Design and Implementation of Innovative Entrepreneurial Experience System for College Students Based on Data Analysis Model

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Abstract. Aiming at some key problems of College Students' innovation and entrepreneurship under the mode of school enterprise cooperation, this paper uses multidimensional dynamic innovation model (mdmi) to qualitatively analyze the problems and development trend in the process of College Students' innovation and entrepreneurship activities from multiple perspectives, and uses multi factor Logistic regression analysis to quantitatively analyze the probabilistic nonlinear regression relationship between College Students' innovation and entrepreneurship mechanism and multiple influencing factors. This paper designs and implements an innovation and entrepreneurship experience system for college students based on multi-dimensional dynamic innovation model. The system adopts Java EE design framework and Hadoop development mode, and adopts the ASP.NET The collaborative filtering technology and support vector machine (SVM) algorithm are used for personalized recommendation and data mining of innovation and entrepreneurship. After the completion of the system design, the actual operation shows that the overall operation of the system is stable, which has a positive significance to promote the development of College Students' innovation and entrepreneurship activities.

Keywords: College Students' innovation and entrepreneurship ·
Multidimensional dynamic innovation model · Hadoop technology · SWM algorithm

1 Introduction

The course of modernization. The vigorous development of College Students' innovation and entrepreneurship can effectively optimize the employment problem of colleges and universities, not only relying on the number of resources invested, but also on the employment structure of college students in China. In the traditional employment mode of colleges and universities, it depends on the investment of modern science and technology. Only under the guidance of science and technology, can the dissemination and circulation of employment information be very limited, The lack of timely understanding of the market, the continuous transformation and upgrading of the traditional employment mode of colleges and universities, and the full use of the needs of modern graduates

lead to great blindness in the employment of college graduates. Strict information technology and data fusion technology can accelerate the development of College Students' innovation and entrepreneurship mode, and restrict the healthy development of college graduates' employment. Therefore, the integration of information technology innovation and entrepreneurship experience system is the inevitable trend of college graduates' employment. By effectively combining with the needs of the employment market, scientific and reasonable overall planning is carried out in the process of college employment analysis and implementation to ensure timely information communication between college graduates and the employment market. The core purpose of the author is to develop a stable performance, suitable for college full-time employment counselors to use college students' innovation and entrepreneurship experience system, hoping to popularize the modern information advanced management concept and technology to college full-time employment counselors. Therefore, the combination of theory and practice, the current actual situation of college employment into the design and development of software. In the software design architecture of this paper, the multivariate logistic regression analysis is used to quantitatively analyze the probabilistic nonlinear regression relationship between College Students' innovation and entrepreneurship mechanism and multiple influencing factors. The system uses Java EE design framework and Hadoop development mode, uses aspnet language to realize dynamic web pages, and uses collaborative filtering technology and support vector machine (s VI m) algorithm for personalized recommendation and data mining of innovation and entrepreneurship. After the completion of the system design, the actual operation shows that the overall operation of the system is stable, which has a positive significance to promote the development of College Students' innovation and entrepreneurship activities [1].

2   System Requirement Analysis

As a programmatic guidance document for system development, system requirements analysis is very important for the smooth implementation of the system. There are many ways to obtain the system requirements. For example, through the establishment of relevant personnel, including experts and scholars in relevant fields, the establishment of learning groups, through interviews, with the help of market research, etc., and through field investigation, browsing historical information to collect relevant information, with the help of corresponding cases for detailed research, combined with the characteristics of the program itself, Multi level investigation and analysis of system requirements analysis. Based on the general method of forming the above demand analysis documents, this paper obtains the demand analysis of College Students' innovation and entrepreneurship experience system by combining actual research and literature review. On the one hand, it actually visits the current development status of College Students' innovation and entrepreneurship and their needs for future development in a university in East China, and obtains first-hand information, Provide objective and real data guarantee for system requirement analysis [2]. On the other hand, by consulting the relevant literature of College Students' innovation and entrepreneurship at home and abroad, and referring to the latest development trend of College Students' innovation and entrepreneurship at home and abroad, the corresponding demand analysis documents are formulated to ensure that

the obtained demand analysis documents are in line with the current development trend. As the innovation and entrepreneurship technology and application place of college students are constantly changing, the innovation and entrepreneurship experience system of college students designed in this paper must be able to adjust according to the update and application place of innovation and entrepreneurship technology of college students, and realize the upgrading and improvement of the system, so as to meet the changing needs and have good scalability.

3 Research on the Importance of Influencing Factors of College Students' Innovation and Entrepreneurship Based on Multivariate Logistic Regression Analysis

The multidimensional dynamic innovation model established above analyzes the mechanism of College Students' innovation and entrepreneurship under the influence of multiple factors from a qualitative perspective. In order to further quantitatively analyze the probabilistic nonlinear regression relationship between College Students' innovation and entrepreneurship mechanism and multiple influencing factors, logistic regression analysis is introduced, This paper establishes the importance model of College Students' innovation and entrepreneurship influencing factors based on multi factor Logistic regression analysis, and the modeling process is as follows [3].

3.1 Sample Pretreatment

Set the test sample, set the two classification observation results (College Students' innovation and entrepreneurship results) as the d-junction, use the LR classifier after classification learning to preprocess the sample, set the processing weight sequence, then the sample and processing weight group can be obtained according to the linear superposition.

$$C = q_0 + q_1 x_1 + q_2 x_2 + \cdots + q_n x_n \tag{1}$$

3.2 Introducing Nonlinearity by Sigmoid Function

On the basis of sample preprocessing by LR classifier, sigmoid function is used to introduce nonlinearity, which is conducive to control the output range and ensure that the data is not easy to diverge in the regression process, as shown in Eq. (2):

$$f(x) = \frac{1}{1 + e^{-x}} \tag{2}$$

From Eq. (2), it can be concluded that the key of logistic regression analysis is to solve the weight of sigmoid function.

4   System Implementation and Test

4.1   Design of System Use Case Diagram

According to the actual needs and combined with the general design ideas of software engineering, the roles of College Students' innovation and entrepreneurship experience system based on multi-dimensional dynamic innovation model mainly include system administrator, full-time employment personnel in Colleges and universities, and general personnel. The use case diagram of each role user is shown in Fig. 1. In order to improve the system performance, the system performance requirements mainly include the following aspects. First, the system operation interface should be unified and friendly. In order to meet the needs of more users, the ease of use of the system should be improved. Second, the basic information of users in the innovation and entrepreneurship experience system must be standardized and complete, so as to ensure the reliability of the whole system. Fourth, ensure the real-time query of students' employment information data in the college students' innovation and entrepreneurship experience system. Fourth, when the employment information data in the college students' innovation and entrepreneurship experience system has the operation of writing and deleting, the system can complete the real-time automatic update and has the function of recording. Fifth, the database of College Students' innovation and entrepreneurship experience system should have good platform expansibility and high security performance [4].
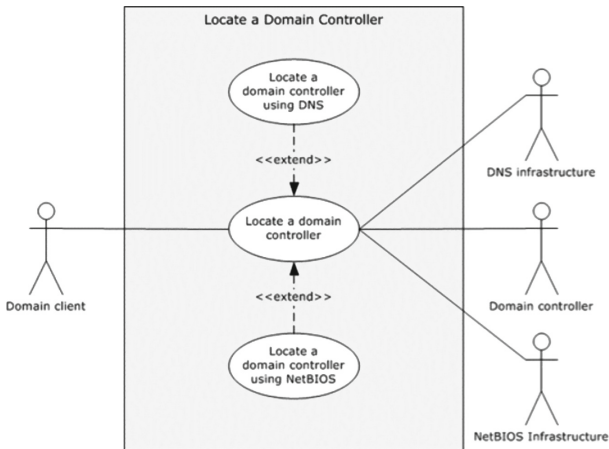

Fig. 1. System analysis use case diagram

4.2   System Implementation

According to the system architecture and overall function module design scheme given above, the system is programmed in vs2012 environment. Considering the universality of the system application, the system operation carrier takes Microsoft's classic stable

Windows 7 operating system as the standard. At the same time, in order to improve the user's access experience, the hardware configuration should be equivalent to the common computer workstation. The first is to design and develop the system, and then to meet the user's requirements of using browser to access the system. In other words, in order to meet the user's requirements of using domain name and IP to enter the system, it is necessary to first arrange and allocate the server of the system. Hardware configuration and environment requirements are the primary contents of system configuration database server. The environment requirements here are windows Server2008 server operating system, and sqlserver2015 is the database version to be installed. The client software environment can be reduced to meet the general Internet needs. In order to improve the access success rate, the browser software is recommended to use the IE browser of Windows 7 operating system.

5   System Software Design

System software design is the guarantee of system function realization. According to the system structure framework, system software can be divided into two parts: monitoring terminal software and monitoring platform software. The embedded software of monitoring terminal is the core content to ensure the function realization of monitoring terminal, and the display software of monitoring platform is the support to ensure the function realization of monitoring system. This chapter focuses on the specific design of embedded software of monitoring terminal and display software of monitoring platform, so as to improve the overall design of system software.

5.1   Overall Structure

The software of logistics monitoring system based on multi-dimensional information synthesis includes two parts: the embedded software of monitoring terminal and the display software of monitoring platform. The designed functions are as follows: (1) the embedded software of monitoring terminal has complete DSP chip control process mechanism, initialization, parameter configuration, interrupt response and program cycle operation; it realizes the data acquisition function of monitoring terminal in the process of logistics transportation, It includes temperature and humidity collection, object status image information collection, positioning information collection and so on: taking TMS320F28335 as the carrier, it processes the collected data, analyzes the data alarm threshold and data changes, analyzes and integrates the multi-dimensional information comprehensive sensing data, and stores the data in the cache; designs the working strategy of DSSP main control chip, Set up a complete sleep and wake-up mechanism, control the power system of the hardware platform for policy management, reduce power consumption, intelligently judge the sensor state, add function verification and restart reply function; prepare for data sending and receiving, establish handshake agreement with the monitoring platform, receive and respond to the command of the monitoring platform, and cache the failed data, And in chronological order. (2) The display software of the monitoring platform can connect data with the monitoring terminal, establish handshake protocol, analyze data and save data information, verify and display current

data information, issue commands to the monitoring terminal, configure the parameters of the monitoring terminal and modify the operation strategy, display the positioning information and operation track of goods in the process of logistics transportation, and display the status information of goods, It can store photo information, be compatible with electronic map for location query, and connect with server back end to view historical data.

5.2   Data Processing

(1) Data analysis. The data information of monitoring terminal is divided into three categories: temperature and humidity information, image information and positioning information. In the temperature and humidity information, AD590 can directly get the digital temperature value by controlling the AD conversion module of tms320f2835, while SHT15 also returns the digital temperature and humidity value, which only needs to do simple averaging processing; the image information from the image module ov7670 returns the information byte with the opening 64 bytes of "image name" size, shooting time and image frame number, After decoding according to the protocol, the subsequent image information is framed to complete the image information analysis; the positioning information is extracted according to the keyword structure of BD to complete the data analysis of positioning information.

(2) Data communication. The serval communication of monitoring terminal is divided into three categories: internal data communication of core controller, data communication between core controller and data acquisition unit, data communication between core controller and wireless communication unit. The internal data communication of the core controller means that the control chip TMS320F28335 communicates with the data memory through SPI communication bus, through JTAG and simulation interface, through 232, 422 standard interface and communication interface, and through SP I and timer. The data communication between the core controller and the data acquisition unit is connected by the way of communication bus. AD590 converts data directly through AD conversion, SHT15 communicates data through 12C, image module communicates data through the cached UART, and Beidou positioning module communicates data through UART. The data communication between the core controller and the wireless communication unit is carried out through UART, and the prepared data is finally sent to the monitoring platform.

6   Conclusion

This paper first analyzes the important role of school enterprise cooperation mode in promoting students' innovation and entrepreneurship mechanism, and then analyzes that the university students' innovation and entrepreneurship mechanism involves many levels, which belongs to the system engineering with considerable complexity, and must be analyzed by using the systematic method, This paper analyzes the existing problems and development trend of College Students' innovation and entrepreneurship activities from multiple perspectives by using multi-dimensional dynamic innovation model (mdmi),

and constructs a college students' innovation and entrepreneurship experience system. The system adopts Java EE design framework and Hadoop development mode, and adopts a variety of data storage and data mining technologies. The system has good performance. The actual test shows that the system runs stably, has strong practicability and functionality, and can better meet the requirements of university innovation and entrepreneurship experience system.

References

1. Zhang, H.: On the optimization of College Students' innovation and entrepreneurship education system under the school enterprise cooperation mode. J. Xuchang Univ. **34**(4), 144–146 (2015)
2. Luo, Y., Chen, M.: Thinking and exploration of College Students' innovation and entrepreneurship practice based on school enterprise cooperation mode. Sci. Educ. Guide **15**, 178–179 (2016)
3. Wang, H.: Research on the construction of school enterprise cooperation mode for college students' innovation and entrepreneurship in Tibet. J. Tibet Univ. **31**(4), 134–139 (2016)
4. Liu, J., Hao, F., Wu, G.: Design and implementation of College Students' innovation and entrepreneurship project management system based on J2EE. J. Luliang Univ. **7**(2), 37–42 (2017)