

## Design on Students Score Management System based on Asp.net

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**Abstract.** Score management is an important work for educational administration, and the important content of education informatization construction. In order to improve the level of teaching management, and provide a full range of information services for teachers and students in colleges and universities, this article is based on Asp.net framework design student achievement management system. First, Research on the Asp.net MVC basic processing procedure and illustrate the application of the model, view and controller. Then, carries on the logic structure design, database design results by "Students information table", "Course information table" and "Score information table" and other three tables; Finally, a functional design, following the abstract and incremental refinement, the principle of modularity and information hiding design all the functions of the system. In the actual development process, it can be adjusted according to actual situation of local content appropriate to make the system more in line with the actual demand.

### Introduction

Teaching informationization is the core content of education informationization. Teaching is the center of the field of education, teaching information including teaching science and technology, education management informatization, spread of education informationization and modernization of teaching methods. Education informatization require in the education process more comprehensive use of computer, multimedia and network communication based on modern information technology, promote the education reform, so as to adapt to the coming of information society puts forward new requirements, to deepen the education reform and the implementation of quality education is of great significance.

Educational administration management system management system is an important part of education informatization, and student achievement management system is one of the core functions. Achievement is the result of the learning level and inspection, linked to various awards and assessment mechanism, relationship to the immediate interests of the students, even change the student's life trajectory, is of great significance to strengthen the academic record management [1]. Today's performance management is not the traditional meaning of the test scores, but need according to different subjects and professional division, the reasonable use weighted algorithm, the comprehensive quality of students, based on the results of the learning process and learning, through rigorous method to calculate the reasonable results are obtained. In order to meet this demand, in this paper, the integrated use of computer technology, database technology and Internet technology design student achievement management system.

### Asp.net MVC Framework

Framework technology offers a wide range of software reuse, for developers to provide a unified software development kit, frees from tedious codes, this paper studies the business logic of the application, and shielding the underlying code implementation details, so as to improve development efficiency. In order to meet the needs of different applications, can be on the basis of

the application and analysis, to improve and expand the function of the framework. The MVC (Model - View - Controller), the Model, View and Controller, an application of the input, the business logic and output according to the Model, View, Controller, an application is divided into a Model layer, View layer, control layer [2, 3]

The basic process of Asp.net MVC is the URL request coming from the client, find the value of the Controller and the Action will be asked to transfer to the Controller. Controller gain data Model objects, and passing the Model to the View, the View is responsible for rendering the page. Intuitively understandable as follows: the Model is access to web pages needed data, the Controller is to get the data, then data binding to the page control business processes, the Controller is ASP.NET PageLoad method of logic, the View is the aspx page. Process is shown in Fig.1.

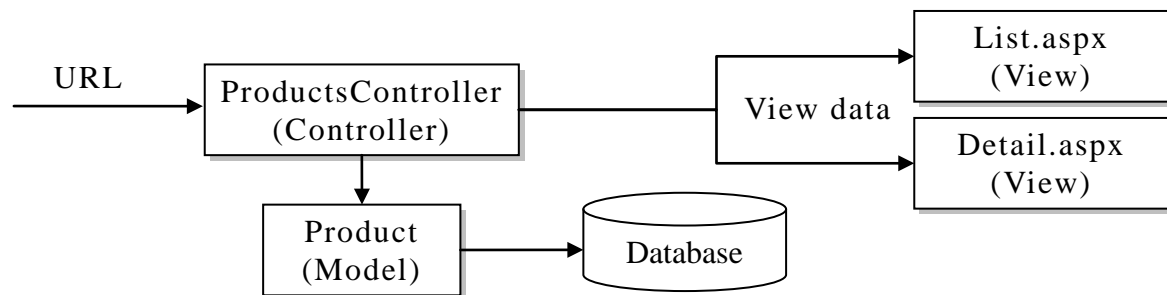


Fig. 1. Asp.net MVC process flow

Asp.net model [4]. It is implemented in the application data domain logic. The model object retrieval and storage condition in the database. Product object retrieves information from a database, for example, the operating data, and then write the updated information back to the database table.

Asp.net view [5]. It is to show the application user interface of the UI components. In general, to create the UI based on the model data. Based on the current state of the Product object, for example, edit the Product table view, display text boxes, drop-down list, and check boxes, and so on.

Asp.net controller is used to handle user interaction, work with the model, and select a view to render the user interface. In the MVC application, the view is used to display the information, the controller handles and responds to user input and interaction.

Many Asp.net MVC advantages, mainly displays in: by dividing the project into Model, View and Controller, complex projects easier maintenance, reduce the coupling between the project; Does not use view state and server form controls, can be more easily to control the behavior of the application; Application by the Controller to control the application request, and provide a native UrlRouting function to rewrite the Url; Make a Web application support for unit testing more wonderful; Superior performance in team development mode.

## Database Design

Data in the database according to certain data model organize, description and storage, with smaller data redundancy, high independence and extensibility, and can provide all kinds of users to share. From small single transaction processing to the complex software system, mostly use advanced database technology to keep the system data integrity, integrity, and sharing. Database design is to create the database and application technology of the system. Database design is for a given application environment, constructing the optimal database model, establish a database and application systems, to store data effectively and meet the application requirements of various users.

Common database design includes three stages: first, the concept design phase, is the key to database design, through comprehensive, induction and abstraction of user requirements, to form an independent of the specific concept model of database management system; The second is, the logical design phase, the concept structure into a database management system supported by the data model, and carries on the optimization; Three is that the physical design phase, as the logical model to select a most suitable for the physical structure of the application environment, mainly the design of the storage structure and access method. Limited space, this article only carries on the

logical structure design.

Logical structure design depends on the database management system. This article is based on Microsoft SQL Server to carry on the design of the company. Microsoft SQL Server is a comprehensive database platform, using the integrated business intelligence tools provides enterprise data management. Microsoft SQL Server database engine for relational data and structured data provides a more secure and reliable storage capabilities, to build and manage for the business of high availability and high performance data application. In SQL Server database engine is used to store, process, and protect the data of core services. Using the database engine can control access and quickly handle affairs, so as to satisfy the business enterprise inside very demanding and requires application need to process large amounts of data. Student achievement management system includes a "Students", "Course" and "Score" three entities, such as two entities exists between two contact "One - to - the things", that is, a student can be elective courses, a student has Many subjects, but a Course result corresponds to only One student [6, 7]. Converts the three entities to table the logical structure of the name "Students information table", "Course information table" and "Score information table", as shown in Table 1.

Table 1. Database logical structure on students score management system

Students information table				Course information table			
No	FieldName	DataType	Width	No	FieldName	DataType	Width
1	StudentID	varchar	10	21	CourseID	varchar	10
2	StudentName	varchar	50	22	CourseNumber	varchar	10
3	CollegeNumber	varchar	10	23	CourseName	varchar	50
4	CollegeName	varchar	50	24	OpenCollege	varchar	50
5	ProfessionalNumber	varchar	10	25	CourseCredit	decimal	6,2
6	ProfessionalName	varchar	50	26	ExaminingMode	varchar	20
7	ClassName	varchar	50	27	CourseIntroduction	varchar	max
8	EntryYear	smalling	2	Score information table			
9	BirthDate	datetime	4	No	FieldName	DataType	Width
10	MailingAddress	varchar	100	31	StudentID	varchar	10
11	Postalcode	char	6	32	CourseNumber	varchar	10
12	E-mail	varchar	50	33	CourseName	varchar	50
13	ContactTelephone	varchar	50	34	ExaminationDate	datetime	4
14	AverageScore	decimal	6,2	35	UsualScore	decimal	6,2
15	Ranking	smalling	2	36	ExamScore	decimal	6,2
16	Note	varchar	max	37	TotalScore	decimal	6,2

## Functional Design

System function design is conducted after the feasibility study and demand analysis, is the core of the profile design work. Functional design should follow the profile design of abstract, incremental refinement, principles of modularity and information hiding, etc.

Abstraction is the concentration and sum up the similar aspects, ignored the differences between them. That is, the abstract is to take out the essential characteristics of things, and temporarily don't consider the details. Modular design of the software can have different level of abstraction. At the highest levels of abstraction, you can use the problems of environment language description method. While on the lower level of abstraction, it will take procedural methods.

Stepwise refinement is a kind of top-down design strategy, the software architecture, according

to the top-down approach, details and data details the process of all levels of refinement gradually, until can statements in a programming language to realize, finally established the whole architecture of the software. Set a functional refinement or detailed information, gives the implementation details, divided into several elements, and then these ingredients are detailed. With the refinement of work gradually, designers can get more and more details.

Module is part of the program logic can be separated. Module has a certain function, can be individually named after the collection of data and program statements to be accessed. If the module is divided into independent of each other, module becomes smaller, the less the amount of workload each module. However, when the decomposition module number increases, the greater contact between modules, these modules link up to the amount of work also will increase.

Information hiding, is refers to the implementation details of each module is hidden to other modules. That is, included in a module of information (including process and data), do not allow the other don't need these information module USES. Adopts the principle of information hiding design software for testing and maintenance during the period of software modification work provides great convenience.

Using the above principle, with reference to relevant literature [8, 9], the design of system function is shown in Fig. 2.

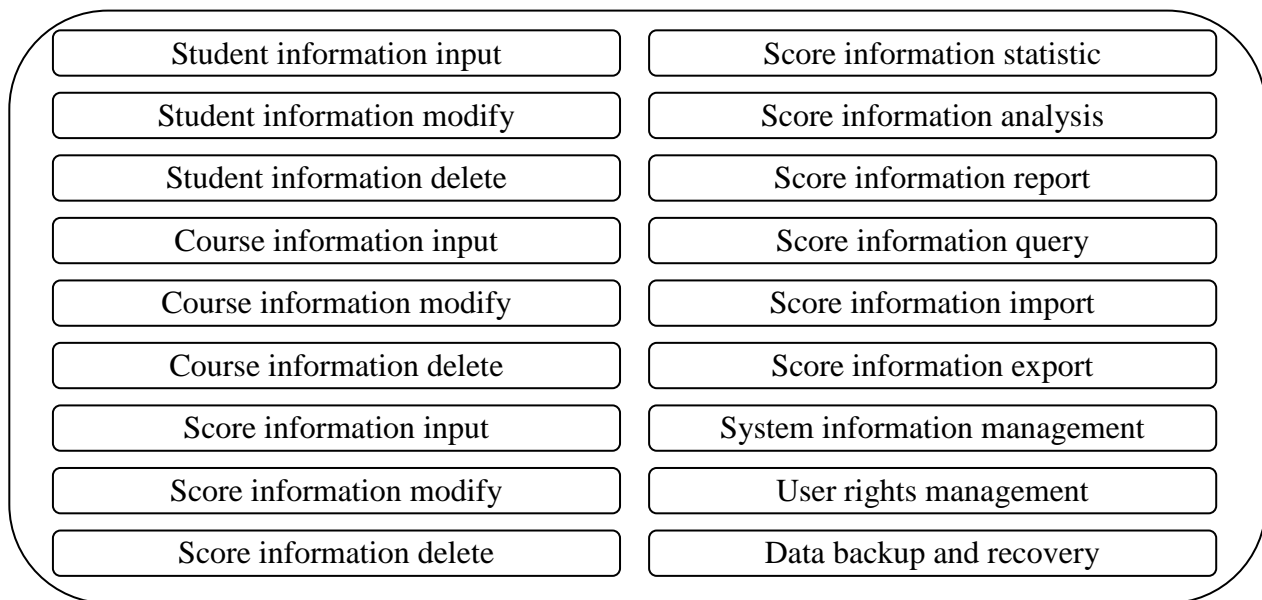


Fig. 2. Function on students score management system

## Conclusion

Student achievement management as daily work of educational administration in colleges and universities, schools, colleges, teachers and students involved many factors, such as the reform of teaching management system, especially the universally implement the credit system in universities and elective system, maintain day-to-day management and student performance management work increasingly multifarious, urgently needs the operation is simple, powerful function, low cost and has the humanized student achievement management system [10]. This article is based on the target design, in the actual development process and adjusted according to actual situation of local content appropriate to make the system more in line with the actual demand.

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