation Process, we will convert our original datasets with other necessary attributes format. And will merge it with the Extracted dataset.

2.4. Export Data from Database

Data Export from Database - The data in a stored database is exported as a CSV file to be used for Data Pre-processing.

3. Unit Test Cases

TEST CASE DESCRIPTION	EXPECTED RESULTS
Data Extract, Transform, Load (ETL)	Data Extract, Transform, Load (ETL) is working Properly.
Data Visualization	Data Visualization is working properly.
Statistical Analysis output	We are getting all required Statistical Analysis output.

