Database Model In Django Project

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Abstract—**This document explain database without sql queries in web application. Database that using a model can be found in Django project with SQLite database. Django that using python language can transform model into queries to save some record to relational table. With Django user can save database in web application without knowing sql queries before to use database.**

Keywords—Database, Django Project, SQLite

I. INTRODUCTION

Every application that built by developer using a database and now database are protected by copyright, but database development stop until relational model. Many engineer have a statement that database can't more effective and more efficient than relational model. Because of that development of database stopping until today.

Database using relational model is very effective, very efficient and very flexible, but using relational making developer must have knowledge and skill using sql queries. Big database making sql queries more complex and developer must very be careful to using sql queries so database can be persistent and consistent. Refactoring database can make sql queries change too, it's make developing application need more time and cost.

Django project implemented database using object model, that make database can be more simple and more effective.

II. DJANGO

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source[1]. Now many developer make new web application using framework to make easier and faster developing time.

Django is based on Python, which is a very popular programming language. Often compared to Perl, Ruby, and Java, it is a dynamic object-oriented language. Python strong support for integration with other languages and tools and comes with extensive standard libraries[2]. Python known with simple object oriented programming for web application, because of it, many developer learn how to use python and many company making IDE for python.

Django using MVT(Model, View, Template) that similar with MVC (Model, View, Controller) the model manages the data of the application and the business rules; the view is responsible for displaying data to the user through an interface; and the controller interprets user inputs and communicates with the model to make the appropriate changes [3]. Django very effective to use because many developer that using python make decision to using framework that support python language.

III. SQLITE

SQLite is a small, fast, embeddable database. What makes it popular is the combination of the database engine and interface into a single library as well as the ability to store all the data in a single file[2]. SQLite make easier database developer to maintain database, because SQLite using single file to save database, developer team can change database with difference DBMS easily.
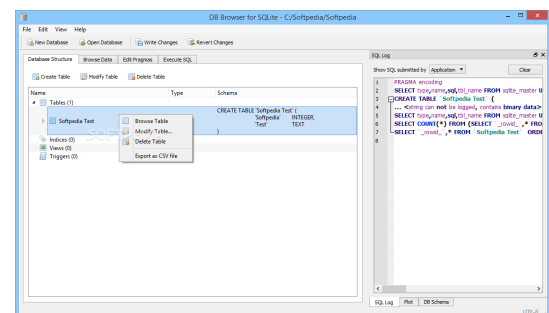

Figure 1. SQLite Manager

SQLite is an open-source embedded database system, and has small overhead, efficient search features, so it is especially suitable for mobile phone, PDA, set-top boxes and other electrical equipments, and has good running ability in consumer applications which can be downloaded[7]. SQLite very popular because it's very simple and can handle all paltform.

Unlike another product, SQLite does not have a client/server architecture[3]. Another product using client/server architecture, so more big the database more big server that run on it too. Because have not a server to run SQLite database can run in tiny process that can make computer more efficient to use.

IV. Database In Django

Django are support many database system like MySQL, Postgres, Oracle and SQLite. Which is using relational table for presentation of database. Django has ability to create a database schema from the model definition in a model.py file. Currently, Django does not have a tool for database migration; however, Django developers are now working on this problem trying to find the best solution. The advantage of Django is easy integration with legacy databases.

Django ORM's ease of use, similar syntax to the rest of Django, and ability to handle 90% of SQL queries, makes getting started with Django easy. However, Django's ORM does not handle edge cases and complex queries well, and one has to write SQL by hand to make it work. SQLAlchemy handles many of these edge cases already, and it has been the Python standard for Object Relational Mapping[4]. Django make some query to save object using object mapping to relational model so django not use queries to perform the database.

```
if request.method == 'POST':
    name = request.POST['name']
    worker = Worker(name=name, complaint=complaint, division=div)
    worker.save()
    complaint.log_change(
```
Figure 2. Django save to database

Acknowledgment

Django is a framework for python that today the most popular programming language in the world. Django very simple and easy to use because have MVT architecture. Django using SQLite to save the database, but SQLite only place to save the database. Django does not performing sql queries because django have SQLAlchemy and ORM to make object mapping to relational model. Django make some new database technology however just only how to save in code to save the database.

References

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