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DELIVERING QUALITY SCIENCE TO THE WORLD

Based on Ios Sales Management System Survey Function Design

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Abstract: With the rapid development of science and technology, iPad lead plate trend already no longer limited to entertainment, its application has taken steps to enterprise management. Questionnaire is the company to customers to understand the information techniques and are widely used, based on the IOS to iPad terminals questionnaire (Survey) emerge as the times require function. I was assigned to complete the Survey, commonly used questionnaires, and performs GPS positioning function. The function based on iOS platform, using Objective-c language, in iPad flat panel computer for customer terminal, selects SQLite3as the database, using three-layer architecture completed.
Keywords: iOS; Survey; SQLite3; three-layer architecture.

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1. INTRODUCTION

Questionnaire survey plays an important role in the management of sales system. Through the questionnaire survey of sales representatives and doctors, we can get information feedback from employees and customers in a timely manner, so as to understand the situation and willingness of employees, and to know the needs of doctors. Based on this, a reasonable enterprise plan is formulated to optimize the company's plans.

2. BACKGROUND AND SIGNIFICANCE OF SYSTEM DEVELOPMENT

2.1 Research background

Nowadays, with the rapid development of science and technology, many enterprises actively introduce advanced company management and marketing technology and integrate it into high-tech equipment so as to better manage the company and grasp the market. In order to understand the requirements and trends of sales representatives and customers, questionnaire survey is indispensable. Traditional paper questionnaires have been difficult to meet the needs of companies and customers. Sales staff, on the other hand, for a long time in the outside, the attendance and work cannot be obtained, brought inconvenience to the company's attendance, GPS positioning function was introduced to the questionnaire, can comprehensive understand the employee's work.

2.2 Research purpose and significance

For the sales, the customer's demand is very important, for a company, know what kind of product,

what kind of strategy can better impress the customer, is the first task.

Traditional questionnaire has the following drawbacks: (1) The distribution of inconvenience: the sales representative, sometimes long absence and questionnaires are often sold by the company, due to the sales representative can't get the latest and the company is the questionnaire in time. (2) Inconvenience: traditional paper questionnaires need to be loaded into special folders, which is extremely inconvenient for long-term and traveling sales representatives. (3) Inconvenience: traditional paper questionnaire, for different products, different objects of different questionnaires, needs sales representatives to make the classification, save, difficult to manage. (4) Feedback is inconvenient: after the paper questionnaire is completed, it needs to be sent to the company by hand, and the delay in time will not be conducive to the company's latest news. (5) Inconveniences: the paper files are easily lost, which can bring negative influence on the company's data collection.

Used the questionnaire investigation, and has the following advantages: (1) the distribution of convenience: the company just put the latest questionnaire is submitted to the server, the terminal will automatically obtain data through the network, the update of the questionnaire. (2) Easy to carry: with an ipad terminal, you can collect all the questionnaires with a small tablet. (3) easy to use: the ipad terminal will automatically categorize all kinds of questionnaires, and the date of distribution and the effective date; When filling in the questionnaire with customers and themselves, they will not delay too much time or make mistakes due to the questionnaire classification. (4) Convenience of feedback: when the questionnaire is completed, the system will collect the results of the questionnaire and upload it to the server when the network is allowed. (5) The questionnaire is uploaded to the database of the server in the form of data, which is easy to save and manage.

GPS module: traditional sales mode, it is difficult to make effective statistics on the working time and location of sales representative. Using GPS module, we can obtain the data of sales representative position, so as to make reasonable and reliable assessment of employees' work situation.

2.3 Main work

(1) Collect the questionnaire types commonly used by sales representatives in the market, and make statistics to master the relevant information of the questionnaire.

(2) According to the type of questionnaire, the establishment and correlation of database are studied.

(3) Detailed design patterns in system development.

(4) The data table was established and the corresponding data was inserted in the database.

(5) Make a careful study of iOS operating system.

(6) Ccarry out research on the built-in GPS module of the ipad, and make GPS strategy according to its characteristics.

(7) Realize the layout of the foreground interface, data transmission and storage and PGS module function.

3. RELATED TECHNOLOGY INTRODUCTION

3.1 IOS operating system

IOS is an operating system developed by apple for the iPhone. It's mostly for iPhone, iPod touch and iPad. Like its Mac OS X operating system, it is based on Darwin. Originally called the iPhone OS, it

was renamed iOS at WWDC on June 7, 2010. The system architecture of iOS is divided into four levels: the Core OS layer, the Core Services layer, the Media layer, and the Cocoa Touch layer. The system operation takes up about 240MB of storage space.

3.2 Objective-C

Objective-c, which usually writes ObjC and less used Objective C or Obj-C, is an object-oriented programming language that expands C. It is mainly used in Mac OS X and GNUstep, two systems that use the OpenStep standard, and it is the basic language in NeXTSTEP and OpenStep.

3.3 SQLite

SQLite is an old, lightweight file database that is free, easy to use, no installation, no configuration, and no administrator. College is open source embedded database products, it is a rising star in the same products, in 2005 won the open source awards, and the latest PHP5 also embedded SQLite. Compared to another famous embedded database, Berkely DB. SQLite is a relational database that supports most SQL statements, which is a better place than BDB. College as an embedded database, SQLite like Berkely DB, provided in the form of libraries, operating the database files directly by C function. (other things, too. In the download package, there are SQLite3. DLL and SQLite3. Def, which can generate the link library with VC's lib tool, or directly link DLL files. College isn't the SQLite Server, and so is essentially different, such as it and the program runs in the same process. There is no interprocess communication in the middle, which is fast and compact and easy to distribute. Suitable for running in single machine environment and embedded environment.

Support for transaction mechanisms and blob data types. Support most of the SQL92 standard. A complete database to store a file on disk. College the same database file can be used on different machines, the largest support database to 2 TB. The college open source code, the code 95% better annotation, simple and easy to use API.

3.4 GPS

GPS positioning satellite is used to locate and navigate in real time around the world. It is called global positioning system, or GPS.

GPS function must have three elements: GPS terminal, transmission network and monitoring platform; These three elements are indispensable; Through these three factors, we can provide vehicle positioning, anti-theft, anti-robbery, driving route monitoring and call command.

The basic principle of GPS positioning is based on the satellite instantaneous position of the high-speed movement as the known starting data, using the space distance resection method to determine the location of the test point.

Regarding the positioning technology of ipad: the GPS module of the ipad is completed by WIFI, honeycomb site and satellite GPS, and the accuracy of the three completed positions is increased in turn. However, all three technologies have special requirements.

WIFI: the device must be connected to the wireless network and cannot be used when there is no WIFI.

Cellular site: the device must be inserted into 3G signal card, so only 3G version of the ipad can be

used when the 3G card is loaded.

Satellite positioning: the satellite positioning is the most accurate, but it has to be in the open air to be able to locate accurately, which is difficult for the indoor sales representative.

4. SYSTEM ANALYSIS AND DESIGN

4.1 System demand analysis

Based on the iOS questionnaire Survey module, when online, the data is automatically obtained from the server, stored in the database and displayed on the UI. The questionnaire is completed and the results are stored in the database and sent to the server. When offline, get local data from the database and display it in the UI; The questionnaire is completed and stored in the local database. When the network is allowed, it is sent to the server.

There are two main types of users in the Survey module: sales representative and customer doctor. The two objects correspond to different questionnaires. Different medicines have different questionnaires. On the UI, this distinction needs to be distinguished and implemented so that it can be selected.

GPS: to customize the reasonable GPS scheme, to achieve the accurate effect of saving electricity and GPS positioning.

4.2 System function module design

(1) Object selection function

There are two main types of questionnaire functions: individuals and doctors. The individual is the sales representative, the doctor is the customer to visit, each object corresponds to the different questionnaire list. The user can select different objects to refresh the corresponding questionnaire list on the current page.

On the other hand, the sales representative's questionnaire is usually private, so the user should be asked to enter the password again to determine the identity before displaying the list of questionnaires corresponding to the sales representative. Figure 1 is an object selection function flow chart.

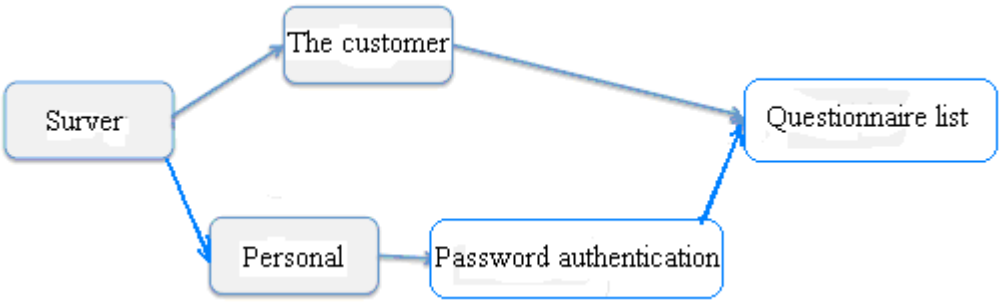

Figure 1. Object function flow chart.

(2) Product list

Each sales representative has a medical product that corresponds to his or her own business and is not identical to one another. Therefore, it is extremely necessary to display the products sold by medical representatives on the main page. And click on the corresponding LOGO of pharmaceutical products, and the corresponding questionnaire list can be refreshed to bring great convenience to the sales representative.

(3) Questionnaire list

Each questionnaire has the corresponding questionnaire name, the release date, the deadline, the target completion amount, the completed amount of data. For the sales representative, these data are extremely important, so the above data should be displayed in the questionnaire. Special signs need to be given for new and upcoming questionnaires to get users' attention.

(4) Questionnaire requirements

Different questionnaires will have different types of questions. There are several types of title: single choice, multiple choice, sort problem, subjective problem. Different types of topics should make it easy for users to distinguish.

5. ARCHITECTURE DESIGN

According to the customer's request, and through the concrete analysis, the system is built with three layers of architecture. The data link layer, the business logic layer, and the UI layer. When the UI changes, you need to get the data to ask the business logic layer. The business logic layer analyzes the data presented by the UI to the data link layer. After the data link layer gets the data directly from the network or the database, the resulting data is given to the business logic layer. The business logic layer processes the data, passes it to the UI layer, and displays it, as shown in figure 2.

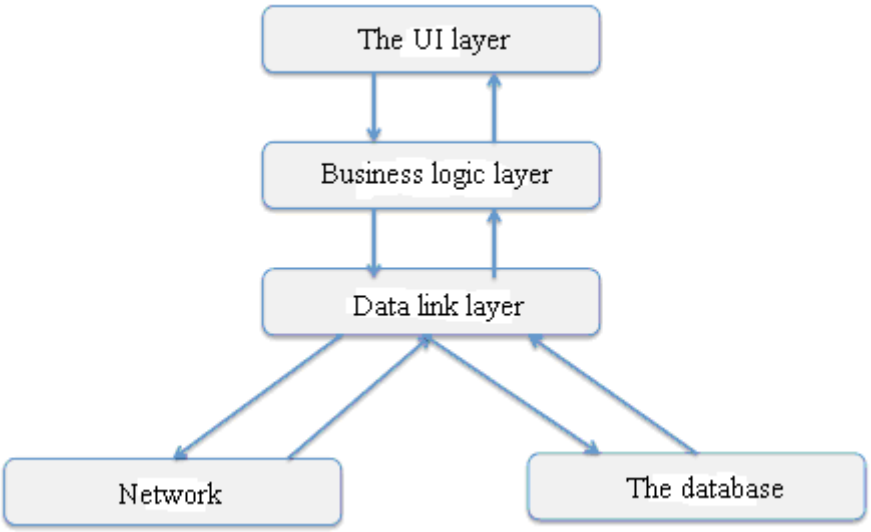

Figure 2 system architecture diagram

6. DATABASE DESIGN

The questionnaire mainly includes the topic information and the user's answer information. The topic information includes the topic, the topic type, and the answer information is the information that the user selects or fills in. This information should be stored in a certain format in the database, so the database should record each questionnaire in detail. When choosing a user object, can, depending on the type of object retrieved from the database of the corresponding questionnaire, and questionnaire name, publication date, deadline, whether complete, complete, objective complete information such as the storage to C_SURVEY_QUESTION table, the table structure shown in table 1. When choosing a product, the corresponding questionnaire can be obtained according to the product type. When choosing a single questionnaire, database according to the special field of the selected data retrieved,

the corresponding questionnaire for specific information, such as: a brief introduction about the questionnaire, the number of questions in the questionnaire, the questionnaire the questions and answers; When completing the questionnaire, the selected answer is stored in the data table C_SURVEY_OPTION table, and the table structure is shown in table 2.

Table 1 C_survey_question

▼C_SURVEY_QUESTION	table		CRE
QID	field	NUMERIC	
ID	field	TEXT PRIMARY KEY	
SURVEYID	field	TEXT	
TYPE	field	TEXT	
CONTENT	field	TEXT	
CREATETIME	field	TIMESTAMP	
UPDATETIME	field	TIMESTAMP	
ISACTIVE	field	NUMERIC	

Table 2 C_survey_option

▼C_SURVEY_OPTION	table	
ID	field	TEXT PRIMAI
SURVEYID	field	TEXT
QUESTIONID	field	TEXT
TYPE	field	TEXT
CONTENT	field	TEXT
NEEDINPUTTEXT	field	NUMERIC
SORTCODE	field	NUMERIC
CREATETIME	field	TIMESTAMPE
UPDATETIME	field	TIMESTAMP
ISACTIVE	field	NUMERIC

Table 3 C_survey_brand

▼C_SURVEY_BRAND	table		CREATE TA
ID	field	TEXT PRIMARY KEY	
SURVEYID	field	TEXT	
BRANDID	field	TEXT	
BRANDCNAME	field	TEXT	
BRANDENAME	field	TEXT	
CREATETIME	field	TIMESTAMP	
UPDATETIME	field	TIMESTAMP	
ISACTIVE	field	NUMERIC	

7. GPS STRATEGY

(1) Equipment selection: The sales representative is always on the outside, only the cellular site positioning is the most suitable for the sales representative, so the company is equipped with the 3G version of the ipad for the sales representative.

(2) Reliability: Location data obtained through GPS module are: longitude, latitude, altitude, horizontal precision, vertical longitude. After the test, it was found that the position obtained by GPS was greatly deviated from the actual position on the map, so the reliability of GPS was suspected. Studies have found that maps that enter China have been shifted by Chinese authorities and are therefore inaccurate. Through the migration algorithm provided by the third-party professional positioning company, the location data was tested again, and the test was found to be extremely

reliable.

(3) Accuracy: The positioning function is not open for a long time. In the opening, there will be a large deviation in the instantaneous positioning. Such data is not what we want. After the application of the GPS module in the field, it is found that the GPS occasionally has a large deviation, which is not what we want. Therefore, we need to locate the GPS module every five seconds and obtain the minimum positioning error.

(4) Location frequency: The position frequency of the iPad is based on displacement, which is 0 meters, 100 meters, and 1000 meters. Each movement of 0 meters or 100 meters for a position. Frequency is difficult to grasp the location, and our goal to once every 5 seconds positioning, therefore, we set the timer, once every five seconds to open the position, when the end of the positioning, immediately shut down, five seconds later, again to open.

(5) Background: The iPad supports background operation, and when the program enters the background, GPS needs to continue to run, so as to continuously locate.

8. SYSTEM IMPLEMENTATION

8.1 Survey function main interface

Click "Suvey" to enter the questionnaire interface.

Customer survey -- customer survey button, display the number of questionnaire list; Click the button and "SurveyList" refreshes the list of questionnaires that doctors need to fill out.

Internal investigation -- the internal research button shows the number of questionnaires needed to be filled by medical representatives; Click the button to verify the password; Verify that the "SurveyList" has refreshed the questionnaire that the medical representative needs to fill out.

List of products -- here, show the LOGO of the medicine represented by the sales representative, click the selection, and "SurveyList" will refresh the list of questionnaires corresponding to the medicine.

"SurveyList" -- here is a list of the questionnaires required by the sales representative. Each list shows the name of the questionnaire, the deadline, the number of completed items, and the number of targets. Use the "New" icon to represent the latest questionnaire; Use the "colck" icon to indicate the icon to expire. Click on one of the questionnaires, the document changes color, used to distinguish. Click the fill button to enter the questionnaire.

Due to the uniqueness of customer survey and internal research selection, in this interface, the corresponding processing should be done to prevent the two buttons from being clicked.

8.2 Questionnaire topic

Single topic: Use tableView control to realize, circle as the answer, only allow to select one option, and select other options, the original option will be automatically canceled.

Multiple choice: Use tableView control to implement, with square block as the answer, allow to select multiple options, select and then click, as to cancel the choice.

Sort problem: Implement with tableView control, user can hold down option, make slide, complete sort.

Subject: with the textView control, the user clicks the answer area, the ipad keyboard slides out automatically, and the answer area is automatically shortened to the keyboard level. Click the

keyboard recovery key on the keyboard, the keyboard disappears, the answer area is restored to the original size, and the written answer is displayed to the bottom.

9. CONCLUSION

The Survey function of the management sales system is an enterprise management system based on the ipad. The Survey sub-module adopts the three-tier architecture as the system architecture, with SQLite as the database, and integrates the GPS global status function. Through the demand analysis and design, the questionnaire was downloaded from the server, the questionnaire was completed by the client, and the questionnaire results were returned to the server, and the results were stored in the local function. Through reasonable UI design, the whole function is more humanized and rationalized. Through the design and development of this function, I understand the requirements of enterprise software, design process and framework, and have a deeper understanding of the development language of iOS.

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