

# Low Level Design

## Analyzing Google App Store

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## DOCUMENT CONTROL

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1.0	20 April 2024	Utkarsh	Introduction and architecture defined

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## 1. Introduction

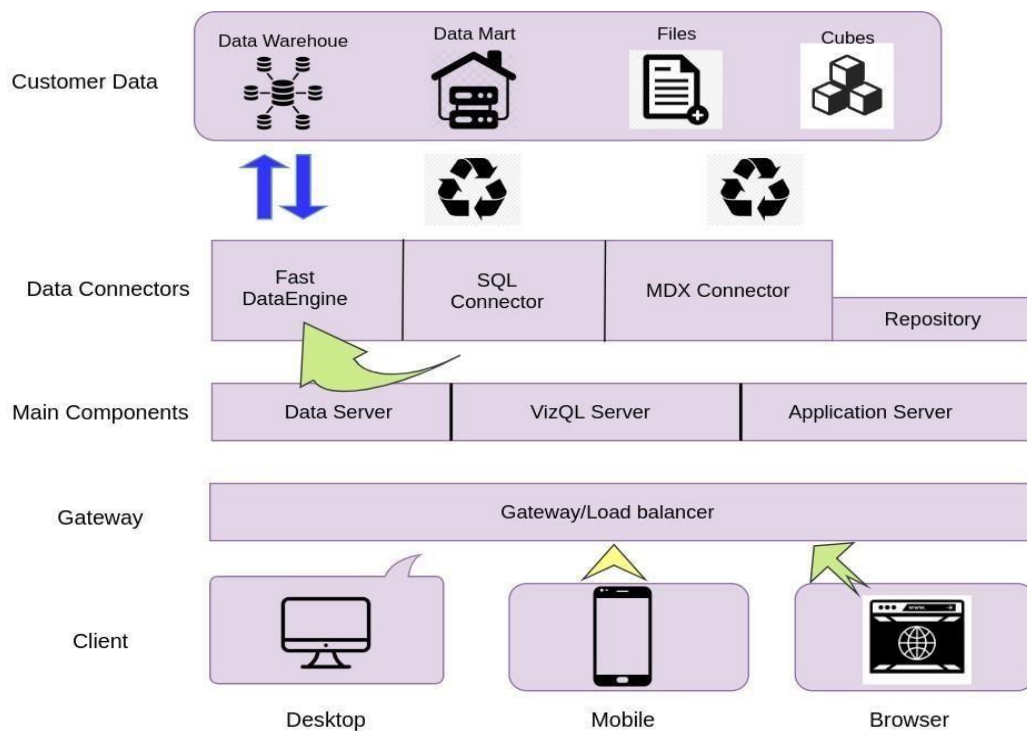
### 1.1 What is Low-Level design document?

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



### 3. Architecture Description

#### 3.1. Data Description

The Dataset contains various details about different google app store application. These details consist of Category, rating, reviews, size, installs, type, content, rating, etc.

1. Category: Category of app such as design, beauty, shopping, education, etc.
2. Rating: Rating of apps between 1 to 5 according to user experience.
3. Reviews: Reviews are the opinion of the apps given by the user.
4. Size: Size of the apps are in KB or MB.
5. Installs: Determines how many users installs a particular app.
6. Type: Type of app like free or paid.
7. Genre: Type of app such as shopping, game, tools, lifestyle, etc.

#### 3.2. Web Scrapping

Web scraping is a technique to automatically extract content and data from websites using bots. It is also known as web data extraction or web harvesting. Web scrapping is made simple now days, many tools are used for web scrapping. Some of python libraries used for web scrapping are BeautifulSoup, Scrapy, Selenium, etc.

#### 3.3. Data Transformation

In the Transformation Process, we will convert our original datasets with other necessary attributes format. And will merge it with the Scrapped dataset. For this we use libraries such as Pandas and NumPy to visualize the data.

#### 3.4. Data Insertion into Database

- a. Database Creation and connection - Create a database with name passed. If the database is already created, open the connection to the database.

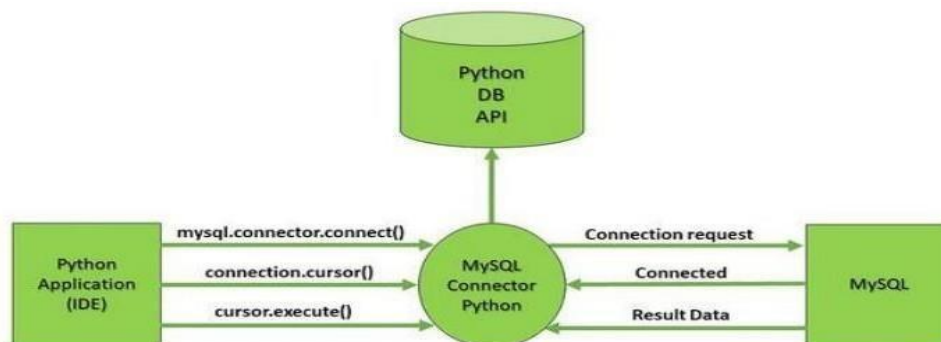
b. Table creation in the database.

c. Insertion of files in the table

### 3.5 Make the SQL connection and set up the data source

#### Step 1: Configuring Python

Python is a high-level, general-purpose, and very popular programming language. Basically, it was designed with an emphasis on code readability, and programmers can express their concepts in fewer lines of code.



To create a connection between the MySQL database and python, the `connect ()` method of MySQL Connector module is used. We pass the database details like Hostname, username, and the password in the method call, and then method returns the connection object.

```

C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.630]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\anand\AppData\Local\Programs\Python\Python39\Scripts>pip install mysql-connector-python
Collecting mysql-connector-python
  Downloading mysql_connector_python-8.0.23-py2.py3-none-any.whl (379 kB)
    | 379 kB 3.3 MB/s
Collecting protobuf>=3.0.0
  Downloading protobuf-3.15.0-py2.py3-none-any.whl (173 kB)
    | 173 kB 6.8 MB/s
Collecting six>=1.9
  Using cached six-1.15.0-py2.py3-none-any.whl (10 kB)
Installing collected packages: six, protobuf, mysql-connector-python
Successfully installed mysql-connector-python-8.0.23 protobuf-3.15.0 six-1.15.0
  
```

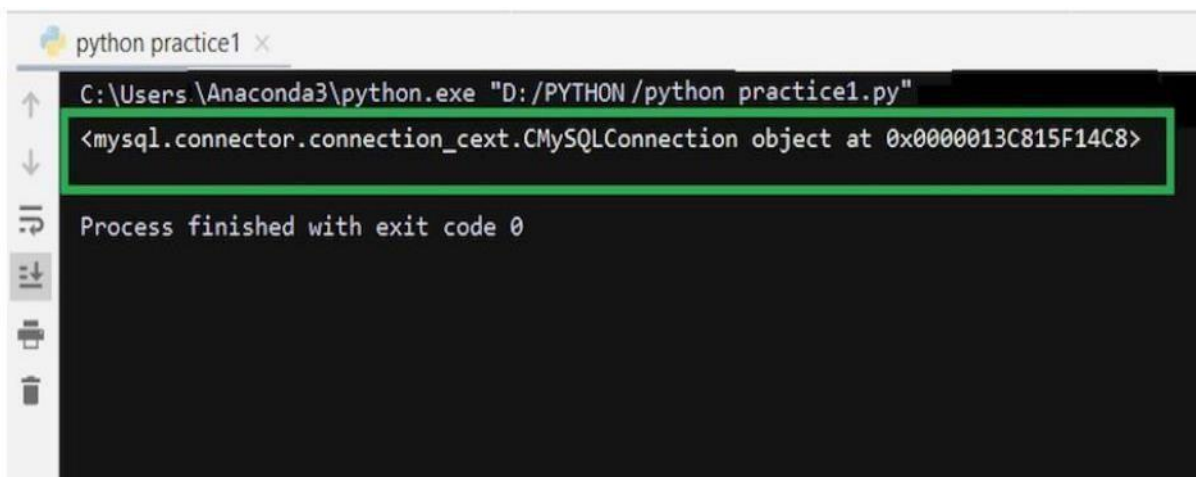
Following code to connect Python with MySQL.

```
) # Importing module
import mysql.connector

# Creating connection object
mydb = mysql.connector.connect(
    host = "localhost",
    user = "yourusername",
    password = "your_password"
)

# Printing the connection object
print(mydb)
```

Output:



```
python practice1 x
C:\Users\Anaconda3\python.exe "D:/PYTHON/python practice1.py"
<mysql.connector.connection_cext.CMySQLConnection object at 0x0000013C815F14C8>
Process finished with exit code 0
```

### 3.5. Import Data to Database

Data Import to Database - The cleaned data is imported as a CSV file to be used for Data Querying to get some answers of the requirements that a company may have , by running queries.