Development and Implementation of Students' Competition Simulation Platform on Module Design

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Abstract

With the changes of social values and guidance of government policies, there is grim situation of students' employment. Self-employment of students has become the direction of the development of students' employment. In order to improve the college students' employment ability during the training in school, we use Virtual Market Simulation technology to design and develop Students' Competition Simulation Platform. Based on Java language and adopting of B/S structure of J2EE distributed application technology, it goes with LAN remote teaching training through website single sign-on. The platform includes career assessment simulation, innovative thinking ability training, entrepreneurship practice competition, career planning, analysis of cases of running business and etc. The students fight in skill completions through working with team members. The system simulates all processes of starting business in real com, which improves the students' ability of entrepreneurial cognition and judgment on decision making.

Keywords: competition simulation platform, venture evaluation, module design

1. Introduction

Students' competition simulation platform realizes the students' entire simulation practice teaching by using simulation technology. The system adopts virtual market simulation technology, which includes virtual market generator, simulation marketing game and sampling survey research simulation technology. It simulates the real relations of Virtual Market Simulation, market research and marketing. Applying the mature economy simulation, it designs the market demand response model, marketing price model, advertising promotion market response model, discrete event game model, competitor's strategy reaction module and etc. Using the platform, the students are able to simulate the real creation processes of running business, complete business plan, deals with industrial and commercial bureau registration and tax bureau registration, makes management decisions on founded enterprise, etc. Based on realistic simulation of real working environment, it not only helps students master kinds of situations they may met when starting business and making management decisions, but also helps them to analyze the problems and operation results evaluation, helps them to deepen the practical understanding and experience of entrepreneurship. It helps students to improve their business awareness, to learn entrepreneurial skills, enhance the ability of choosing a job. By server virtualization, application virtualization and desktop virtualization technology and etc, students' competition simulation platform virtualized many kinds of hardware and software resources. Manage and distribute the virtual resources intelligently and automatically. It integrates software and hardware resources

which scattered in each process of running a company. It also realized the sharing and dipping of education resources. It's helpful to promote utilization of education resources, to reduce education investment cost, to lower the management cost, to enlarge the using range of resources, to promote the balanced development of education resource through clustering, sharing and updating the education resources [1].

2. Platform Design Ideas

2.1. The Design Objective of the Platform

Students' Competition Simulation Platform helps to train and exercises student's personal comprehensive quality of being an entrepreneur. Software simulation helps students to reserve knowledge of starting business. In the process of using skills competition platform to fight, students thoroughly understand the strategy management, corporate finance, marketing and manufacturing knowledge which involved in previous learning [2]. Through running and managing the simulated company, we understand the responsibilities and work details of Industrial and Commercial Bureau, Tax Bureau and etc. It trains our ability of viewing overall situation and the ability of thinking systematically, enhances students' competence of analysis and management decision making. It also makes students realize and experience all risks on running business, shorten the practical ability gap between graduates and social workers, strengthen their adaptability of getting a job [3].

2.2. Technology of Platform

Based on Java language and adoption of J2EE distributed application technology B/S structure, the Students' Competition Simulation Platform combines large-scale database system which supporting data storage, inquiry function, statistics, analysis, supporting Windows, Linux, Mac and etc. operation system. It also supports Tomcat, Weblogic, JBoss and etc popular JEER server. It's based on large websites styles, using website single sign-on, supporting LAN remote access and Apache Lucene search engine, no limits for client-side and students are able to use site search and internet search [4].

2.3. The Feature of Platform

Through the virtual working environment and managing the business running, students can figure out the solutions for all problems they met, learning from their failures, understand more from success? Therefore, they became more capable of making decision and analysis during business running [5]. Students' Competition Simulation Platform has advanced design idea. It pays more attention on practice process through innovative teaching model [6]. It also reflects the connotation of the quality-oriented education, emphasizes the education innovation and practical ability of students. Students' Competition Simulation Platform covers Venture evaluation system, business school, business plans, entrepreneurship, entrepreneurial practice, market research, competitive strategy analysis, financial analysis modules and etc. It provides the STP analysis, SWOT analysis, Boston contrast analysis, competitor analysis, financial analysis and etc tools. It facilitates students to use tools for business strategy formulation and strategy analysis. Based on scientific theory, Students' Competition Simulation Platform is setting in real environment, paying attention to combine theory and practices, paying attention to management and rivalry [7]. It emphasizes the

benefits and risks, which also increases students' abilities and skills of running business.

3. The Modular Design of Students' Competition Simulation Platform

Students' Competition Simulation Platform is formed by 4 modules includes innovation thinking ability training, venture evaluation mode, career planning and business case. It's access by three kinds of permissions including the administrator, teacher and the student. The administrator has highest authority such as managing the teachers, classes and systems. It's also achievable for administrator to revise basic information, reset system parameter, reset products' serial number, update activation code, add, revise or delete the functions of teachers and classes. Teacher has right to add cases in the system. Teacher also has access to class management, student management, venture evaluation management, enterprise management creation, simulation of management, entrepreneurship training summary, score management, personal information management functions, etc. Through the data interface of platform, it's ok to implement the data sharing of database. Students have access to quick positioning and finding information relating to starting business through search engine. It's ok for them to visit every modular, to aware of their entrepreneurial ability through authoritative professional assessment. Students will pass the tests, complete their business plan, and register successfully in industrial and commercial bureau and tax bureau. Students start to learn businesses operating management such as making management decisions and so on. Basing on the realistic simulation of real working environment, it helps students to master real situations they may met in business world, to realize how to making decisions in process of enterprise foundation. It helps to analyze and evaluate the operational results, helps students to deepen the real experience and understanding of starting business. By learning and practical training in every modules, students master business knowledge, improve business skills, enhance the entrepreneurial skills through experience business acknowledge, business establish, operation simulation, case analysis and etc processes, students' competition simulation platform as shown in Figure 1.
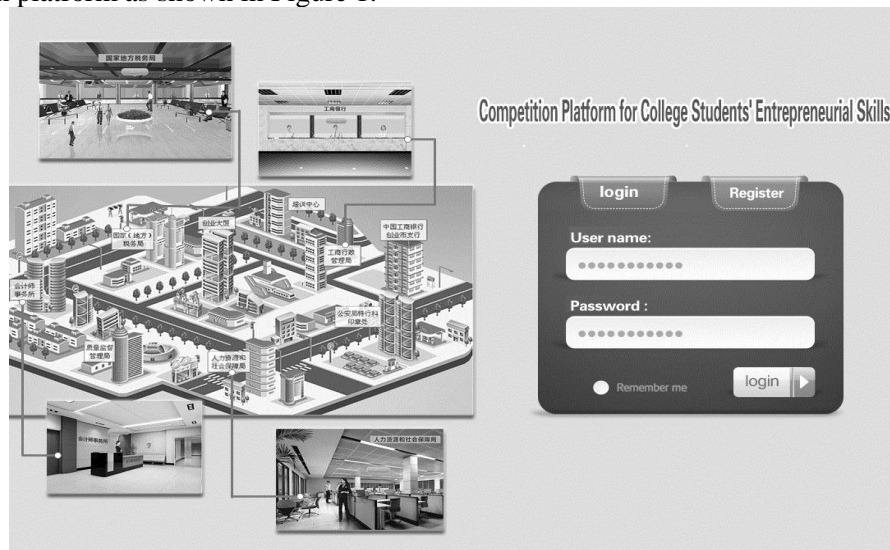

Figure 1. Students' Competition Simulation Platform

3.1. Venture Evaluation Simulation Module Design

According to steps listed on entrepreneurship questionnaire, Students venture evaluation simulation module goes proceed with system standardization work such as project preparation, data analysis, norm collection and report interpretation, etc. Using JAVA language and J2EE distributed application technique, under the B/S framework, the software design connects with large-scale relational database system which includes data storage, search, statistics and analysis ability, realized functions of virtualization. The system's examination was provide by evaluation experts, adopting mathematical modular mode, obtaining the evaluation analysis reports through testing the entrepreneur group, guiding the running of business based on analysis reports, pointing out the direction of running business for students, venture evaluation simulation module as shows in Figure 2.
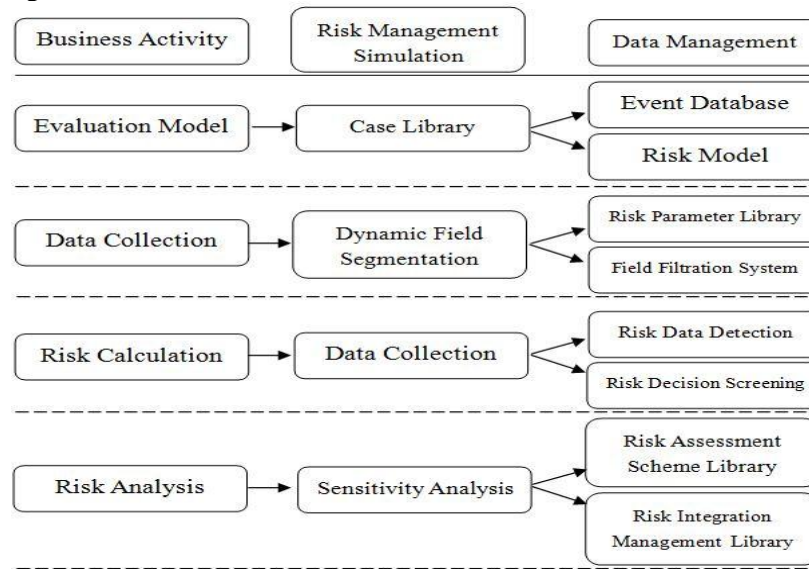

Figure 2. Venture Evaluation Simulation Module

The Venture evaluation modular mainly aims at evaluating quality of colleague students, which includes all characters needed here [8]. The students' personality, management skill, interpersonal relationship and environmental factor are the main parts of successful business running. Entrepreneurial evaluation includes entrepreneurial personality assessment, entrepreneurial potential measurement, assessment and entrepreneurial thinking, entrepreneurial psychological assessment, business intelligence assessment, nine personality assessment and entrepreneurial success index evaluation. Evaluation questions include questions selected, image choice, pattern choice, right and wrong choice, multiple choice, inductive choice, vocabulary understanding, numerical computation, logical judgment, spatial forecast, diagramming, reasoning.etc. Entrepreneurial environment analysis includes entrepreneurial education environment and students entrepreneurship research analysis. They would analyze the videos such as teachers' recommendation, entrepreneur's videos and the market competition, social norms, tax policy, financial support, business education, business environment and video and etc. Business Case includes many case data [9]. It enriches students' business case database, helps students to analyze the cases, learning and thinking on cases. Based on training the entrepreneurship and ability of running business, it helps to solve the practical problems, to experience and hardness of establishing a company [10]. Case discussion was held in the form of video conference, through the co-working of equipment, system and environment, which helps entrepreneurs communicate with each other by high

quality voice frequency. Business case analysis including entrepreneurial opportunities, entrepreneurial projects, entrepreneurial spirit, entrepreneurial culture, entrepreneurial finance, business management, entrepreneurship and self-employment of college students' cases analysis.

3.2. Innovative Thinking Ability Training Module Design

Innovative thinking ability training module mainly tests the thinking ability, imagination, innovation will, logical reasoning ability, interpersonal skills, math and verbal ability evaluation Innovation thinking ability training module pays attention to the connection between logic and passion, modularization and confrontation, enjoyment and extensibility, enlightenment and inspiration [11]. The innovative thinking was drawn in the original design idea, started through consolidating common thinking, emphasis on understanding and application of innovative thinking. Module content pays attention to the intrinsic relationship between each module designed, and the relative independence of module and the module content, form relatively perfect innovative thinking cultivating system [12]. No matter the teachers' teaching or self learning, it finishes the innovative thinking ability training on basement of satisfying the systematic training. Inspire the student to the feeling of innovative thinking through typical case analysis, break the regular pattern of teaching and learning on module layout, use specific examples and enlightenment analysis, innovative thinking ability training module as shows in Figure 3.
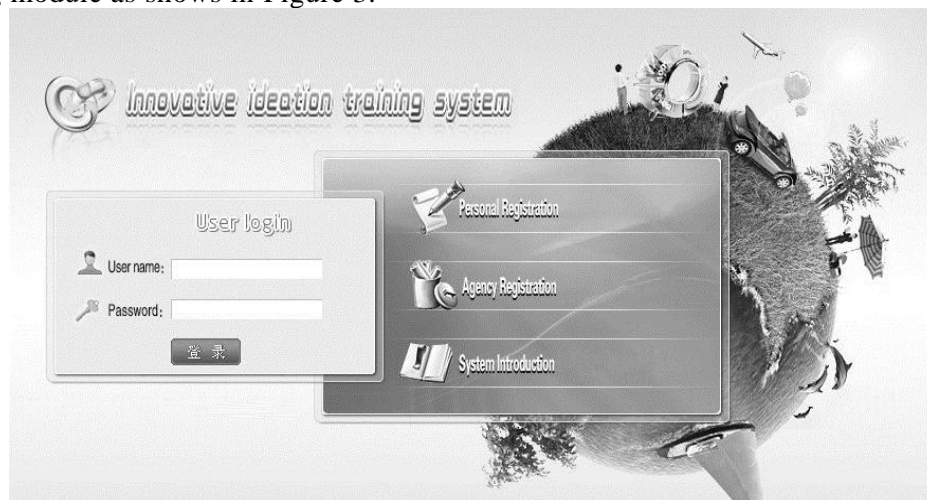
Figure 3. Innovative Thinking Ability Training Module

Innovative thinking ability training module was formed by three roles includes System administrators, teachers and students. The administrator is responsible for daily maintenance and management of teacher and system. Teacher is responsible for maintenance and management of class and students, includes choosing the test content, evaluating management and follow-up evaluation and etc functions. Student is responsible for detailed test such as innovation theory, the innovation test, and training. The new design' innovation theory includes the evaluation of innovative thinking, mind maps, TRIZ theory and brainstorming concreteness. Innovation test includes creation personality test, abstract thinking, reverse thinking, intuitive thinking and inspiration thinking testing and other testing [13]. Innovation training includes self-awareness, space, the type of graphics, visual class, text, numbers, and comprehensive training, etc

[14]. Through transformation, combination, split, etc, graphics class training recognizes the shapes of graphics, to distinguish the true from the false, to explore the hidden meaning in the language, to improve the discrimination ability [15]. Creative class training connects with practice, gives play to imagine, broadens the students' creativity from the breadth and depth of thinking and cultivates creative thinking ability. According to the conditions given, the reasoning class training analyzes the relatively complicated things based on conditions or features, which improves the analysis ability [16].

3.3. Practice Contest Module Design

Development of running enterprises experiences start-up, growth, development, maturity and decline stages, etc. Practice contest module allows students to simulate enterprise operation management in actual combat simulation enterprise stage, which toward to the enterprise development life cycle, making management decision and push forward the growth of the company [17]. Practice contents is the key link of training and promoting the ability of students' running business, meanwhile it's the practical link which test the workability of the business plan [18]. Through simulation of real business running, the students attend the competition divided into several teams. Different teams become competitor in business world, fighting each in market, Members of the team plays the roles of company general manager, finance director, marketing director, production director, director of research and development, human resources director and etc, carrying out the managing job related to their job titles. Through the teams' debate and discussion on marketing environment and background analysis, they finish the strategic planning, brand design, marketing strategy, market development, product planning, production planning, financing strategy and financial budget and etc management decisions, which helps the company to realized their Strategic objectives.

Practice contest module consists of research and development department, manufacturing department, hr department, Marketing Department, sales department and finance department and etc [19]. The research department is responsible for reaching and designs of new products. They design the products according to the analysis of consumers' needs and company development strategy. The design finish time line and the cost were different according to the complexity of products' design. The manufacturing department is responsible for products' making, includes purchasing raw material, planting, equipment purchasing, qualification, workers training, delivery and etc. The submenu after purchasing raw material is purchasing the raw material needed on products according to the raw material configuration designed by company. The submenu of planting is managing the company to buy to rent the workshop. The submenu of purchasing equipment is managing the equipments used in workshop. The submenu of workers includes managing the training plan for workers, submitting the plan to HR department. The submenu of ordering is responsible for managing the orders' delivery according to sales order and inventory situation. Click factory when you need to arrange production, and then choose the production line to finish this arrangement. HR department is responsible for recruiting new workers, which includes operation workers, salesman and management level workers. They also will sign contract with workers, underwrite insurance for them, and arrange the skills training. Signing contracts with all workers and underwriting insurance are finished under the submenu of signing contract. Promoting the workers' skills and arranging the training needs to be finished under the submenu of employee's training. The sales department is

responsible for the promotions of all markets, which includes the regional markets developments and their advertising investment. It's finished under the submenu of market development, when we choose the relating market to go proceed with its advertising investment according to company's strategy. The effectiveness of advertising will decide the sales status of products. It's under the submenu of advertizing when we design the targeted products' advertising and promotion plan according to company's products. Sales departments is responsible for selling the products, work out the quote strategy according to different markets, it should be done under the submenu of quotation. The submenu of sales evaluation is responsible to evaluate the relations between sales price and sales, figure out the highest price for target sales quantity. The financial departments are responsible to collecting and managing the funds. The submenu of bank includes bank loan, cash budget, and loan management and etc submenu. It realizes applying loan, cash budget, loan management and etc, Practice contest module design as shows in Figure 4. After finalizing all decision, the teacher goes proceed with next quarter, every team can check the business situation of last quarter, pay last quarter's orders, collect all loan, short inventory, then analyze the financial situation and business management of last quarter [20].
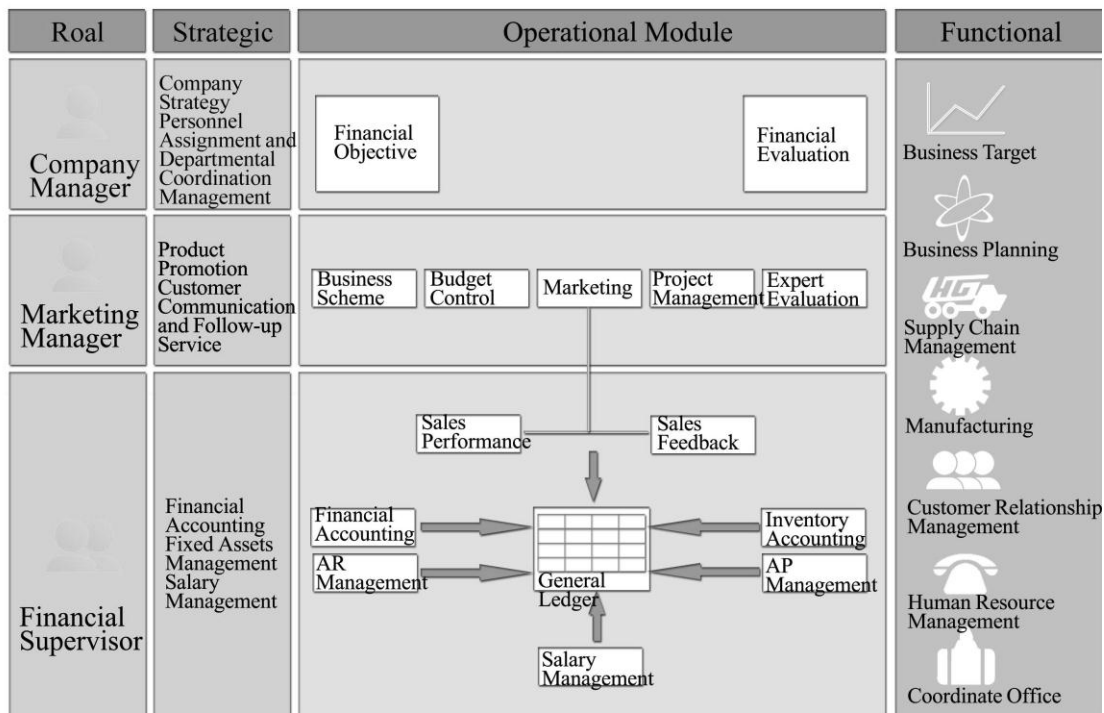
Figure 4. Practice Contest Module Design

3.4. Career Planning Module Design

From freshman to students' employment, the career planning module uses the practical training through interaction of machine and human being [21]. The software helps students to understand the feature of business and career, to identify the direction of career, to planning and personal career development and comprehensive management career [22]. Through the scientific systemic theoretical training, combined with actual combat simulation software, it guides students goes with experiential learning, which allow students to understand their own

personality and the job demands, enhance the perceptual knowledge, quickly positioning the goals of learning practical teaching. Through the vocational interest measurement system, the students discover their own interests and potential, locate their own disposition and understand their advantages and disadvantages through career identify system, analyze the personalities of partner & competitors and raise the abilities of implementation and professional through mastering personality analysis, simulate the emergencies happened on different workplaces, train the students' abilities of handling crisis's, master career transition strategies and methods.

Career planning module provides the solutions for students' personal development career. The basic idea of the module design is job valuation [23]. Its auxiliary function is analyzing the jobs. In the perspective of the career planning training, based on professional practice, professional job's divide and matching, job training, career guidance, career assistance, career navigation, self-reinforcing, job hunting, learning garden of actual combat and etc. Professional job's divide and matching is aim at professionally job matching for different employee. Based on the system analysis, the report estimates the possibility of future jobs, then guide employment accordingly. The position training is directing at the work skills for different industry and different position, better the abilities of students' job qualification through task type training method. Through the system evaluation and career planning, Career guidance leads the students to understand the career planning, to make career decision, to interpret professional defects, to plans for the future direction of career. Auxiliary workplace includes workplace psychological, employment guidance and ability of adapting to the workplace, etc. Career navigation analyze the jobs from communication, service, and finance fields and etc, analyze the job and its files, which helps students making right decision from tourism services, catering, TV, clothes, medicine and etc. Self-reinforcing is about perfecting ourselves from seven aspects includes self awareness training, emotional intelligence management and training, communication and oral expressing ability, learning ability training, job training, negotiation skills training, character training. Job hunting includes interview training, written examination training, resume guidance, job hunting news and job hunting stories. Learning garden includes career planning document data and video data, which are for students' learning and reference.

In career planning module, aiming at the situation that students are not familiar with the process of establishing a company, lacking of guidance and etc, the software simulates all processes of establishing a company, in which interactively uses flash player and 3D to show the process of register [24]. It includes Limited Liability Company, partnership, sole proprietorship enterprise, individual industrial and commercial households, and four types in total. Taking limited liability company for example, the register process includes choosing the type of enterprise, rent office space, advance registration, formulate the company's articles of association, pre-approval, drafting the sponsor agreement, legal representatives registration, opens an account in bank, issue capital verification report, issue business license, officially seal for record, organize code certificate, deal with social security and tax registration certificate, trademark registration and etc. The service office involves in business of the software includes industrial and commercial bureau, tax bureau, bureau of quality and technical supervision, the ministry of human resources and social security bureau, banks, public security bureau and the public accounting firm.

3.5. Case Analysis Module Design

Case analysis module is a comprehensive system gathers optimize resource management, retrieval and data use. Under the digital information management, the database stimulates college students' innovative consciousness and entrepreneurial zeal, accumulate knowledge, improve the entrepreneurial skills through a large number of innovative thinking tutorials, case, case analysis, career planning pioneer example and etc resources [25]. Formed by three roles includes administrators, teachers and students, innovative undertaking database module includes multiple secondary subdirectory such as career planning course, entrepreneurial stories, entrepreneurial elite, employment guidance, mentoring and career life, and information, etc, includes case analysis sample, entrepreneurial thinking ability test, case study on entrepreneurship, entrepreneurial case analysis, the pioneering project case analysis, case analysis, case analysis, business management team case study on entrepreneurial culture, entrepreneurial success factors analysis. This module collects academic database literature, updates dynamic continuously. Students can enjoy the efficient and convenient resource storage, information sharing, and the query editor. Case analysis has been applied on education training and talent assessment for many years. As the main means of a major education college students' practice education training, entrepreneur cases analysis module allows students analyze the cases, allow them master the basic rules of running business through analyzing their answers. As the evaluation tool, entrepreneur cases analysis module assesses as third party that weather the decisions the business owners made in complicated situation were right or wrong, which also helps improve the competitors' cognition and judgment [26].

4. Conclusion

Students realize their entrepreneurial ability through the evaluation of business testing module of Students' entrepreneurship platform. The students start thinking expansion in innovative thinking ability training module according to test reports and system suggestions [27]. According the multimedia digital resources of business case analysis module, the students review the motivational video, consult the business records, listen to video of startup business, and increase business theory knowledge. In career planning module, it simulates kinds of establishment of real companies, finishes training of the business plan, and writes a business plan, deals with Industrial and Commercial Bureau registration and Tax Bureau Registration, makes management decision on running of business. It simulates the real environment in Business Practice contest module, analyze sorts of situation they may met in real company and make the running business decisions. It analyze, judge and evaluate the problems and results of business running which may occurred, deepen their real experience in company, helps students to improve career consciousness, master the business skills, strength their ability of getting a job.

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