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논문

1. ASP 기반 온라인 음악 및 비디오 공유 시스템
   *이종원, *시뢰, *정회경 ................................................................. 1

2. ASP.NET 기반 운전 기능 교육 시스템
   *이종원, *화송, *정회경 ................................................................. 7

3. 직관적 퍼지에 기반한 유한 트리 오토마타
   등윤만, 송정영, 손진구 ................................................................. 13

4. 에지 기울기의 차를 이용한 개체 윤곽 추출
   *정녀, *박정범, **장종환 ................................................................. 19

5. 모바일을 사용한 유아용 과학 교육 게임
   이사라*, 안성옥**, 김수균 ................................................................. 26

6. 모바일 환경에서의 러닝 어드벤처 게임 설계
   송혜인*, 박동원**, 안성옥, 김수균 .................................................. 30

7. 스마트폰을 이용한 ID/PW 기반 강화된 사용자 인증 시스템 설계
   채영진’ 이진우’ 이진해’ 조인준’ ..................................................... 35

8. 철근콘크리트와 강섬유 보강 철근콘크리트 전단이음부의 피로거동에 대한 실험적 연구
   강보순* .................................................................................................. 42

9. 형태 지식을 이용한 전통요소의 표현 방법에 관한 연구
   차명열 .................................................................................................. 49
Technical Papers

1. ASP–based Online Music and Video Sharing System

2. A Study on ASP.NET Based Driving Skills Training System

3. Based on the Intuitionistic Fuzzy Finite Tree Automata Research
   Lunman Deng ¹, Song, Jeong-Young ², Son Jin Ku³

4. Object Contour Extraction Using Difference of Edge Slope
   *Zheng Ru, *Jeong Beom Park, and **JongWhan Jang

5. A Mobile Science Game for Kids
   Sara Lee*, Syungog An**, Soo_Kyun Kim

6. Learning adventure game for the mobile environment
   Hyein Song*, Dongwon Park**, Syungog An, Soo_Kyun Kim

7. ID/PW–based Enhanced User Authentication System design using a Smart Phone
   Young-Jin Chae*, Jin-Woo Lee*, Jin-Hae Lee*, In-June Jo**

8. A Experimental Study on Fatigue Behavior of Joints between RC and RSFC subjected to shear
   *Bo Soon KANG

9. Design Methods Using Traditional Shape Elements Based on Spatial Knowledge Representation
   Cha, Myung Yeol
ASP.NET 기반 운전 기능 교육 시스템

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A Study on ASP.NET Based Driving Skills Training System

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요 약
오늘날 네트워크는 급속도로 개발되고 있고, 웹 사이트의 품질 또한 요구되고 있다. 사용자들은 일반 텍스트와 이미지 기반의 웹 사이트를 보는 것을 원하지 않고, 시각적으로 더 나은 대화 형 웹 사이트를 원하고 있다. 이로 인해 웹 페이지 디자이너에게 큰 도전과제를 가져왔다. 운전 기술 교육 시스템은 주로 운전하는 것을 목표로 두고 있다. 또한 정보 관리와 관련된 작업, 시스템의 구축을 표준화에 맞추어 더 체계적이고, 편리한 쿼리 방법을 이용하여 시스템을 설계한다. 동시에 현대화 및 정보화시대에 운전 기술 교육은 사용자가 운전을 관리하는 것이 중요성을 인식하게 만들 것이다.

Abstract

Network is developing rapidly today. The quality of web site is becoming more and more demanding. People don’ t want to see plain text and image based web sites anymore. They want to see better interactive web sites with aesthetic appeal. This has brought a huge challenge to the web page designers.

Driving skills training system is mainly aimed at driving. It involves a series of information management related work, the establishment of the system, making the information management more standardized, systematic, and more convenient query methods. At the same time, the driving skills training system is realize the driving management is an important content of modernization and information.

Keywords: Driving, Driving skills, Network, query methods, Training system
I. Introduction

In recent years, more and more driving students through artificial writing data already cannot satisfy the demand of the huge data. In order to better adapt to the high efficiency of the information age, using computer to realize the driving skills training system will be inevitable. On this basis, designed a driving skills training system, to be used in the driving school, so that the driving school activities can be managed in the shortest possible time efficiently and accurately [1].

The application of computer technology in modern management, make the computer to be leaders and managers use the important tool of modern science and technology [2]. In computer aided driving school, the management system greatly improves the ability of information acquisition, processing, thus is advantageous to the management decisions in a timely manner. The application of computer system in the management process helps in saving the raw data, data processing, information retrieval and also helps to understand the dynamic driving skills training system, dynamic management, effectively deal with driving school information, automation driving information [3], improve teaching efficiency.

II. Feasibility analysis and technical principles

2.1 Economic feasibility

The development cost of system software is not considerable. If the system run, need to use applicable version of the software code written with some open source tools to compile a can, so also does not exist for the costs of software. In the aspect of hardware, development of this system only needs a computer and hence no need to consider the hardware development cost. To sum up, the system of spending very little cost of running.

2.2 Technical feasibility

According to the driving school put forward the system function, performance, and realize the various constraint conditions, according to the new system target to measure whether the technology needed to have, this system is a database management and query system, the existing technology is relatively mature, hardware, software, performance requirements, environmental conditions, such as the condition is good, the estimated using existing technical conditions should be fully can achieve the function of the system goal. At the same time, consider giving you a development period is relatively abundant, expected system can be made within the time limit development.

2.3 System development tools
Development of language:
C sharp (is also referred to as "C #")
Database:
Microsoft SQL Server 2010 database

2.4 System development model

This system platform model is: the client/server mode (C/S).
C/S mode is mainly composed of the client application, server management procedures and the middleware of three parts.
III. Requirement analysis

3.1 Functional requirements

(1) Employees requirement analysis
To realize the registration and management of employees of driving and queries.

(2) Authority requirement analysis
Administrator to employees give relevant jurisdictions.

(3) Student requirement analysis
Register: The student name, gender, id number, phone, payment amount, telephone, coaches, salesman, time signing up, note register record.

The student information query: According to the students name query within a certain period of time to sign up students information, print student information form according to the results of the query.

(4) Examination requirement analysis
a. The test information input
b. Test query

3.2 Performance requirements

(1) Practical requirements
Starting from the actual situation of driving system, combined with relevant experience for development, make the driving school daily work as much as possible, convenient, fast and reasonable.

(2) Information requirements
System administrators can query the driving school of business process information, so the information to verify, modify, to facilitate the comprehensive management of the driving school.

(3) Safety requirements
By using the user name and password, we can safely verify the authorized users in a hierarchical way. The safety and reliability of the data is the basic requirement of database design process.

(4) Maintainability
Every software or the system will try to meet this requirement, a software maintainability, staff for non-professional software system is difficult, so the system development design for easy maintenance.

3.3 Data flow analysis

Data flow analysis can help developers to understand the business process[4], find and processing system for investigation of the errors and omissions. Data flow analysis was conducted by data flow diagram, in which symbols and rules attachment to represent a particular business process.

Fig.1. Data flow diagram

IV. System design

4.1 Design goals
System to the realization of the basic functions and simple operation as the design goal. Strive to make the system has good operability, friendly interface, the function is perfect, and need not to the
user's special requirements and training.

4.2 Data analysis
The data source of this system mainly has two aspects, one is the foundation of the system administrator to initialize data which is mainly to include the basic information of the department, staff and the different department staff permissions Settings, this is the main source of data[5].

4.3 Overall functional design
Driving school management system to the data flow as the main line, the whole business management system is divided into system management, student management, examination management, grade management modules, each module to complete the corresponding functions.

Fig.2. System management functions diagram

4.4 Structure design
E–R model elements are: entities, attributes, and contact. Entity is involved in the user work environment affairs, attributes are descriptions of physical characteristics.

Draw a system entity attributes from data demand analysis diagram, follow the principle of three paradigms, integration of the dependencies between entities, e–r diagram are obtained.

![Diagram](image)

Fig.3. The system global E – R diagram

4.5 Database structure design

4.5.1 Design specification
Database logical design is to transform e–r diagram into relation model of the process[6], to all the entities and relationships into a series of relational schema, common rules in the process of conversion are:

(1) Entity type is transformed into a relational schema.

(2) One-to-one relationship model can be converted into a separate relational schema, can also be a merger with arbitrary end corresponding relational schema.

(3) One-to-many links can be converted into a separate relational schema, can also be used with many of the corresponding relational schema merging at the other end.

(4) Many-to-many connection can be converted into a relational schema.

4.5.2 Database structure table
After database system analysis and logical design, the structure of the database has been very clear, the first to
create a database in Microsoft SQL Server 2010 JXGL. Then set up six tables respectively:
User information table, Student information table, The coach information table, Score information table, Health examination information table, Reservation vehicle table. Each table and logic design of a kind of pattern corresponding to the relationship. Below is each attribute in a database table, including the name of the attribute column, data type, length, null and note.

V. System implementation

5.1 Login implementation
Main function of this module is used to login to this system, different permissions of the user login the system will enter the different management module interface, because in the background to the judgment of the user.

Fig.4. The login page

5.2 Login Home Page
Administrators can login to this system, student management, teaching management, examination management, score management, user management, as well as the personal information management.

5.3 Student information management
After the administrator login system, you can manage student registration, health examination, graduation information.

Fig.5. Login home page

5.4 Teaching management
After the administrator login system, can record the distribution of the coach, and query, students reserve a vehicle records.

Fig.6. Student information management interface

5.5 Exam management
Students is used to test booking and
query the booking situation.

Fig.8. Exam management interface

VI. Conclusion and Future Works

6.1 Conclusion

Based on the analysis of driving skills training system, on the basis of management process, using C# and SQL2010 database design and complete the driving skills training system. Through the system debugging, according to the results of this system was basically completed the functional requirements. In the whole design process, by using the waterfall model and structured design methods. This system is beautiful and friendly interface, convenient operation, made their own characteristics. But because of haste and lack of experience in system development, system in the design process inevitably encountered all sorts of problems.

This system may appear some problems in the process of actual use, through the continuous system optimization and improvement can debug the conform to the actual situation of real driving skills training system, and integrate all the relevant management information system, form a unified, standardized, scientific and reasonable driving skills training system, improve the management level.

Although this system can realize information management more convenient and accurate records of training information quickly, but there are still many shortcomings, in my opinion, one is to improve its operation interface, can be more beautiful and comfortable, improve the user experience, another is his whole function is not perfect enough, not the realization of the module for students to make a special function. In the later study work, I will continue to optimize the system upgrade.

6.2 Future Works

VI. References

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