Design and implementation of web based on Laravel framework

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Abstract: With the traditional framework design methods to design web, resulting in large limitations, time-consuming and other issues, for such problems, this paper presents the design and implementation method of a web based on Laravel framework, Laravel make the development process is standardized, processing some non-business logic relationship automatically. This paper designs and implements a simple Laravel model, which achieved automated processing for part of the design. The experimental and simulation proved, web design based on Laravel framework, has scalability and robust scalability, so as to improve the developing efficiency.

1 Introduction

With the extensive application of Web technology, many companies have urgent requirements to build their own Web business systems quickly and efficiently [1]. However, a high-quality application depends on the support of well-designed system structure. How to correctly apply the core technology to design and build a stable, scalable and reusable Web application system structure is the challenge we face [2]. Generally, the traditional framework design method is too simple, resulting in large limitations, time-consuming and other issues, for such problems, this paper presents the design and implementation method of a web based on Laravel framework, Laravel make the development process is standardized, processing some non-business logic relationship automatically, allowing programmers to focus on implementation of business logic [3.4]. This paper designs and implements a simple Laravel model, which achieved automated processing for part of the design. The experimental and simulation proved, web design based on Laravel framework, has scalability and robust scalability, so as to improve the developing efficiency [5.6].

2 the principle of web design based on Laravel framework

Laravel architecture based Web applications is based on multi-layer. In the Web technology of three-tier structure, the database is not a direct service to each client, but connecting to the Web server, so as to achieve dynamic, real-time and interactive for customer information services. This function is achieved through server applications created by CGI, ISAPI, NSAPI, and Java. Web server acts as "proxy" for client, also a client for database. It will integrate information from different sources and different formats together into a unified interface to the client browser.

On the basis of Laravel framework and general data manipulation persistence framework, extending Laravel core components and labels and intergrating with generic data manipulation persistence framework. The layered structure of Web application framework as shown in Table 1

Table 1 The layered structure table of Web application framework based on Laravel framework

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First layer	Second layer	Third layer
Laravel core component	Laravel label extension	Batch Query for Analysis
extension		page
Laravel framework	Persistence layer of	Common data persistence
	database	framework

Among them, the common data operation persistence framework including data collection and data query class table, and provides function of data manipulation, database access related components. Once the data model is determined, and the data model can be added, deleted, modified, query, saved, finally, completed with the common data operation persistence framework.

If demand changes, as long as the corresponding data model and the corresponding configuration need to be changed.

The data structure of data sets can be statically defined by data set definition components, which can also defines the mapping relation between data sets, data query and the stored procedure.

In Laravel framework, the XML method is mainly adopted for web design. Extensible Markup Language (XML) is a markup language of platform-independent, self-description and structured. With XML to describe the metadata structure and semantics of the data set, XML of data sets stored as XML documents directly, in order to facilitate understanding of metadata tags of data sets, as well as to ensure the correctness of demonstration of metadata at the level of lexical and grammatical, Document Type Definition (DTD) of XML format is set.

```
<?xml version="1.0"encoding="gb2312"?>
<!ELEMENTqueryList(DBQuery * )>
<!ATTLIST queryList queryClass ID#REQUIRED>
<!ELEMENTDBQuery(query,prepareQuery,table+,</pre>
column+,parameterSequence+,updatableTable)>
<!ATTLISTDBQuery queryName ID#REQUIRED>
<!ATTLISTDBQuery queryDescription#PCDA-
TA#IMPLIED>
<!ATTLIST DBQuery queryType#PCDATA#
IMPLIED>
<!ELEMENTquery#PCDATA>
<!ELEMENTprepareQuery#PCDATA>
<!ELEMENTtable#PCDATA>
<!ELEMENT column(name,columnName,sql-
DataType,type,tableName,primaryKey,columnUpda-
table)>
<!ELEMENTname
                         #PCDATA>
<!ELEMENTcolumnName#PCDATA>
<!ELEMENTsqlDataType#PCDATA>
<!ELEMENTtype#PCDATA>
<!ELEMENTtableName#PCDATA>
<!ELEMENTprimaryKey#PCDATA>
<!ELEMENTcolumnUpdatable#PCDATA>
<!ELEMENTextPropCode#PCDATA>
<!ELEMENTextPropName#PCDATA>
<!ELEMENTextPropType#PCDATA>
<!ELEMENTparameterSequence#PCDATA>
<!ELEMENTupdatableTable#PCDATA>
<!ATTLIST updatableTable updatable#PCDA-
TA#IMPLIED>
```

Under QueryList tag of data query list can contain zero or more data query DBQuery, each tag of data query DBQuery composed of a query sentence query, parsing prepareQuery statements, library table table involving in the query, field column, query parameter list parameterSequence and updated table logo updatableTable.

Among them, Column tag composed of a column alias name, column name column-Name, column database type sqlDataType, corresponding analytic language type type (such as Java type), the name of the table where it located tableName, primary and foreign keys flag primaryKey and update flags columnUpdatable and so on.

In general, Web application system based on Laravel architecture can define large data sets according to business needs. The data set is divided and stored classily according to business functions, the data set documents list is represented by dbQuery-config.xml configuration file. DTD of configuration file is described as follows:

```
<?xml version="1.0"encoding="gb2312"?>
```

<!ELEMENT fileList(storeFileName * ,proce-

dureFileName *)>

<!ELEMENTstoreFileName#PCEATA>

<!ELEMENTprocedureFileName#PCDATA>

It can be concluded from the above analysis, compared with other methods of software development and design, Web design method based on Laravel framework has the following advantages:

- (1) calculated by network, reducing the load on the server and the pressure for the network, so that a large number of calculations are distributed on each node in the network.
- (2) It can be inserted. When the business need to be expanded, simply to insert the corresponding function in original software modules, the compiler can be applied without recompiling the entire system deployment.
- (3) Design can be completed better. For software architecture, it enables software structure more clearly, the affinity for users and programmers is strengthened, and also the structure and function of the software is more reasonable.
- (4) The module can be reused, the modules of same or similar function, just need to be copied to the destination and can be used after compile the deployment.
 - (5) easy to update.
 - (6) Implementation of separation from interface.

Above web design and development mode, reducing the burden on enterprises and application developers, and achieves a distributed architecture, but also the consistency transaction processing is performed to solve the load balancing, security and other issues.

In summary, Web design method based on Laravel framework can be obtained, it is scalable and have powerful scalability, which is good to improve developing efficiency.

3 experiments and simulation

In order to prove the effectiveness of Web design method based on Laravel framework proposed in the paper, there is the need for an experiment, during the experiment, a virtual operating environment based on Laravel framework need to be built, and compared with the traditional Web design method based on CI framework. According to the experimental results to obtain the following figure:

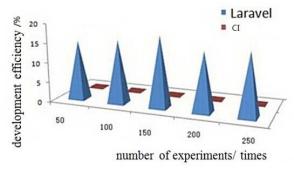


Figure 1 development efficiency trends of Laravel and CI framework

According to the experiment can be drawn, development efficiency of Web design method based on Laravel framework is higher compared to traditional Web design method based on CI framework.

4 Conclusion

With the traditional framework design methods to design web, resulting in large limitations, time-consuming and other issues, this paper presents the design and implementation method of a web based on Laravel framework, Laravel make the development process is standardized,

processing some non-business logic relationship automatically. This paper designs and implements a simple Laravel model, which achieved automated processing for part of the design. The experimental and simulation proved, web design based on Laravel framework, has scalability and robust scalability, so as to improve the developing efficiency.

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